

HYDX

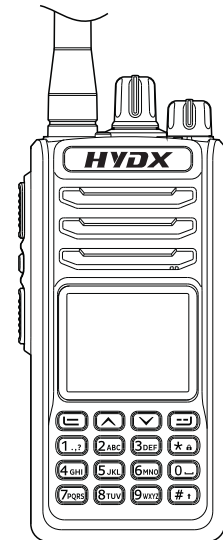
Fujian Juston Electronic Equipment Co.,Ltd.
www.odmradio.com

HYDX

D2000

Digital DMR and Analog
UHF/VHF Two-way Radio

User's Manual



DMR
DIGITAL MOBILE RADIO ASSOCIATION

Brief Introduction

Thank you for buying handheld two-way radio. We believe this simple, stable, beautiful and widely used in all industries and area of professional wireless communications equipment will give you a great surprise. This product is for professional commercial or amateur frequencies, it is necessary to apply for permission to the wireless administrator organization of the provinces and autonomous regions in there local country.

Please read this manual carefully in order to know how to properly operate the radio before use.

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Unpacking and Checking Equipment

Welcome to use handheld radios, before using we suggest you:

- Please check the packing box of this product and see if there are signs of damage.
- Please open the packing box carefully. We recommend that you identify the items listed in the following packing list. If you find that our product and its accessories in handling are lost or damaged during the shipment. Please immediately contact dealers.

Parts List

Item	Quantity
Radio	1
Rubber Antenna	1
Li-ion Battery Pack	1
Desktop Charger	1
Power Adapter	1
Belt Clip	1
Hand-Strap	1
User's Manual	1

Preparation

■ Using the Battery

The battery is not completely charged at the factory, please charge it before using.

To extend the battery life time, please power off the batteries when you don't use two way radio, and save battery in a cool (temperature less than 25°C) and dry place.

■ Precautions of Charging Equipment

1. Do not expose the charger to rain or snow.
2. Do not operate or disassemble the charger if it has received a sharp blow, or has been dropped or damaged in any way.
3. Never alter the AC cord or plug provided with the unit. If the plug will not fit the outlet, have the proper outlet installed by a qualified electrician. An improper condition can result in a risk of electric shock.
4. To avoid damaging the power cord or socket, pull the plug out of the socket with a hand plug. Do not pull the plug out by pulling the power cord.
5. To reduce the risk of damage to the cord or plug, pull the plug rather than the cord when disconnecting the charger from the AC receptacle.
6. Use of an attachment not recommended or sold may result in a risk of fire, electric shock, or personal injury.
7. Make sure the cord is located so it will not be stepped on, tripped over, or subjected to damage or stress.
8. An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in a risk of fire and/or electric shock. If an extension cord must be used, please make sure that:

Preparation

Extension line cord use the same pins.

Use 18AWG wires less than 30 meters in length and use 16AWG wires within 45 meters.

9. Do not replace charger's power cord. If the power cord damages, you must stop using charger immediately.

■ Charging the Battery

Please use the battery charger designated to charge battery. After purchase or extended storage (more than two months), the first time to charge battery cannot make battery reach its normal operating capacity. After repeating charge/discharge it two or three times, the operating capacity will increase to its normal capacity.

■ Please Charge the Radio According to Operation Steps as Follows:

1. Insert power adapter into power supply socket.
2. Insert output terminal of power adapter into DC Jack behind the charging kit, now the charging orange indicator lights about 2 seconds then goes out.
3. Insert the battery or radio equipped with battery into the charging kit.
4. Confirm the battery and charger kit terminal contact reliably, when charging indicator light turns into red and charging starts.
5. After completion of charge (charging time is about 5 hours), light turns to be green.

Preparation

■ Indicators Display As Following

Status	Indicator
Power Connected	Orange light is on about 2 seconds then goes out
No battery (Temperature end judges)	All go out
Charge Normally	Red light is on
The battery is fully charged	Green light is on
Fault(over temperature, battery short circuit or over discharge state)	Red light flashes

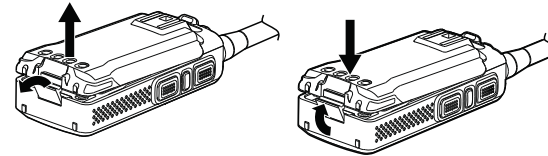
Note: Before charging, please turn off radio power equipped with battery. When charging, using radio will interfere with normal charge of battery and transceiver effect.

Preparation

■ Installing/Removing the Battery

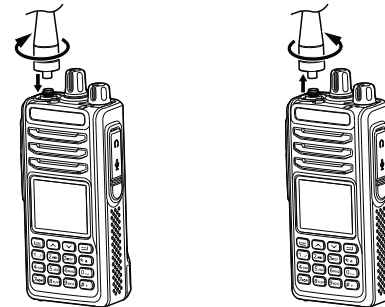
Insert the battery pack into the corresponding slots on the back of radio and push it. Then press the upper end of the battery until you hear a "click".

To remove the battery pack, make sure the radio off, and then unlatch the buckle, the battery from emerge from the radio, and then remove the battery.



■ Installing/Removing the Antenna

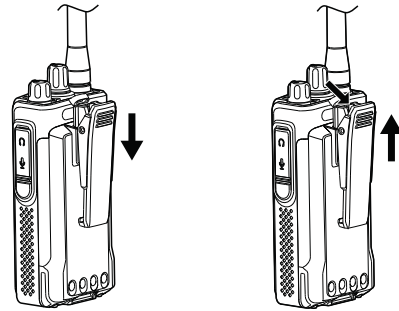
Align the threaded of the antenna with the radio's antenna connector. Turn the antenna clockwise to fasten it. To remove the antenna, please turn the antenna counter-clockwise until you can remove it.



Preparation

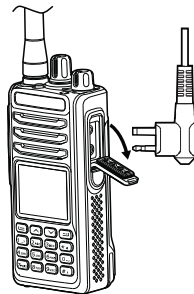
■ Installing/Removing the Belt Clip

If necessary, the randomly configured belt clip can be inserted into the slot on the back of the battery pack for easy carrying.
To remove the belt clip, simply press the buckle out and push it up.

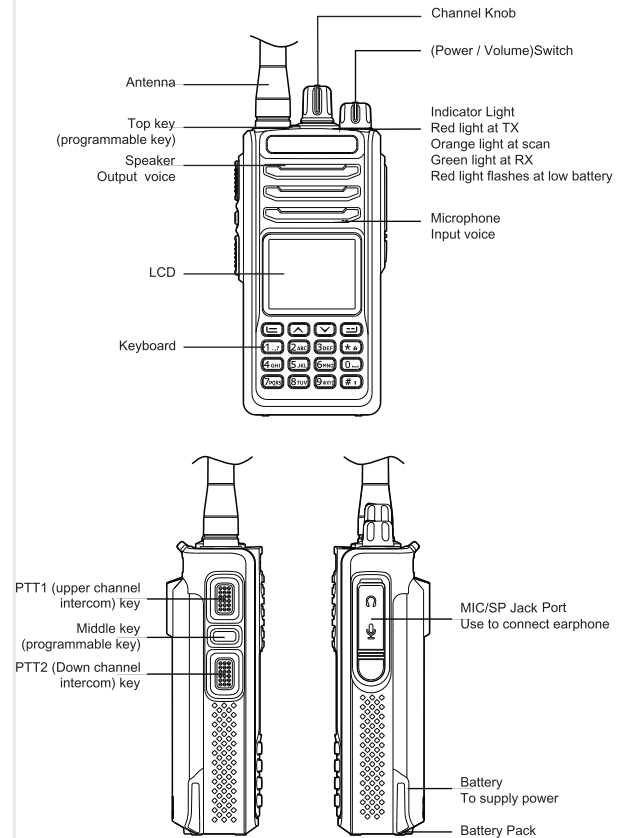


■ Installing Speaker/Microphone

Lift the headphone cover and insert the speaker/microphone headset directly into the speaker/microphone Jack.



Getting Familiar




Getting Familiar

Basic Use of Keyboard:


 Menu key, confirm key, A key.

 Up key, B key.

 Down key, C key.

 Return key, delete key, D key, long press to switch VFO/channel mode.

 Short press to switch main channel, long press to lock keyboard.

 Short press to enter the dial box, long press to enter the scan, and when the standby lights out then short press to display the time.

Note: Under the emergency situation, press the programmable top button can open the emergency call function.


Getting Familiar

Primary Menu	Secondary Menu	Illustration	Remark
Contact	Contact	Contact list, programming software edit, new contact add or call record contact add, store up to 100000 group contacts and ten thousand digital contacts list.	Only digital channel
	New Contact	Manually create and save a new contact, enter a number, alias, tone, if the current input number same as the contact list, directly cover the old contact information.	
	Manual dialing	Enter the ID number of the other side (up to 8 digits, the full page ID is fixed at 167772 15), then press confirm key, call prompt, inter-phone detection, remote monitor, inter-phone activation, radio remote death.	
message	Inbox	Receive list: received the most recent SMS, maximum storage 16, if continue to receive, loop overwrite storage.	
		Delete all: delete all received message.	

Getting Familiar

Primary Menu	Secondary Menu	Illustration	Remark
Message	Write a text	One message with maximum of 144 characters or 72 Chinese characters, enter by using the "#" key to switch input type: abc/ABC/123/py (pinyin). Enter message and press the confirmation key to do related operation.	Only Digital channel
	Outbox	Save newest sent message, can be store up to 16 pieces sent messages.	
	Draft box	Can store up to 16 pieces messages.	
	Preset message	Each message can input 144 characters or 72 Chinese characters.	
Call Record	Dialed call	List of dialed calls: up to 32 latest dialed call records can be stored, which can be accessed or stored to contacts through operations. Delete all: clear list of all records.	Only Digital channel

Getting Familiar

Primary Menu	Secondary Menu	Illustration	Remark
Call Record	Received call	List of incoming calls: up to 32 pcs, which can be accessed or stored to a contact by operation. Delete all: clear list of all records.	Only Digital channel
	Missed call	List of incoming calls: up to 32 pieces, which can be accessed or stored to a contact by operation. Delete all: clear list of all records.	
Setting	Inter-phone setting	CTCSS/DCS CTCSS Deviation Decode: Directing setting for decoding and coding. CTCSS Decode: Only change decode and keep code. CTCSS Code: Only change code and keep decode. Switch CTCSS and DCS by pressing "*" key. Under the DCS mode, press "#" to switch directions or manual input non-standard DCS, then press  to confirm.	


Getting Familiar

Primary Menu	Secondary Menu	Illustration		Remark
Setting	Inter-phone setting	Squelch	Level 0-9, Factory default level 5.	
		TX power	High/low optional. H: UHF 4W /VHF 4W L :1W .	
		Talk around	On/Off, working in present channel.	
		Wide/narrow band	Wide/narrow band switch in analog mode. W: 25KHZ/ N: 12.5KHZ.	Only analog channel
		Busy Channel Lockout	Off/Carrier/(CTCSS/color code optional).	
		TOT	OFF/15s/.../495s, close to the launch time limit of 10 seconds early warning, time to stop TX.	
		VOX	Off/on.	
	Dual standby	Dual band dual standby/ dual band single standby Dual band dual standby: the primary channel and the secondary channel alternate		

Getting Familiar

Primary Menu	Secondary Menu	Illustration		Remark
Setting	Inter-phone setting	Dual standby	scan, when receiving signal, will work in present channel, press PTT 1 or PTT 2 to answer the call, after 4 seconds return to the original main channel. Dual band single standby: the upper and lower channel by keyboard "*" key or press PTT 1 and PTT 2 to switch. Machine receive and transmit work only on primary channel.	
		Digital Encryption	On/Off ,It works with two communication parties match the same encryption.	Only Digital channel
		Power Save	Off/on, Ratio 1: 4.	In dual band dual standby mode power saving is not effective even if it is turned on
		Warning tone	Full tone/call permission/ key tone optional.	
		Back-light	Keep/5 seconds/10 seconds/15 seconds optional.	

Getting Familiar

Primary Menu	Secondary Menu	Illustration		Remark
Setting	Inter-phone setting	Keypad lock	Manual/5 second/10 second /15 second optional.	
			Long press "*" for 2 seconds to lock, press  and "*" to unlock.	
		Indicator	Off/on,When turned off, the indicator (emitting, receiving, scanning etc.) does not work.	
		Power on password	Enter boot password, boot password (close/boot)/new password (modify password, maximum 6 digits).	
		Mode	Serial number (channel serial number)/name/frequency (display RX frequency).	
		Boot screen	Picture (upload customized bmp format picture at size 128*64)/Preset character.	
		Language Optional	English/Chinese optional, Including menu, call alert, call records etc.	



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Getting Familiar

Primary Menu	Secondary Menu	Illustration		Remark
Setting	Radio Information	Local Number	Eight bits self-number, maximum 16776415.	Only Digital channel
		Equipment Information	Model information, serial number, CPS version, hardware version, firmware version, DSP version, programming time.	
	Radio Configuration	RX Frequency	Manual keyboard to input frequency value.	
		TX Frequency	Manual keyboard to input frequency value.	
		Channel Name	Manual keyboard to input name, support Chinese and English.	
		Color Code	Color code 0-15 selectable.	Only digital channel, analog channel can't be set
		Time Slots	Time slot 1or 2 selectable.	
		Deviation	000.00000~384.00000 MHz	Only VFO motion suitable
		Direction	Off/Plus/Minus.	
		Frequency Step	2.5k/5.0k/6.25k/10k/12.5k/20k/25k/30k/50k step can be select.	

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Getting Familiar

Primary Menu	Secondary Menu	Illustration		Remark
Setting	Radio Configuration	Channel Type	Analog mode  /digital mode  can be select.	Only VFO motion suitable
	Keypad Programmable	Short press top key	Functions programmable : 1.no effect/other 2.Alert on/off 3.Emergency on 4.Emergency off 5.High/low Power 6.Monitor(support analog, digital can monitor different ID number) 7.Noise channel temporary deletion 8.Repeater/talk around 9.Scan on/off 10.Encryption on/off 11.VOX on/off 12.Zones switchable 13.Battery power indicator 14.Work alone on/off 15.Exit phone 16.FM radio 17.Record	
		Long press top key		
		Short press middle key		
		Long press middle key		
		Short press PTT2 key		
Long press PTT2 key				

Getting Familiar

Primary Menu	Secondary Menu	Illustration		Remark																												
Zone	Zone Name	Area list, can be support up to 250 zones(each zone most can be set 16 channels).		Can be add digital channel and analog channel																												
Scan	Switch	On/off, Only when channel the scan list can turn on the scanning function, scanning switch also can through the top key or middle key set as "scan on/off" to turn on/off, or long press "#" key to turn on/off.																														
	Scanning list	Display the current scanning list, display only.																														
<p>Note: Top/MID/PTT2 are programmable. There are some several functions that can be defined:</p> <table border="0"> <tr> <td>1.No function</td> <td>2.All alert on/off</td> </tr> <tr> <td>3.Emergency on</td> <td>4.Emergency off</td> </tr> <tr> <td>5.High/low Power switch</td> <td></td> </tr> <tr> <td>6.Monitor (accept analog, digital can monitoring different ID number)</td> <td></td> </tr> <tr> <td>7.Noise channel temporary deletion</td> <td></td> </tr> <tr> <td>8.One touch to access 1</td> <td>9. One touch to access 2</td> </tr> <tr> <td>10. One touch to access 3</td> <td>11. One touch to access 4</td> </tr> <tr> <td>12. One touch to access 5</td> <td>13. One touch to access 6</td> </tr> <tr> <td>14.Repeater/talk around</td> <td>15.scan on/off</td> </tr> <tr> <td>16.Encryption on/off</td> <td>17.VOX on/off</td> </tr> <tr> <td>18.Zone switchable</td> <td>19.Battery power indicator</td> </tr> <tr> <td>20.Alone work on/off</td> <td>21.Exit phone</td> </tr> <tr> <td>22.FM Radio</td> <td>23.Record</td> </tr> <tr> <td>24.PTT2 key</td> <td></td> </tr> </table>					1.No function	2.All alert on/off	3.Emergency on	4.Emergency off	5.High/low Power switch		6.Monitor (accept analog, digital can monitoring different ID number)		7.Noise channel temporary deletion		8.One touch to access 1	9. One touch to access 2	10. One touch to access 3	11. One touch to access 4	12. One touch to access 5	13. One touch to access 6	14.Repeater/talk around	15.scan on/off	16.Encryption on/off	17.VOX on/off	18.Zone switchable	19.Battery power indicator	20.Alone work on/off	21.Exit phone	22.FM Radio	23.Record	24.PTT2 key	
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Safety

Product safety and RF Exposure for handheld two way radio

Before using this two way radio, please read carefully the attach manual instruction in the random incidental for the safe use of the product and radio-frequency manual.



This radio is limited to professional applications that meet FCC radio-frequency energy requirements. Before using this two way radio, Please read the manual which contains important operating instructions for safe usage, RF Energy/ Awareness, control information and operational instructions for compliance with RF Energy Exposure limits in applicable national and international standards. Also read the operational instructions for safe use.

Note:

U.S users should confirm the current status of 47 CFR Part 90.203(e) of the FCC's rules governing before utilizing this on the band. It's a violation of the FCC Rules if this device operates on unauthorized frequencies. and that the operator cannot directly program the transmit frequencies using the normally accessible external controls.

Overview

■ Power On

Clockwise to turn on the radio volume knob, there will be a "KADA" sound, message sound and the screen will show up "Welcome", while the LED indicator lights up and becomes Green color if the battery icon full charged.

Note: If forbid the alert function, there will not any sound, when power on. Power off the radio and anticlockwise with knob until a "KADA" sound.

■ Adjust Volume


Clockwise the volume knob to increase volume or anticlockwise to decrease.


■ Dual Band Mode Switching


Short press **↵** key (also can press PTT1 and PTT 2) up and down switch the main channel, this time **MAZN** points to the main channel. Dual band working mode can be selected by menu [Operation: Menu-Setting-Radio Setting-Dual Standby (dual standby/single standby)].

Single standby: when radio works in the main channel, the secondary channel does not receive any signal;

Dual Standby: LCD display icon , main and secondary alternate scanned.

When scanned signal, LCD will display  and radio lock in the present channel.

When scanned signal is not from the main channel,  icon will display at the temporary, then press PTT to transmit.

After 3 seconds without any signal and  icon, press PTT to make **MAZN** at the main channel.

Overview

Note: Under dual standby and scanned main and secondary channel, DTMF, automatic scanning, alone worker and ARTS are not working.

■ Launch Calls

Private Call

This radio supports private call confirmed. Once active this function, radio will detect the presence of the target radio before launching.

- 1.Short press **#** key to enter the digital mode, input private call contact's ID number, press PTT can launch single call.
- 2.If the present channel set with private call ID, press PTT key to launch a private call to the present contact ID.
- 3.Choose private call ID on the log to launch a private call.
- 4.On the contact menu's manual dialing options or side key set as the manual dialing function, entering manual dialing and input the call ID to launch a private call to the specific ID.
- 5.Select the private call contact in the dialed/received/missed number, press PTT key to launch a private call.
- 6.Can launch a private by programmable side key.

Group Call

- 1.If the present channel set with group call ID, press PTT key to launch a group call.
- 2.Choose group call ID on the log to launch a group calling.
- 3.In the dialed records/received/missed number select group call, press PTT key can launch a group call.
- 4.Long press number key (should assign the number as group call function) or programmable key (programmable key as group call), then press PTT key to launch group call.

Overview

All Call

- 1.If the present channel set with all call ID, press PTT key to launch an all call.
- 2.Choose all call ID on the log to launch an all call.
- 3.In the dialed/received/missed number select all call ID, then press PTT key can launch an all call.

■ Launch and Receive Calls

In the digital mode, received a private call and display a private call. Within hanging time of private call, press PTT key can respond the current private call. Beyond the pending time is record as missed call. Received the group call, displays group call, within hanging time of group call, press PTT key can respond the current group call, beyond the pending time is record as missed call. Received the all call and display all call, the all call does not have hand up time, so can't respond the all call.

Note: If radio is programmed with channel frequency indication tone, press PTT to transmit, receiver will hear s short alert tone.

■ Contacts

Check contact list, new contact, manual dialing and related functions on the contact (maximum store 100,000 digital contacts).

Menu Operation

1. Group Call Type

When selected the directory member type as group call, group caller can view group call ID or sent message.

2. Private Call Type

When the selected contact member type as private call, to the private caller contact can view contacts, shortcut configuration, delete, editing name and number, send call prompt, the detection, the remote monitoring, the activation or remote killing operation.

- **Call prompt:** send a call prompt to assigned single call contact, requesting the other reply when communicating. The interface will display call prompt and prompting bell when the other receive the call prompt.

- **Radio detection:** radio detection allows user to determine whether the radio is in a state of activity in the system without any instructions to the radio user. If received the respond, the successful radio interface shows that the radio detection is successful. If the respond is not received in a certain time, there is a failure prompt and the interface shows radio detection failed.

- **Remote monitor:** send the remote monitor request, if received the remote monitor confirmation, it has successfully entered the reception interface display.

If no receiving confirmation within certain time, will hear failure tone and the interface displays the remote monitor failed.

Only when the device's signaling system "remote monitor decode" is checked, can be allowed to monitored voice activities.

- **Radio activated:** This function can activated the dead device and make the target radio resume its normal working statue.

- **Radio kill:** Sending a radio kill command, once received, radio

Menu Operation

shows kill successfully and has a successful alert tone. If no reception within certain time, radio shows kill fail with alert tone When the signaling system receiving the radio configuration of device's kill decode is checked, can receive the radio's kill command. After being killed, the device disables all interfaces and only process the received telemetry command.

- **Edit:** modify single call contact's name or number. Press **[*n]** key to delete, press **[*#]** key to switch input method when edit name. The input range of ID is 1~16777214, name input no more than 16 characters.

- **Delete:** delete private call contact.

3. All Call Type

When selected contact type as all call, can view all call ID: 16777215.

4. New Contact

This radio only allowed to add single call type's contact. After input number(1~16777214), press **[*#]** key when edit name, **[#]** key switch input method, the maximum can input sixteen characters. Name input is completed, press the selected tone then press confirmation to save. After successful preservation the interface notice: save succeed. New contact can be found in the contact list.

5. Manual Dialing



Manual dialing is used for convenient calls without a private call list in contact log, input ID then press PTT key can launch a private call, or press confirmation key can enter call prompt, radio detection, remote monitor, radio activation and the operation selection of radio kill.

Note: Short press **[*#]** key in the main interface can quickly enter manual dialing box.




Menu Operation

■ Message

1. Inbox

The inbox can store up to 16 received messages, which display on the top of the inbox menu(*/*), the front number is selected messages, and the number in back is the total number of messages of the inbox. Enter the pickup list, don't read message indicates , read messages indicated . Inbox messages have the reply, forward, delete options can operate. Delete all will delete all messages, it can save the trouble to delete message one by one.

2. Write Message

You can create a new message and send it to target user. When editing the message press  key can switch input method, press  key to delete, and the direction of up and down key can switch cursor position. Under the pinyin or letter modes, 1 key as punctuation key,  key as space key. Messages editing can be up to 140 characters. The input number can be selected by the single call ID to send or select a single call or group call number from the communication contact list. Successful sending has ring tone prompt and displays sent successfully. Sent failure also has ring tone and displays sent failure.

Note: After save the editing messages, it will be saved in the draft box, and you can return to the draft box to check the contents.

3. Outbox

You can enter the outbox to check the content of sent message, and you can store up to 16 messages. Text message can be resent, forward, edited and deleted. Delete all will delete all messages, it can save the trouble to delete message one by one.

Menu Operation

4. Draft Box

You can enter the draft box to check the content of message, and you can store up to 16 messages. Text message can be resent, forward, edited and deleted. Delete all will delete all messages, it can save the trouble to delete message one by one.

5. Preset Message

Store up to 50 present preset messages by programming software, each message can input 144 characters. Present messages can be temporarily edited to send or sent directly.

Note: 1. Prefabricated messages can be allocated to one touch function call, and then sent prefabricated message quickly through programming keys.

2. After the default message is saved, it will be saved in the draft box, and you can return to the draft box to check the contents.

■ Call Records

1. Dialed Call

Radio record maximum 32 pieces dialed call. When the number is full, the earliest record will be deleted automatically when there is a new record. If the dialed number is an unknown contact, the dialed number can be saved, viewed or deleted in the contact list. Delete all will delete all dialed call records, it can save the trouble to delete message one by one.

2. Received Call

Radio record maximum 32 pieces received call. When the number is full, the earliest record will be deleted automatically when there is a new