

ALINCO

DR-MD500

Operation Manual

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OVERVIEW OPERATION

Terminology in this book.

CPS: PC software

TG:Talk Group

DMR: Digital Mobile Radio

Some Notes.

In the radio contains many work modes and it allows user can set. Therefore, depend on the “work mode” you set, it may limit user to access to functions in radio setting menu.

Commercial mode:

VFO channel does not exist.

User cannot access to all setting functions in the radio setting menu.

Some setting functions are hidden in the radio setting but it may work by the CPS setting when you assign a function to programmable key.

Amateur mode:

VFO channel exist.

User can access to all setting functions in the radio setting menu.

To set the frequency bands (work mode), need to use “set band” software, please contact to your dealer to set it.

To see the frequency bands go to CPS → Model → Model information.

1.Status Indications

The top LED will help you to identify the current radio status.

LED Indication	Status
Constant Red	Transmitting
Constant Green	Analog Receiving
Constant Cyan	Digital Receiving
Flashes Green	Scan

2.Programmed Key

There are programmable keys and you can assign the desired functions to it by setting on radio or by setting on CPS. On front panel [P1], [P2], [P3],[P4],[P5],[P6]. And on speaker microphone PA, PB, PC, PD.

Method 1: In radio Menu - Settings - Radio Set - P1~P6, PA-PD.

Method 2: In CPS - Public - Optional Setting - Key function

OFF	No Function
Volt	Check the current battery capacity voltage
Tx Power	Switch the power between super high, high, middle and low power.
TalkAround	Switch between Talk Around and Repeater mode
Reverse	Turn on/off the frequency reverse function.
Digi Encrypt	Choose the digital encryption group for digital channel
Call	In Analog mode, send the DTMF/5TONE/2TONE encode. This function

	is only valid for analog channel.
VFO / MR	Switch between VFO mode and memory channel mode.
Scan	Scan on/off
FM Radio	FM radio on/off
Alarm	Long press the key to start alarm, short press again to exit the alarm.
Record Switch	Enable/disable the recording function
Record	Start/stop recording. When stop recording, the radio will remind repeat or send the record. Radio can record both TX and RX voice during the call.
SMS	In digital mode, press to enter into SMS messages
Dial	Start the manually dial
Monitor	Monitor the weak signal or the signal with unmatched ID.
Main CH Switch	Choose channel A or channel B as the main channel
Hot Key 1~6	Selects Hot Keys 1-6 Note: Hot key setup details on next page
Work Alone	Turn on/off the work alone function.

Nuisance Delete	During scanning, press the key to skip the unwanted channel
Digi Monitor	In DMR mode, press the key to turn on/off digital monitor
Sub CH On/Off	Turn on/ off the sub channel
Priority Zone	Switch to Priority Zone
Program Scan	"Press the key to start the scan in VFO channel scan start and end frequency must be programmed in CPS."
Enhanced Sound	In digital channel, switch the microphone tone to normal or enhanced mode
Last Call Reply	In digital channel, press the key to access the last call and press PTT to call back.
Switch ChType	Switch the channel type (Analog, Digital, Ana+Dgi, Dgi+Ana)
Roaming	In standby, press the key programmed as "Roaming" to search and lock on the repeater with strongest signal. (Note: After lock on a repeater, the radio will return to last frequency only after channel or frequency is changed. The repeater frequency list must be pre-programmed in CPS.)
Max VOL Set	In standby, press the key programmed as "Max Volume", will enable users to set the maximum RX volume.
Slot Set	Choose Slot for current channel, this function is only valid in repeater mode.
Zone Select	In standby, press the programmed "Zone Select" key, it will allow you input the zone number and then press confirm key will switch to the zone.
A CH Mute	Mute the main channel
B CH Mute	Mute the sub channel
Roaming Set	Enter into Roaming menu quickly
Zone Up	Switch the zone upwardly
Zone Dn	Switch the zone downwardly
Exit	Exit the menu (only for A-D short press)
Menu	Enter into the menu (only for A-D short press)

Hot Key Setting for P1, P2, P3, P4, P5, P6, PA-PD

Enter radio Menu-Settings-Radio Set-P1-P6, PA-PD, sub menu. User can choose settings for Hot Keys 1-6.

Hot Key function details must be setup in CPS - Public - Hot key.

Call	Analog	Should edit the analog quick call first, then choose analog in the hot key set. Press the key to transmit 2Tone/5Tone/DTMF to start the analog quick call.
	Digital	It allows to select a contact from the digital contact list, press the key to switch the channel to the contact temporary. It will switch back to the original contact after the group/personal call hold time.
Menu	SMS	Quick access to Messages in the menu
	New Msg	Quick access to New Msg in the Menu - Messages
	Hot Text	Quick access to Quick Text in the Menu - Messages
	Received SMS	Quick access to Inbox in the Menu - Messages
	Send SMS	Quick access to Out box in the Menu - Messages
	Contact list	Quick access to Contact list in the Menu - Contacts
	Manual dial	Quick access to Manual Dial in the Menu - Contacts
	Call Log	Quick access to Call Log in the Menu
	Dialed Calls	Quick access to Dialed Calls in the Menu - Call Log
	Received Calls	Quick access to Answered Calls in the Menu - Call Log
	Missed Calls	Quick access to Missed Calls in the Menu - Call Log
	Zone	Quick access to Zone in the Menu
	Radio set	Quick access to Radio Set in the Menu - Settings

3. Combination Key Function

[MENU] + number key operation:

Press [MENU] key and hold until the LCD display "Next Please Press Dial Key", press the number key, it will perform the programmed function.

Combination key function shall be setup in CPS software-Public-Hot key.

4. Radio Operation

4.1. Power on the Radio

Turn on the radio by pressing the [Power] key, and the LCD displays "Booting, please wait", then it will show a start-up message, and you will hear a beep after 7 seconds.

To power off the radio Press and hold the [Power] key in 5 seconds.

4.2. Adjust Volume

The left two knobs are separated for volume change on main channel and sub channel, the upper one is for the upper channel on screen, the bottom one is for the bottom channel on screen.

Rotate the knob to adjust the volume. Turn clockwise to increase the volume and counterclockwise to decrease the volume. The LCD display will show the volume status during an adjustment.

4.3. Main Band/Sub Band Switch

Press the [M/S] key on Speaker microphone or programmed [Main Channel Switch] key to any programmable key to switch the main channel to the other channel if there is 2 channels shown on the display. The channel with bold characters is the main channel. (Dial the channel selector to change the main channel or frequency).

4.4.VFO/Channel Switch

Press the programmed [VFO/MR] key to switch between VFO and memory channel display.

4.5.Set Up VFO Frequency

Turn the radio to VFO mode, then switch the channel to the main band, the VFO frequency can only be set up when the channel is in the main "bold text" channel.

Operation 1: Input the VFO frequency directly by the keyboard.

Operation 2: Turn the channel selector to adjust the VFO frequency steps.

4.6.Select a Channel

Press the programmed [VFO/MR] key to switch the radio between VFO and Channel mode, select Channel mode.

Operation 1: Turn the channel dial to select a channel.

Operation 2: Input the channel numbers by the keyboard. For example, if you want switch to channel 99, input 0/ 0/ 9 /9 a total of 4 digits, and it will switch to channel 99.

A channel can either be Analog or Digital.

For the analog channels the Push-To-Talk button is always available, and on the Digital Channels the parameters can be set up by the users / system operators by individual channel to allow talk permit.

There are four possible settings that can be selected in the CPS channel:

- (1).Always Allow: The user can transmit all the time.
- (2).Channel Free: The radio can transmit only if the channel is free.
- (3).Different Color Code: The radio can transmit if the channel is free, but the color code is mismatch.
- (4).Same Color Code: The radio can transmit only if the channel is free and the color code matches.

4.7.New channel

- (1).Enter radio Menu-Settings-Chan Set-New Chan.
- (2).Input the channel number and name.
- (3).Select a zone from zone list, then Confirm to Save. The radio will start channel saving, and saving is completed when it displays "Saved".
- (4).Now select the new channel in the radio and go to Channel Settings menu to set up all the new channel's parameters.

4.8.Delete Channel

Enter radio Menu-Settings-Chan Set-Delete Chan, it allows to delete the current channel.

4.9.Receiving and Responding to a Radio Call

When the radio is in the digital mode, it can receive and respond to a call with the incoming call channel is set as same frequency/color code/ slot.

When radio receives a call:

- The cyan LED lights up.
- The left top corner of LCD shows the RSSI icon, and the LCD display will show DMR ID/name/city/ state/country/call type and incoming icon based on what is in the contact list.
- When the call is ended, it will display "Call end", and you can press [PTT] to respond the call. Make sure to respond the call within the digital hold time, otherwise the radio will drop the

connection after the digital hold time is expired.

4.10. Make a Digital Call

1. Talk to a preset TG/DMR ID in channel

Choose a programmed channel and press PTT to start the call.

2. Talk to a temporary TG/DMR ID not in the channel

Method 1: Select a temporary TG/DMR ID from the Talk Group list.

(1). Choose a programmed channel.

(2). Press [EXIT] key to enter the TG List, turn the channel switch or press the UP/DOWN key on microphone to choose a TG/DMR ID.

Method 2: Select a temporary TG/DMR ID from the keypad.

(1). Choose a programmed channel.

- Press [Menu] key to Talk Group, select Manual Dial.
- Input the ID number by keypad on microphone, press [#] key to switch group ID or Private DMR ID. Press the [PTT] key to start the call, the red LED lights up, the receiver ID/name/city/state/country/call type and call out icon will be display on the LCD. Release [PTT] key to receive the reply.
 - » The temporary call will be dropped when the digital

4.11. Monitor

In standby, press the programmed [Monitor] key to enter Monitor. When receiving matched carrier but the signaling / ID is unmatched or the signal is too weak, this function allows monitor the weak signal and signal with unmatched ID. Press the key again to shut off speaker and return to standby.

» When in analog mode, if no signal, it will emit background noise sound when press the Monitor Key. The Rx icon is displayed when monitor is activated.

4.12. Emergency Alarm

Press the programmed [Emergency Alarm] key to turn on alarm function, then press this key again to turn off. There are some Emergency alarm mode can be set by CPS.

4.13. Access Advanced Features for Private Call

Method 1: To Access a Private Call from Contact list

Press the [MENU] key to enter the Talk Group, select a private call ID.

Press Option to access the advanced features.

Method 2: Access from Manual Dial

1. Press the [MENU] key to enter the Talk Group, select Manual Dial.

2. Input the Private ID, press Option to access the advanced features.

4.14. Set Up Advanced Features for Private Call

4.14.1. Call Alert

Select Call Alert, it will send out a call alert, the target radio will sound a beep when receiving the call alert, and it will return a success call or failed call message to the transmit radio.

4.14.2. Remote Monitor

Select Remote Monitor, and it will send out a signal for the target radio will turn on its microphone and transmit when receiving the signaling, it will send back the voice to the transmit radio. With this feature you can monitor the sound activity near the target radio remotely.

» You have to check on the function in CPS-Optional Setting-Digital Func- Remote Monitor first.

4.14.3. Check Radio

Select Check Radio, and it will send out a radio check to the target radio which will send back a message if it is available or not available to the transmit radio. With this feature, you can determine if another radio is active and powered on in the system.

4.14.4. Kill

Select Kill, and it will send out a kill signaling to the target radio which will be killed (No display, no operation) when receiving the signaling and it will send back a kill successful message to the transmit radio.

» You have to check on the function in CPS-Optional Setting-Digital Func- Digital Remote Stun&Kill first.

4.14.5. Wake

Select Wake, and it will send out a wake signaling to the killed radio and the target radio will return to standby when it receives this signaling and send back a Wake successful message to the transmit radio.

» You have to check on the function in CPS-Optional Setting-Digital Func- Digital Remote Stun&Kill first.

4.15. Talk Group

TG List: Will display the talk group list which had been programmed in the PC software. This list is used as a look-up table to display the contact TG information when receiving a call.

New Contact: Allows to create a new TG.

Manual Dial: Input the group ID or private ID to access a TG quickly. Press [#] key to switch group ID or Private DMR ID.

Talker Alias: Allows Alias Tx Set / Alias Rx Display.

4.16. SMS

New Msg: Create a new message and send to a contact.

InBox: Shows all the received messages, and allows forward or delete the message.

OutBox: Shows all the sent messages, and allows resend, forward or delete of the message.

Quick Text: Pre-saved messages, and allows to send, edit or delete the message.

Draft: Draft messages, and allows send, edit or deleting of the message.

4.17. Call Log

Last Call: The Last Call List show the last caller ID and time information.

It allows you save the last caller as a new contact if it is not in your contact.

Sent: The Sent List shows sent messages until selected and deleted.

Answered: Shows all the answered calls, and allows deleting the call record or saving the ID as a new contact.

Missed: Shows all the missed calls, and allows deleting the call record or saving the ID as a new contact.

4.18. Zone

Select a Zone

A Zone is a group of channels grouped together. The radio has 250 Zones. A Zone can have the maximum of 160 analog and/or digital channels.

Operation 1: Press Zone Up/ Zone Down key on the microphone directly to switch the zone, the LCD will display the selected zone number or name. (these keys are programmable keys so be noted that it also can be assigned as other function, but the factory default setting it is assigned as zone up and zone down)

Operation 2:

Go to radio Menu - Zone, select a zone from the zone list, radio will change to selected zone.

Add or delete a Zone

It allows you manually add or delete a zone in the zone menu directly.

4.19.Scan

In the PC software – Public – Scan list, it allows to save 250 scan lists, and to program the required scan lists and write it into radio.

Switch the radio to channel mode, as the scan list is only valid in the channel mode.

Scan On/Off

Allows turn on or turn off scan manually.

Scan List

It allows to create a new scan list or edit the existing scan list.

4.20.Roaming

Roaming enable users to search the roaming channel list by a programmed time interval and lock on the repeater with the strongest signal. This function is only valid for digital channels.

4.20.1.One Time Roam

Allow you turn on the roaming manually. After the roaming is finished, it will return to the off state. Manually Roaming is a onetime action only.

4.20.2.Roaming Zone

Select Roam Zone: select a Roaming Zone from the list to set it as active zone. You can also scroll down the list of Zones and select Add Channel to add a new channel to the current Roaming Zone and set the parameters.

Select Add Channel: Add a new roaming channel to the current zone.

New Roam Ch: Allows you modify the RX frequency/TX frequency/CC/ TS/CH name for the roaming channel. Also allow you remove the roaming channel from the zone.

Edit Name: Edit the zone name.

Select Zone: Select the roaming zone for current channel.

Delete Zone: Delete the roaming zone from the current channel.

4.20.3.Auto Roaming settings

Set the fixed time waiting interval to begin automatic roaming when the repeater cannot be found, roaming will begin at the end of this time.

On/Off: Turn on or turn off the auto roaming function.

Fixed Time Set: The roaming will be started at preset fixed time or set to off.

4.20.4.Start Roaming

Fixed Time: Starts timed roaming

Repeater check: The roaming will be started when the radio cannot find a repeater - "The repeater is out of range" icon will appear, then the radio will perform roaming one time, and return to roaming off automatically.

4.20.5.Repeater Check

On/Off: Turn on this function will allow the radio to check the repeater status.

Interval Set: When the repeater is out of range, the radio will try reconnect to the repeater, this function allows to set the interval for reconnections.

4.20.6.OutRange Note

When the repeater is out of range after the repeater check, the radio will remind out of range.

Note kind: It allows to set beep or sound to remind out of range.

Note Times: It allows to set the “out of range” display times on screen.

4.20.7.Effect wait

During roaming, when the radio finds a repeater within range, it will stay at the repeater for a short

time.

This function allows to set the stay time on the repeater.

5. Radio Menu Set

5.1. Beep On

Beep On: When press the keypad radio will sound beep

Beep Off: No beep when you press the keypad.

5.2. Speaker Mode

Mic Spk: Allows the voice come out from the speaker on microphone.

Radio Spk: Allows the voice come out from the speaker on radio.

Both: Allows the voice come out from both speakers on microphone and on radio.

5.3. Mic Spk Set

When you select voice output from the speaker on microphone, you have to set it is for A channel or B channel.

Channel A and channel B are separated output voice.

5.4. Back Light

LCD backlight intensity is adjustable in 5 steps

5.5. Ch. Name

CH name: The radio will work in channel mode and display the channel name, and then the programmed VFO/MR key is not valid.

Frequency: The radio will work in VFO mode and display the frequency, which allows the programmed VFO/MR key to switch the VFO and Memory channels.

5.6. Key Lock

Manual Lock:

On radio: Press and hold Red [EXIT] key to lock the keypad. Repeat the operation to unlock the keypad.

On speaker microphone: Long press the [*] key to lock the keypad. Press [MENU] key, on the screen will display “Push * To Unlock Key” then press the [*] key to unlock the keypad.

On the microphone if PD key is programmed as EXIT function, press and hold [EXIT] key to lock the keypad. Repeat the operation to unlock the keypad.

Auto Lock:

Radio will auto lock the keypad when standby for a while.

On the microphone press [MENU] key, on the screen will display “Push * To Unlock Key” then press the [*] key to unlock the keypad.

Depend on the user`s purpose, in the CPU there are some selections to select only knob lock or only keypad on the microphone lock or only front key lock or all will be locked. The function “Forced Lock Key” to prevent user unlock keypad operation on ratio.

Knob Lock	On
Keyboard Lock	On
Front Key Lock	On
Forced Lock Key	Off

During knob lock there are some keys till (Long press knob/ short press knob/ PTT key/ Power key/ sub PTT on M/S key on speaker microphone)

5.7. Auto Power Off

Radio allow to set automatic power off when not used for a period of 10 minutes, 30 minutes, 1 hour or 2 hours of in-operation.

Off: Turn off the function

5.8.TX Timer

30S-240S: The TX will be limited in the set time. When this time is reached, the radio will auto stop transmission.

OFF: Turn off the TX time limit, and there is no limit for the transmission time.

5.9.Max Vol Level

Indoor: Very low volume, suitable for the indoor use. Level 1-8: Set up the maximum volume level.

5.10. Enhanced Sound (For digital mode only)

It will allow you set up the audio pitch. Normal: Low pitch, for TX audio only. Enhance: High pitch, for TX audio only. Indoor: Improved both the TX and RX audio.

Outdoor: Improved both the TX and RX audio.

5.11.Fan Open

PTT: The fan will open when PTT is pressed.

Temperature: The fan will open when the temperature is high.

Both: The fan will open either PTT is pressed or the temperature is high.

5.12.Language

Default language as English

5.13.Menu Exit Time

5S-60S: When enter the menu, the radio will stay at the menu in the set time. When the time is reached, the radio will auto exit the menu.

5.14.Start Display

Picture: The radio will display an ALINCO picture when powered on.

Character: The radio will display the characters set up in PC software when powered on.

Customer's Pic: The radio will display the picture uploaded by PC software. In CPS →Tool →Boot Image, it will allow you upload a Power on Picture.

5.15.CHG Background

Default Picture: In standby, the radio will display default picture.

Customer's Pic: The radio will display the picture uploaded by PC software. In CPS →Tool→Standby BK Picture, it will allow you upload a standby background picture.

5.16.Mic Level

White: In standby, the channel and other information will display color in white. Black: In standby, the channel and other information will display color in black.

5.17-20.Display Color Setting

Select suitable color for displaying.

5.21.Main Ch

Channel A: The upper displayed channel will be set to become the main channel.

Channel B: The lower displayed channel will be set to become the main channel.

5.22.Sub Ch On/Off

Sub Channel On: Turns on the sub channel, and the radio will display both channel.

Sub Channel Off: Turns off the sub channel, and the radio will display the main channel only

5.23.SMS Notify

Different prompt options when receive a new message.

5.24.Call Ring

Different prompt options when receive a new call.

5.25.Freq Step

2.5K, 5K, 6.25K, 10K, 12.5K, 20K, 25K, 30K, 50K, total of 9 frequency steps.

5.26. Ana SQ Level

Adjusts the squelch level to receive signal with different signal strength, and a total of 5 levels offered. This function is only valid for analog channel.

5.27. TBST Sel

TBST frequency is used to activate some dormant repeaters, 1000Hz, 1450Hz, 1750Hz, 2100Hz a total of 4 options are offered.

Hold pressing PTT key, at the same time press UP or DOWN key on microphone to transmit the TBST tone.

5.28. Scan Mode

SCM TO: When scanning and stopping for a signal, stays at the channel 5s before resuming the scan.

SCM CO: When scanning and stopping for signal, stays at the channel until the signal disappears, and resumes scan 2s later.

SCM SE: When scanning and stopping for a signal, will terminate the scan. This function is only valid for a VFO scan.

5.29. Mic Level

Allows to adjust the Microphone gain, level 1 is the lowest, level and 5 is highest gain.

5.30. DTMF Speed

Offers DTMF encode speed which will help the receiver decode successfully, 50~500ms are the options.

5.31. FM Radio

Turn on or off the FM radio.

5.32. FM Radio Moni

Radio Mon On: When FM radio is used, you can still receive or transmit on the channel. Radio Mon

Off: When FM radio is used, the radio will not permit a transmission or reception.

5.33. Start Up Pwd

On: Set up the password for startup. You need to input the password to power on the radio.

Off: No password is required for the radio power on start up.

The password shall be set up in CPS-Optional Setting-Power on-Power-on Password Char.

5.34-35. AuRepeater A or B (For VFO A or B)

Turn on the Auto Repeater function, the TX frequency in VFO mode will auto increase or reduce frequency base on the set up offset frequency in CPS.

Off: Turn off the function.

Positive: TX frequency = RX frequency + Offset frequency.

Negative: TX frequency = RX frequency - Offset frequency.

5.36-57. Key P1-P6, PA-PD

(P1-P6 on front panel, PA-PD on speaker microphone)

These keys are programmable keys. It allows user to can program for different functions.

5.58. Repeater (Cross-band)

Turning on the cross-band repeater function will allow the radio to work as a small local repeater. The radio will TX on one channel, RX on the other channel.

Cross-band Analog-Analog: Must be UHF-VHF, or VHF-UHF cross bands.

Cross-band Analog- Digital: Must be UHF-VHF, or VHF-UHF cross bands.

Cross-band Digital- Digital: UHF-VHF, or VHF-UHF cross bands, different times lots.

Cross-band Digital- Digital: Same UHF or same VHF bands, different time lots.

Cross-band same frequency of Digital-Digital: TX and RX are at same frequencies, but different times lots on VFO A and VFO B. Radio must also be in Double Slot operation.

Note: Turn off Digital Monitor when using the Cross-band repeat function

Analog (A) to Analog (A) Cross band Repeater Setup

- 1.To set the channels or frequencies to use with cross band in operation, the radio must be set to display both the Main Channel (VFO A) and the Sub-Channel (VFO B).
- 2.Set the analog channel with simplex or repeater frequency.
- 3.Turning the Repeater function ON in the Radio Settings menu.

Analog (A) to Digital (D) or Digital (D) to Analog (A) Cross band Repeater Setup

- 1.To set the channels or frequencies you will want to use with cross band operation, the radio must be set to display both the Main Channel (VFO A) and the Sub-Channel (VFO B).
- 2.Set the analog channel with simplex or repeater frequency, and set the digital channel with simplex frequency only.
- 3.Turning the Repeater function ON in the Radio Settings menu.

Digital (D) to Digital (D) Cross band Repeater Setup

- 1.To set the channels or frequencies you will want to use with (D) to (D) cross band operation, the radio must be set to display both the Main Channel (VFO A) and the Sub-Channel (VFO B).
- 2.Enter the Simplex channel or Simplex frequency for VFO A and the Simplex channel or frequency for (VFO B).
- 3.Set the correct Color Code and set the two (VFO) channels to DIFFERENT Time Slots (TS)
- 4.Set the radio to Double Slot operation.
- 5.Turning the Repeater function ON in the Radio Settings menu.

Note: Allows the VFO A and VFO B at same frequency but different time slot, the radio will work as a digital single frequency repeater.

At the Repeater (Cross-band) only able to transmits at (small, low and middle power level).

5.59.SMS Format

M-SMS: SMS text format is compatible with Motorola DMR radio.

H-SMS: SMS text format is compatible with Hytera DMR radio.

DMR Standard: SMS text format is compatible with general DMR radios.

5.60. CTC Ste

CTCSS eliminate tail tone way

5.61.No-signal Ste

No signal eliminate tail tone way

5.62.Time Zone

Set up the time zone of your location.

5.63.Date Time

Time Set: Allows to set up the date and time manually. Use the channel switch to set the current year.

Move to the month by pushing channel selector knob on front panel. Set the month, and push the channel selector knob to move forward each step. Once done, press the Menu key to save the date and time.

6.Channel Setting

Channel set menu Route: Main Menu → Settings → Chan Set. The channel set menu will change

accordingly to the channel type. When the channel type is digital, it will automatically hide the analog menus.

※Chan Set (Digital Channel)

6.1.New Channel

Radio allows to create a new channel and save current set up to the new channel.

- 1.Select "New Chan", then input new channel number and confirm.
- 2.Input channel name and confirm.
- 3.Select a zone and confirm. The new channel will be saved to the selected zone.

6.2.Delete Channel

Allows to delete current channel.

- 1.Select "Delete Chan", the radio will remind " Delete? "
- 2.Press confirm key, the current channel will be deleted.

Note: After delete one channel, the radio will move to next channel.

6.3.Channel Type

A-Analog : Set up the current channel to analog channel.

D-Digital : Set up the current to digital channel

A+D TX A: Mixed analog, allow receive analog and digital signal, TX is analog.

D+A TX D: Mixed digital, allow receive analog and digital signal, TX is digital.

6.4.TX Power

Set up the TX power levels for current channel.

6.5.Offset

Press [UP]/ [DOWN] key to adjust offset frequency. When offset is activated when transmit the TX frequency will be offsetted.

6.6.Band Width

Only narrow band 12.5KHz for digital channel.

6.7.RX Frequency

Input the RX frequency by keypad, press the Menu key to save.

6.8.TX Frequency

Input the TX frequency by keypad, press the Menu key to save.

6.9.Talk Around

Allows a Repeater Channel to be used as Simplex. In Repeater Channel the TX and RX frequencies are different. So when select as Talk Around on TX Frequency = RX frequency.

Therefore repeaters can directly communicate without a repeater, the RX CTCSS/ DCS decode as TX CTCSS/ DCS encode.

6.10.Name

Allow to reset the channel name, this function is only valid in channel mode.

6.11.TX Allow

Always: Always allow transmit

Channel Free: Allow transmit when the channel is free

Different CC: Allow transmit when receive matched signal but different color code.

Same CC: Allow transmit when receive matched signal and same color code.

6.12.TX Prohibit

TX ON: Will allow transmit on the current channel.

TX OFF: Will not allow transmit on the current channel.

6.13.Radio ID

In Digital channel, it will show the DMR ID which must be programmed in the PC software – Digital – DMR ID list- DMR ID. Allows to edit and select an ID for the channel, each channel allows one ID.

In Analog channel, it will show the radio self-ID which is programmed in PC software – Analog –Analog Address Book – Number.

6.14.Color Code

The digital channel should have the same color code for communication as defined by the repeater to be used; which can be programmed in the PC software or defined in the Menu.

6.15.Time Slot

Set up Slot 1 or Slot 2 for the current channel.

6.16.Digi Encrypt

With the digital encryption, the communication will be confidential. A total of 32 digital encryptions is offered, and it can be programmed in the PC software or defined in the Menu.

6.17.Enncrypt Type

There are 2 levels of Encryption for voice.

Normal type:

Enhance Type

6.18.RX Group List

It will allow to edit the RX Group List and assign a new RX Group List to the channel. Select Cur List: Select the current RX Group List. Add Group: Add a TG to the current RX Group List. Remove Group: Remove a TG from the current RX Group List.

6.19.Work Alone

In the PC software – Public – Alarm settings – Work Alone, you have to set up the response time, warn time and response method initially.

Turn on the work alone function for the current channel. When the radios predetermined time has been reached for the alone working time, the radio will beep a sound and show “Work Alone Predict”. The user has to confirm by pushing the programmed work alone key to confirm continuing work alone, otherwise, the radio will start its alarm and send the alarm on the channel when reaching its preset response time

6.20. SMS Forbid

Forbid to receive message when this function turned on. User still able to send out the message.

6.21.Data ACK Forbid

Data feedback forbid such as received the message with reply.

6.22.DMR Mode

Simplex: Enable to communicate by repeater frequencies directly with another radio with opposite TX/ RX frequencies.

Repeater: Enable talk with other radio by repeat frequency through repeaters.

Double Slot: When TX/RX frequency is same, turn on this function to communicate by the slot set in simplex mode.

Note: If in the DMR Double Slot mode is not chosen, the radio will work on Slot in repeat mode. If choose Double Slot, it is necessary to Double choose a slot by time slot setting.

6.23.Tx Interrupt

This feature allows the supervisor to start the transmission while another person is talking. It allows supervisor to override the ongoing transmission brings other radios hear what the supervisor is saying, the radio that is transmitting at the time of this override will not hear the supervisor until he release keys his radio and then he will be able to hear the rest of the conversation.

7.Channel Setting (Available in Analog Channel only)

When the channel type is analog, it will automatically hide the digital menu, the below listed menus are for analog channel only, unlisted menus are the same as the digital channel, please refer to Chan Set (Digital Channel).

7.1. New Channel

Radio allows to create a new channel and save current set up to the new channel.

1.Select "New Chan", then input new channel number and confirm.

2.Input channel name and confirm.

3.Select a zone and confirm. The new channel will be saved to the selected zone

7.2. Delete Channel

7.2.Delete Channel

Allows to delete current channel.

1.Select "Delete Chan", the radio will remind " Delete? "

2.Press confirm key, the current channel will be deleted.

Note: After delete one channel, the radio will move to next channel.

7.3. Channel type

A-Analog : Set up the current channel to analog channel.

D-Digital : Set up the current to digital channel

A+D TX A: Mixed analog, allow receive analog and digital signal, TX is analog.

D+A TX D: Mixed digital, allow receive analog and digital signal, TX is digital.

7.4.TCDT

7.5.RCDT

7.6.RTCDT

Set up the CTCSS/DCS code for both TX and RX CTCSS code: 62.5Hz~254.1Hz, a total of 51 groups DCS code: 000N~7771, a total of 1024 groups.

7.7.Optional Signal

Allows the setup of DTMF/5TONE/2TONE encode and decode for the Analog channels.

7.8.TX Power

Set up the TX power levels for current channel.

7.9.Offset

Press [UP]/ [DOWN] key to adjust transmission offset frequency. When "offset" is activated when transmit the TX frequency will be offsetted.

7.10.Squelch mode

When the analog channel is set up for both CTCSS/DCS decoding and optional signaling, you can set up the RX condition in this menu.

SQ: You can hear the call once the channel receive matched carrier. CDT: You can hear the call when receive matched CTCSS/DCS signal. TONE: You can hear the call when

receives a matched signaling.

C&T: You can hear the call when receives a matched CTCSS/DCS and matched signaling.

C|T: You can hear the call when receives a matched CTCSS/DCS or and matched signaling.

7.11. Band Width

Choose wide band or narrow band for the analog channel.

7.12. Reverse

When this function is enabled, the RX frequency, TX frequency and CTCSS/DCS encode/decode will be reversed.

7.13. Compander

Enable this function to reduce background noise and enhance audio clarity, especially in long range communication.

7.14. Scrambler

An analog voice inversion scrambler can be equipped. This special audio process can offer a more confidential communication.

Other radios at same frequency will receive only disordered noises.

The radio has 11 groups standard Scrambler and 1 group self-defined Scrambler. It works with the CML128 and CML138.

7.15. RX Frequency

Input the RX frequency by keypad, press the Menu key to save.

7.16. TX Frequency

Input the TX frequency by keypad, press the Menu key to save.

7.17. Talk Around

Allows a Repeater Channel to be used as Simplex. In Repeater Channel the TX and RX frequencies are different. So when select as Talk Around on TX Frequency = RX frequency.

Therefore repeaters can directly communicate without a repeater, the RX CTCSS/DCS decode as TX CTCSS/DCS encode.

7.18. Name

Allow to reset the channel name, this function is only valid in channel mode.

7.19. Busy Lock

Off: Always allows transmission

Different CDT: Will not allow transmit when receiving matched carrier but unmatched CTCSS/DCS.

Channel Free: Will not allow transmit when receiving matched carrier.

7.20. TX Prohibit

TX ON: Will allow transmit on the current channel.

TX OFF: Will not allow transmit on the current channel.

7.21. OWN ID

When the analog channel set up with optional signal, you can check the radio ID number in this menu. The ID number should be set up in PC software – Analog –

Analog Address Book.

7.22.DTMF Enc

Set a DTMF ID as the default call ID for the current channel. Press the PTT key to transmit the selected DTMF ID. Edit the DTMF ID in Menu or with the PC programming software.

7.23-24. 2Tone Enc/Dec

Set a 2Tone as the default call ID for the current channel. Press the [PTT] key to transmit the selected 2Tone.

Edit the 2Tone in the PC programming software before it can be selected.

7.25. 5Tone Enc

Set a 5Tone as the default call ID for the current channel. Press the [PTT] key to transmit the selected 5Tone.

Edit the 5Tone in the PC programming software before it can be selected.

7.26. Work Alone

In the PC software – Public – Alarm settings – Work Alone, you have to set up the response time, warn time and response method initially.

Turn on the work alone function for the current channel. When the radios predetermined time has been reached for the alone working time, the radio will beep a sound and show “Work Alone Predict”. The user has to confirm by pushing the programmed work alone key to confirm continuing work alone, otherwise, the radio will start its alarm and send the alarm on the channel when reaching its preset response time

8.Device Information

Show the Radio ID, Radio name, model name, frequency range, firmware version and hardware version, radio data version, latest production date, picture version, language version, sct version.

8.1.Record

This function allows the recording of sounds around the radio like a tape recorder. But to use this function you need to program it with the programmable keys.

CPS → Optional setting → Key Function → Record

8.2.Record Switch

This function allows to record calls of both TX and RX communication.

Select on or off to turn on or off the recording.

The voice record is designed for security use purpose. Each call will be saved as a separated recording file with DMR ID and time details. The standard voice 4 hours record allows in digital channel only.

8.3.Record List

Select a record list to enter the Record file. Press on a Record file to see the Detailed Information. It allows different options.

1.Record Play, it will play one record at a time, you can turn the channel switch to choose another recording without return to previous menu.

2.Loop Playback, it will play all records in circle.

3.Record Send, it allows you choose a TG or private ID from TG list or manually, and transmit the record.

8.4.Record Delete

This function allows you delete all the recording files.

8.5.Recording Manually

In the PC software, Public – Optional Setting – Key function, program a key as Record.

- 1.Press the programmed Record key, and the radio will start the recording, and speak into the microphone.
- 2.Select Record Play, and the radio will play the record
- 3.Select Record Send, and the radio will display Contact list or Manual Dial.
- 4.Select Contact list to choose a contact, and press select to send the Record.
- 5.Select Manual Dial, input the DMR ID, switch group ID or private ID, press select to send the Record.

8.6.Digital Monitor

This function allow user can hear the voice of an incoming call with the below conditions.

DigiMoni Switch

Off: Turn off Digital Monitor

Single Slot: Monitor the current time slot.

Double Slot: Monitor time slot 1 and time slot 2

8.6.1. DigiMoni Cc

Any Cc: Monitor any color code

Same Cc: Monitor the same color code

8.6.2.DigiMoni Id

Any Id: Monitor any talk group

Same Id: Monitor the same Talk group

8.6.3.Slot Hold

Off: Turn off the slot hold

On: Turn on the slot hold

Recommend to turn on slot hold when monitor double slot time slot 1 and time slot 2, when the signal is disappear in one slot, instead of switching to the other slot at once, the radio will hold on some seconds and wait for the audio drop.

8.7.How to Respond and Save a call in Digital Monitor Mode

During Digital Monitor, when receive a call with unmatched ID, press [*] key, the screen will display "Monitor Response Setup Successfully ", press [PTT] key will response to the call.

Press [#] key, the radio will remind you choose a Zone, you can choose a zone and save the new channel to the Zone.

8.8.How to reset the radio

To reset the radio to factory default setting status.

1.Power off the radio.

2.Press and hold [P2] Key + Channel selector + Power key at the same time to power on the radio.

The radio will start up with a note on the display – "Are you sure you want to initialize radio?"

Press Confirm Key to proceed the reset, on the screen displays "Initialize Radio" Then radio will resume to factory default setting status.

3.After a re-start the radio will display the setting of time zone and the date and the

time. Use the channel switch to set the current year. Move to the month by pushing the channel switch. Set the month, and use the channel selector to move forward each step. Once done, press the Confirm key to save the date and time.

Please remember set up the time zone to avoid the date/time error.

Make sure the code-plugin is saved to PC before you do the update and reset.

Note: If radio is set as “prohibit reset” user cannot reset the radio as above operation.