

# RP6500 User's Manual

## FM Portable Radio

We are very grateful for your purchasing RELM two-way radios produced by RELM Wireless Corporation.

RELM two-way radio always incorporates the latest technology. The quality and function of the RELM two-way radio can meet your demands for reliable communication.

### Notice to the User:

- Please read this instruction manual before operating this radio.
- It's prohibited to use the radio or charge it at any area with a potentially explosive atmosphere (where the air contains gas, dust and smog, etc.), such as while taking on fuel, or while parking at a gasoline service station; or any area where radio communication is prohibited (such as a hospital or a airport.)
- It's prohibited to operate the radio without permission at the areas where the government laws prohibit radio communication.
- Please don't expose the radio to direct sunlight for a long time; don't place the radio near any heating devices, either.
- Please don't put the radio in extremely dusty, moist or dabbling places; don't place it on any unstable surfaces, either.
- If you want to develop or remodify the radio
- Refer service to the well-trained professional technicians only and do not disassemble or assemble the radio.

# RP6500 User's Manual

---

## CONTENTS

Unpacking and checking

Supplied accessories

Preparation

Charging the battery

Installing/Removing the battery pack

Installing the antenna

Installing the optional speaker/microphone

Installing the belt clip

Radio Overview

Basic Operation

Programmable Button functions

VOX

Copy mode

Whole setting

Time-out Timer ( TOT )

Battery Saving

Low Power Warning

Channel Annunciation

CTCSS/ DCS

User's resolution

Busy Channel Lockout ( BCL )

Receiving squelch mode

DTMF signaling

2TONE signaling

5TONE signaling

Transmit beginning/ending signaling (PTT ID)

Problems and troubleshooting

Major Specifications

Status setting



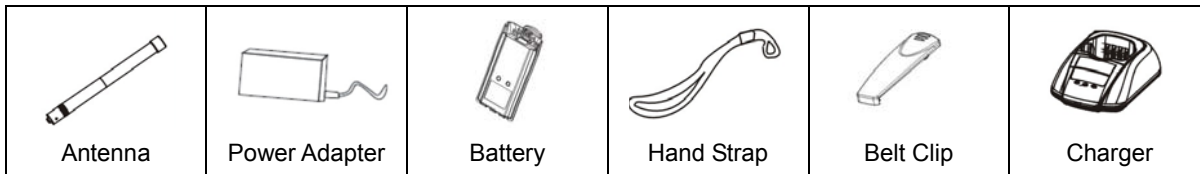
# RP6500 User's Manual

## Unpacking and checking

Unpack the transceiver carefully. We recommend that you identify the items listed in the following table before discarding the packing material. If any damage has occurred during shipment, please contact the dealer immediately.

## Supplied accessories

Item	Quantity
Antenna	1
Battery	1
Belt clip	1
Charger	1
Power adapter	1
Hand strap	1
User's Manual	1



## Preparation

### Charging the battery



Plug the power adapter into the proper AC wall outlet; and then the green indicator lights.



Insert the battery or transceiver into the charger slot, and make sure the transceiver has been turned off.

Make sure the battery is well connected with charger, then the indicator turns red or flashes, then the charger gets in the state of charging automatically.

When battery is fully charged the indicator turns green.

# RP6500 User's Manual

---

The performance will be at the best condition if you remove the battery when the green indicator is on. Then remove the power adaptor from the wall outlet.

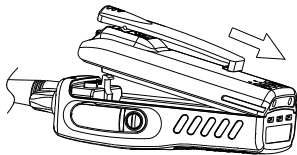
The charger will enter the protection mode when the yellow indicator flashes, which means the temperature or the circuit is abnormal. Do not charge the battery at this moment, just remove the battery and turn off the power of the charger.

## Notes:

- \* The battery is not fully charged in the factory. Before the initial use, please charge the new battery.
- \* When you charge the battery the first time or after long time storage (2 months), several times of charging is needed. Make sure the battery is charged at least once every three months.
- \* Do not charge the battery again if it is charged fully or not in the low-pressure warning mode, otherwise, it will have bad effects on its life and performance. Remove the battery from the charger after charging.
- \* There is a protection circuit in KB-36C battery, so the power will be cut off at too low power.

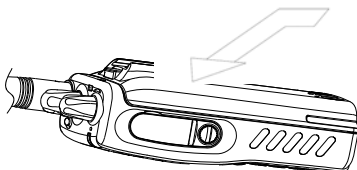
## Installing/Removing the battery pack

### To install the battery pack:



Match the 3 bulges of the battery pack with the corresponding slots at the rear bottom of the transceiver.

### To install the battery pack:

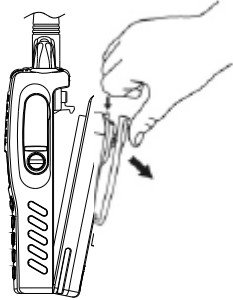


Then firmly press the battery pack downwards to lock it in place until a click is heard.

# RP6500 User's Manual

---

## To remove the battery pack:



To remove the battery pack, use your thumb to press the belt clip, one side of your index finger to press the release button and then pull the battery away from the radio

### Notes:

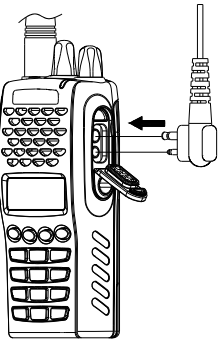
- \* Do not cause short-circuit or throw the battery to the fire.
- \* Do not disassemble the battery by yourself.

## Installing the antenna



Screw the antenna into the connector at the top of the transceiver by holding the Button of the antenna and turn it clockwise until secure.

## Installing the optional speaker/microphone

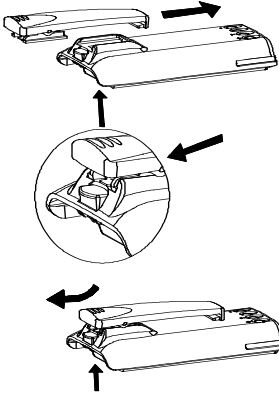


Insert the speaker/microphone plug into the jacks of the versatile connector, and fix it with the supplied snail screw.

# RP6500 User's Manual

---

## Installing the belt clip

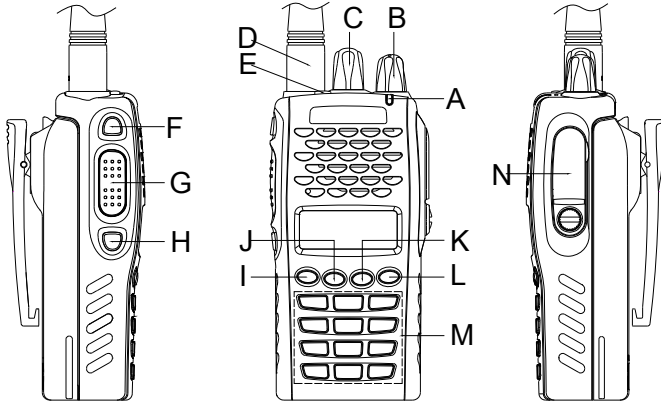


Match the grooves of the belt clip with those on the rear of the battery. Then press belt clip downwards to lock it in place. Push the card by inserting your nail or tool into the groove at the upper part of the clip to remove the belt clip.

# RP6500 User's Manual

## Radio Overview

The functions of the components are as follows:



### A. LED Indicator

Lights red while transmitting;  
Lights green while receiving.

### B. Power/Volume Switch ( Knob )

Turn clockwise till a click is heard to switch on the radio.

Turn counterclockwise till a click is heard to switch off the radio.

Rotate to adjust the volume after turning on the radio.

### C. Channel Selector

Rotate to select the channel 1-128.

### D. Antenna

### E. Top Button (programmable button)

It is recommended to be set as the emergency warning Button.

### F. Side button 1 (programmable button)

### G. PTT ( PUSH-TO-TALK ) :

To make a call, press and hold the PTT button, then speak into the microphone with normal voice. Release the PTT button to receive signals.

### H. Side button 2 (programmable button)

I. Button 

Return and delete button in the menu.

J. Button 

Select Button.

K. Button 

Select Button.

L. Button 

Enter and Confirm Button.

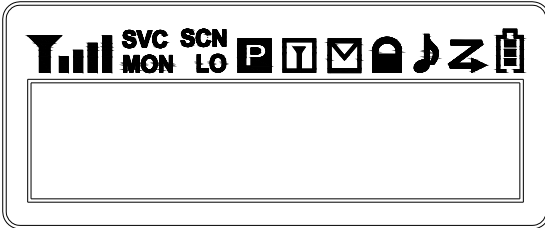
### M. Numeric keypad

### N. Microphone/speaker jacks

For connecting microphone/speaker.

# RP6500 User's Manual

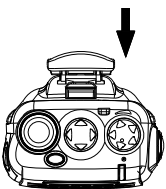
## Explanation for the screen



Icon	Description
	Signal intensity
	SVC
	Compandor
	Disturbance Frequency
	Busy channel lockout
	Scanning
	Key lockout
	Signal reminder is programmed
	Battery capacity, flashes when the battery power goes too low

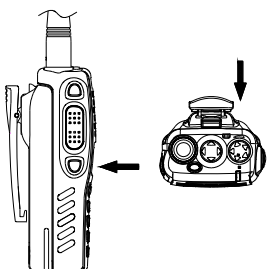
## Basic Operation

### 1. Switch On



Switch on the radio by turning the Power/Volume switch clockwise till a click is heard, then the radio will be in the state of stand by and you will hear a beep if the dealer has set it.

### 2. Adjust Capacity



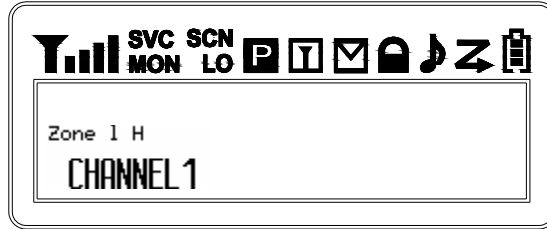
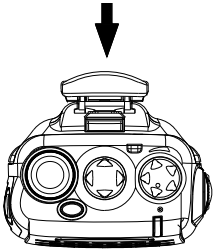
Press the button preset as canceling squelch to listen to the background noise and rotate the Power/Volume switch to adjust capacity.



# RP6500 User's Manual

## 3. Select a Channel

Rotate the channel selector to select channels. You will hear voice from the speaker while receiving proper signals.



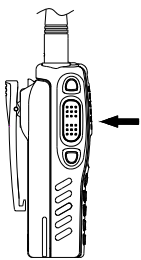
As shown in the above right figure:

Zone 1 is the zone of current channel (8 zones from 0 to 7).

H is the transmit power of the channel, H stands for high power, M for middle power while L for low power.

CHANNEL 1 is the current channel (128 zones from 1 to 128).

## 4. Make a Call



To make a call, press PTT, and speak in normal voice. Please keep your mouth 3~4 cm away from the microphone.





## 5. Receive a Call

Release the PTT button to receive a call.

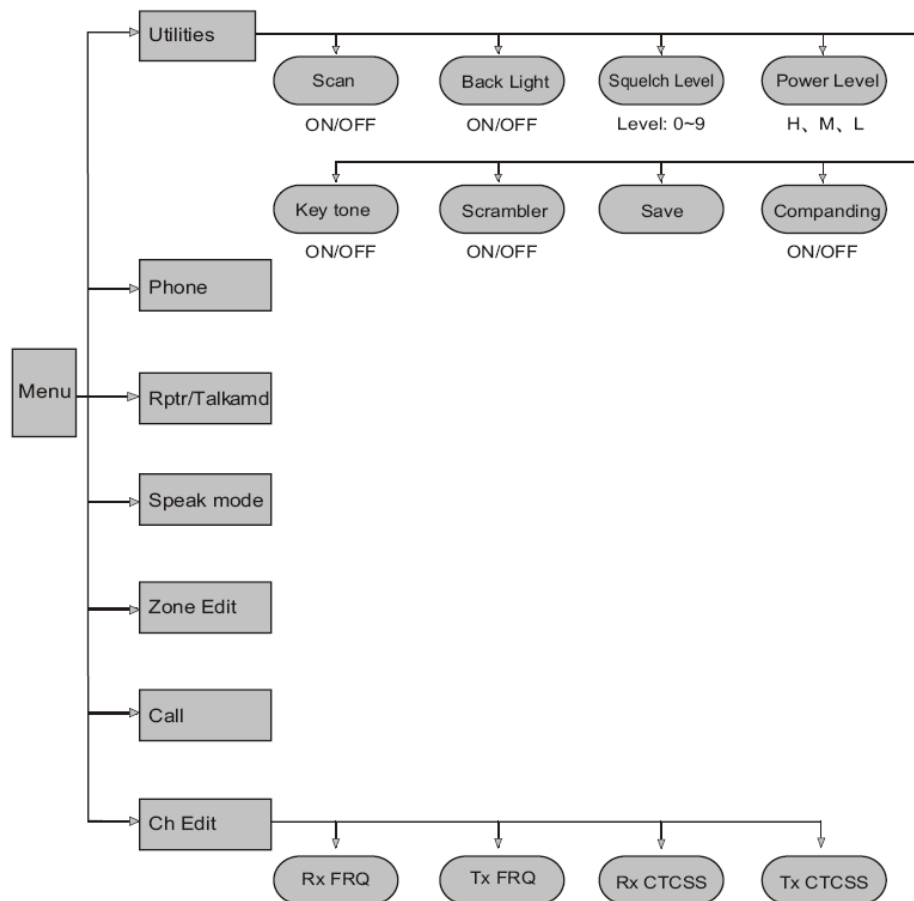
Your dealer can set CTCSS, DCS, 2 Tone signaling on you radio channels by PC software. If you select a channel that has been preset with the tone signaling, you will not hear any other calls except those from your own system.

# RP6500 User's Manual

## 6. Operation on menu:




press “” button to enter the menu or confirm any contents; press “” button to return to the previous menu or cancel the set. When entered the menu, select the sub-menu with the “channel selector”, “” “or” “”.

The menu is as follows:




The operations are as follows:

### Set scanning:

1. As shown: in  , press  , then  is shown;
2. Press  , then  is shown;
3. Press  , then enter selecting .









# RP6500 User's Manual

---









4. Select Scan On or Scan Off with  / , then press  to confirm it.

If can not enter that way, you have to set in PC communications;









## Set back light:

1. As shown: in , press ,  is shown.
2. Press  to enter select mode,
3. Press  / , and  is shown,
4. Press  to select On or Off,
5. Select On or Off with  / , press  to confirm.

## Set the squelch level:

1. As shown: in , press ,  is shown.
2. Press  to enter select mode,
3. Press  / , then  is shown,
4. Press  to select squelch level, e.g.,
5. Change the squelch level with  / , then press  to confirm.









## Set power level (high/middle/low):

1. As shown: in , press ,  is shown.
2. Press  to enter select mode,
3. Press  / , then  is shown,
4. Press  to select, e.g., ,
5. Change the power level with  / , then press  to confirm.









# RP6500 User's Manual

---









## Set Companding :

- 1 . As shown: in  , press  ,  is shown.
2. Press  to enter select mode,
3. Press  /  , and  is shown,
4. Press  to select ,
5. Select On or Off by  /  , press  to confirm.

## Set saving :

- 1 . As shown: in  , press  ,  is shown.
2. Press  to enter select mode,
3. Press  /  , and  is shown,
4. Press  to select ,
5. Chang the save percentage with  /  , press  to confirm.








## Set scrambler :

- 1 . As shown: in  , press  ,  is shown.
2. Press  to enter select mode,
3. Press  /  , and  is shown,
4. Press  to select, e.g., ,
5. Select On or Off by  /  , press  to confirm.







# RP6500 User's Manual

---







## Set key tone :

- 1 . As shown: in ,  is shown.
2. Press  to enter select mode,
3. Press  / , and  is shown,
4. Press  to select  or ,
5. Select On or Off with  / , press  to confirm.

## Set Rptr/Talkarnd :

- 1 . As shown: in  to enter select mode,
2. Press  / , and  is shown,
3. Press  to select the mode,
4. Select  or  with  / , press  to confirm.

## Set speak On mode :







- 1 . As shown: in  to enter select mode,
2. Press  / , and  is shown,
3. Press  to select the speak on mode,
4. Select with  / , press  to confirm.

## Set zone mode :







- 1 . As shown: in  to enter select mode,

# RP6500 User's Manual





---


2. Press  / , and **Zone Edit** is shown,
3. Press  to select the zone mode,
4. Select **Zone No** with  / , press  to confirm.

## Set call list :



1. As shown: in **CH 1**, press  to enter select mode,
2. Press  / , and **Call** is shown,
3. Press  to select the call list,
4. Select with  / , press PTT to transmit.

## Set Rx FRQ :




1. As shown: in **CH 1**, press  to enter select mode,
2. Press  / , and **Ch Edit** is shown,
3. Press  to select 

Ch alias CHANNEL 1
-----------------------
4. Press , 


Rx FRQ 401.660000
----------------------


 is shown, enter the set of Rx FRQ,
5. Set the Rx FRQ value with the keypad,
6. Press  to delete, and press  to confirm.

## Set Tx FRQ :



1. As shown: in **CH 1**, press  to enter select mode,
2. Press  / , and **Ch Edit** is shown,

# RP6500 User's Manual

3. Press  to select 

Ch alias
CHANNEL 1
4. Press , 




Tx FRQ
401.660000

 is shown, enter the set of Tx FRQ,
5. Set the Tx FRQ value with the keypad,
6. Press  to delete, and press  to confirm.


## Set Rx CTCSS/DCS :


1. As shown: in 

CH 1
------



, press  to enter select mode,
2. Press  / , and 

Ch Edit
---------

 is shown,
3. Press  to select 

Ch alias
CHANNEL 1
4. Press , is shown, 

Rx CTCSS
401.660000

 enter the set of Rx CTCSS/DCS FRQ,
5. Set the Rx FRQ value with the keypad,
6. Press  to delete, and press  to confirm.
7. 

*
---

 stands for the radix point, press 




#
---

 to convert among CTCSS, DCS and reverse DCS.

## Set Tx CTCSS/DCS :

1. As shown: in 

CH 1
------


, press  to enter select mode,
2. Press  / , and 

Ch Edit
---------


 is shown,

# RP6500 User's Manual



---

3. Press  to 

Ch alias
CHANNEL 1

 select
4. Press , is 

Tx CTCSS
XXXX

 shown, enter the set of Tx CTCSS/DCS FRQ,
5. Set the Tx FRQ value with the keypad,
6. Press  to delete, and press  to confirm.
7. 

*
---

 stands for the radix point, press 




#
---

 to convert among CTCSS、DCS and reverse DCS.





## Set contact list :

1. As shown: in 

CH 1
------

, press  to enter select mode,
2. Press  / , and 




contact list
--------------

 is shown,
3. Press  to select,
4. Select the address cable of the call to be made with  / ,
5. Check the alias or address code by turning the knob,
6. Key in the address code of the person you are calling,
7. Press  to transmit the current contact list.




## Set status:

1. As shown: in 

CH 1
------

, press  to enter select mode,
2. Press  / , and 

status
--------

 is shown,
3. Press  to select,
4. Select the needed status with  / ,



# RP6500 User's Manual

---

5 . Check the alias or address code of the status by turning the knob,

6. Press  to select the current status.

## Programmable Button functions

The dealer can program the 2 Side Buttons and 1 top Button with one of the following auxiliary functions.

None

Off (“do not set the functions”)

Scan

Lone working

Contact list

Power selector

Show or hide the channel alias

Busy Channel Lockout (BCL)

Key lock

Squelch level selector

Companding

Scrambler

Battery power

Zone

Monitoring

Cancel Squelch

Emergency Alert

Back light

Rptr/Talkarnd

Express select channel 1

Express select channel 2

Call 1, 2, 3 or 4

Channel lock

Adjust display contrast

Notes: programmable key can be set as short press or long press.

The following functions can be programmed by the dealer:

### None

Set of None


### Scan

Press the button set as Scan to start scanning. When carrier wave scan is enabled. While in scanning, the radio checks every channel (any channel in any zone) and stops on the channel on which a signal is detected until that signal disappears. If interval between signal disappearing and continuing scanning has been preset, the radio will

# RP6500 User's Manual

remain on that channel. Only when there are two channels added in the scan list and the scan function has been activated, the radio can start scanning.

It can be set as: short press: scan, long press : off.

1. Press the programmable key once to start scanning (it should be effective in the channel scan list).
2. Press  once to quit.

**Notes: there are 8 zones from 0 (default zone) to 7; and there can be as many as 128 channels in each zone. There are totally 16 scan lists; you can select any scan list. Every scan list can scan any channels in different zones (16 channels to the most).**

## Lone working

Press the button set as Lone working to start lone working. This mode is to ensure the safety of the user while using the transceiver separately.

It can be set as: short press: personal working, long press : off.





1. Press the programmable key once to start personal working;
2. Press once again to quit.

**Notes: the lone working is connected with the automotive checking in the programming software, and will be effective when both are set.**

## Contact list

Enter the Contact list quickly:

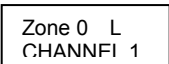
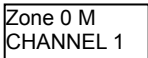
It can be set as: short press: contact list, long press : off.

1. Press the programmable key once to enter the contact list 
2. Press again to enter the content interface of the contact list,
3. Select the options in the contact list with  / 
4. Press PTT to transmit
5. Press  to quit.


## Power select

Rotate the “channel selector” to enter the “power level” menu quickly. There are high, middle and low levels.

It can be set as: short press: power select, long press : off.

1. Press the programmable key once,  will be shown,
2. Press it again,  will be shown,

# RP6500 User's Manual

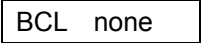
3. Press it a third time,  will be shown.



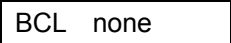
## Busy Channel Lockout (BCL)

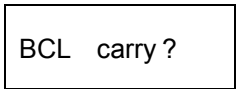
Busy Channel Lockout can prevent you from interfering other radios that using the same channel.

Press the PTT button, if the channel is busy, the radio with BCL function active will make warning sound and prohibit transmitting. To stop the warning sound, please release the PTT button and the radio returns to receiving mode.

It can be set as: short press : Busy Channel Lockout, long press : off.

1. Press the programmable key once, will be shown, 

2. Select the character you need with  / , e.g.: 





3. Press  to confirm. 

## Key lock

Press the key programmed as “key lock” for one second to lock/unlock the keys for the transceiver.

It can be set as: short press: key lock, long press : off.


1. Press the programmable key once, will be  shown,



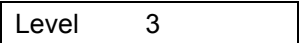

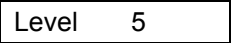
2. Press it again, will be shown. 

## Squelch level Selector

Enter the “Select squelch level” rapidly, 0~9 levels are available with the channel selector.

It can be set as: short press: Select squelch level, long press : off.

1. Press the programmable key once, will be shown, 

2. Select squelch level with  / , e.g.:   
  


3. Press  to confirm.

# RP6500 User's Manual


---

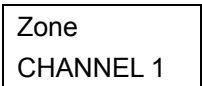
## Companding

Enter the Companding mode when press the key programmed as “Companding”,

It can be set as: short press: Companding, long press : off.

1. Press the programmable key once to open the Companding mode,

 will be shown,


2. Cancel the mode by pressing it again, will be  shown.

## Scrambler

Press the key programmed as “scrambler” to prevent any third party to hear you talking on the phone.

It can be set as: short press: scrambler, long press : off.

1. Press the programmable key once to open the scrambler mode,

 will be shown,

2. Cancel the mode by pressing it again,



will be shown.

## Battery volume checking

Display the battery power.

It can be set as: short press: battery power checking, long press : off.

1. Press the programmable key once: the battery power will be shown,
2. Press again: close the display.

# RP6500 User's Manual

---

## Monitoring

Press the programmed as “monitor trigger” to hold out CTCSS, DCS, 2Tone and DTMF signal, and you can hear the signals can not be heard in normal operation, press the key again to return to normal operation.

It can be set as: short press: monitor, long press : off.

1. Press the programmable key once to start monitoring, **Moni Moment ON** will be shown,
2. Press again: stop monitoring, **Moni Moment OFF** will be shown.

## Cancel squelch

Press the key, no matter what the signal or carrier wave is (including optional signal), squelch will be cancelled.

It can be set as: short press: cancel squelch, long press : off.

1. Press the programmable key once to start squelch constantly,
2. If you do not press it, the squelch will still work.

## Emergency Alert

If press the top key programmed as “Emergency Alert”, you can give the warning ring according to the programming software, or send your identity or background music to your companion or the system.

It can be set as: short press: emergency alert, long press : off.

1. Press the programmable key once to start alert,
2. Press it again to stop the alert.

## Back light

Turn on/off the back light.

It can be set as: short press: back light, long press : off.

1. Press and hold on this key, the back light is on,
2. Release it to recover the normal mode.

## Rptr/Talkarnd





When press the key programmed as “Rptr/Talkarnd”, the next transmission will be at the same frequency as at which it is received.

It can be set as: short press: Rptr/Talkarnd, long press : off.

1. Press the key once, **Rptr/Talkarnd** will be shown,

# RP6500 User's Manual

---

2. Press  to enter,
3. Press  /  to select the character you need: e.g.: Repeater Mode or Talkarnd mode,
4. Press  to confirm.

## Instantly select the channel

Shift to the channel you selected instantly, so that you can communicate at the channel you are used to.

It can be set as: short press: instantly select channel 1, long press : off.

1. Press the key once to instantaneously select the channel, e.g. : CHANN 15
2. Press again to return.

## Call 1, 2, 3, or 4

Press the side button programmed as Call 1, 2, 3, or 4 to transmit the specified code stored in the contact list. Release "Call" button, and speak to the microphone to call with the PTT button still pressed.

It can be set as: short press: Call 1, long press : off.

1. Press the key once to make a call (within the current channel), and will quit automatically after the call.




## Channel Annunciation

Select or delete the voice annunciation function.

## Adjust display contrast

You can adjust the display contrast as per your need.

It can be set as: short press: display contrast, long press : off.

1. Press the key once, Contrast will be shown,
2. Press  /  to select the character you need,
3. Press  to confirm.

## Manual programming

The dealer can open the manual programming rights of channel frequency set, CTCSS , DCS.

## Basic operations of programmable keys:

You can set the programmable keys with the "key set" in PC software, as follows:

It can be set as: short press: display channel frequency, channel alias and channel No., long press : off.

1. Press the key once, display the channel alias, e.g.:

CHANNEL 1

# RP6500 User's Manual

2. Press it again, the channel frequency will be shown, e.g.:



401.66500

3. Press it a third time , the channel alias will be shown, e.g.:

CH 1

It can be set as: short press: Zone, long press : off.

1. Press the key once, **Zone No** will be shown,

2. Select zone No. with  ,

3. Press  to confirm.

It can be set as: short press: channel lock, long press : off.

1. Press the key once to perform channel lock, then you can not choose the

channel, will be



shown.

2. Press it again to cancel channel lock, will be shown.



## VOX

VOX function enables you to use the radio without manual operations. This function can only be set by the dealer, and you have to be equipped with the specified earphones.

Before using VOX, you must set VOX gain level. Such setting enables the radio to identify the voice volume. If the microphone is too sensitive, the background noise will trigger the radio to transmit. If the microphone is not sensitive enough, it cannot receive your voice when you speak. Make sure to adjust VOX gain level to proper sensitivity.

# RP6500 User's Manual

---

## Programmable Functions (programmed with PC)

### Time-out Timer (TOT)

TOT timer:

Time-out timer can prevent any caller from occupying one certain channel for an extended period of the time.

The radio is set with a continuously transmitting limit. If the radio is continuously transmitting longer than the time preset by the dealer, the radio will stop transmitting and warning

TOT forbidden period:

A period in which the radio is forbidden to transmit after its overtime activity.

During the period, if the PTT key is pressed, there will be a warning tone, and transmitting is forbidden.

TOT pre-warning:

The pre-warning will sound before the TOT action.

After the sound of the warning, the timer will take action when the transmitting time has gone beyond the limit.

TOT reset:

The time delay from releasing the PTT key to the resetting of the timer is limited.

The countdown will go on if the time after releasing the PTT key is shorter than the reset time.

### Battery Saving

The dealer can set the type of this function by programming.

If the battery saving function is on, 10 seconds after the radio hasn't receive any signals or no operation is being acted, the radio enters battery saving mode. When a signal is received or any operation occurs, it exits battery saving mode automatically.

The types include: 1 : 1, 1 : 2, 1 : 4 and off.

The automatic battery saving function decreases the power consumption.

### Channel Annunciation

The dealer can turn on or turn off this function by programming.

While switching to another channel, you can hear the voice annunciation of the current channel number.

### CTCSS/ DCS

The dealer can set CTCSS/DCS tones on radio channels, which enable you to ignore (not hear) calls from other irrelevant parties who are using the same channel.

When you receive a signal that has a tone different from the one set on your radio, you will not hear the signal.

Likewise, signals that you transmit will only be received by parties whose CTCSS/DCS tones are the same as yours.

Note: Using a CTCSS/DCS channel doesn't mean your calls are private. If other parties' CTCSS/DCS tones are identical with yours, they can hear your calls.



# RP6500 User's Manual

---

## User resolution

### Busy Channel Lockout (BCL)

Busy Channel Lockout can prevent you from interfering other radios that using the same channel.

Press the PTT button when the channel is busy, the radio with BCL function active will make warning sound and prohibit transmitting. To stop the warning sound, please release the PTT button and the radio returns to receiving mode.

The dealer may provide the following two lock mode:

Carrier wave: it will be locked if there is any Carrier wave;

Carrier wave+ CTCSS/DCS : transmitting is permitted if there are matched CTCSS/DCS in the channel.

### Receiving squelch mode

The dealer may set the condition under which to turn on the speakers:

1. CTCSS/DCS and audio squelch: only when the CTCSS/DCS and optional signaling are patchable.
2. Audio squelch: once the optional signaling is matchable.
3. CTCSS/DCS squelch: when the CTCSS/DCS is matchable.
4. Carrier wave squelch: once there is any Carrier wave.
5. CTCSS/DCS and audio squelch: when the CTCSS/DCS is matchable, or when optional signaling are matchable.

### DTMF signaling

The dealer can set this function by programming.

There are 4 systems of which the parameters can be set, e.g.: group call ID No., \* and # sound, etc.

After set a DTMF code in the "code sequence", select DTMF system in the "DTMF code", then select the correspondent DTMF code cable in the "user's resolution" and transfer it with PTT. Set a DTMF code in the "decoding sequence", add the sequence into the decoding cable in "DTMF decoding", then select the correspondent decoding cable. The dealer may also set the "decoding replay".

### 2TONE signaling

The dealer can set this function by programming.

There are 4 systems of which the parameters can be set, e.g.: the duration of the first and the second tone, the duration of the long tone and audio spacing, etc. Select the audio frequency ( 3106.0 ~ 288.0hz step size 0.1hz ) in "encoding sequence", and whether the tones sent are long or two tones, select 2TONE system in "2TONE List", then select the correspondent 2TONE code cable in the "user's resolution" and transfer it with PTT. Select the audio frequency( 3106.0 ~ 288.0hz step size 0.1hz ) in "decoding sequence", and whether the tones received are long or two tones, then select the correspondent decoding cable in the "user's resolution". The dealer may also set the "decoding replay".

### 5TONE signaling

The dealer can activate or inactivate this function by programming.

5-Tone has 9 encoding formats: CCIR1, CCIR2, ZVEI1, ZVEI2, SVEI3, EEA, EIA, USER DEFINED 1, and USER DEFINED 2. The last tow formats are user defined.

1) 5-Tone Decoding

The decoding template is 5-tone decoding. If the decoding template matches the encoding template, decoding

# RP6500 User's Manual

---

succeeds.

When receiving proper 5-tone signaling, squelch will be activated according to the "RX Squelch Mode" defined by the user. You can receive the call and LED flashes orange.

After the radio decoding succeeds, the radio will work according to the decoding call response set by the dealer.

## 2) 5-Tone Encoding

Encoding template consists of at least one and at most three encoding sequences, and each decoding sequence can be set with 5-Tone, and DTMF. If it is set with 5-Tone, you need to program its content.

If the PTT ID on the channel you select has been set with 5-Tone, 5-Tone signaling will be transmitted when making a call.

Or transmit 5-Tone signal by pressing the Call 1/2/3/4 button,, which can be set by the dealer.

### **Transmit beginning/ending signaling (PTT ID)**

The identify signal of transmit beginning/ending are used to maintain or disconnect some repeaters or phone system.

"Transmit start" is used to connect routine repeaters and auxiliary facilities. If the ID transmitted is matchable with that of the repeaters, the repeaters and auxiliary facilities are available.

"Transmit over" is used to disconnect routine repeaters and auxiliary facilities. If the ID transmitted is matchable with that of the repeaters, the repeaters and auxiliary facilities are disconnected.

# RP6500 User's Manual

## Problems and troubleshooting

No.	Problems	Solution
1	No display after switched on.	A . Battery power may be insufficient. Recharge or replace the battery pack. B . The power switch may be broken, replace the switch. C . CPU may be broken, replace the IC. D . Regulator tube Q45 may be broken , replace the IC.
2	Phase locked loop unlocked ( with "tick, tick" )	A . Phase locked loop Crystal Oscillator X1 may be broken, replace it. B . Oscillator tube may be broken, replace it. C . Phase locked loop IC2 may be broken , replace the IC.
3	Cannot transmit.	A . The frequencies of both users are not the same, select the same frequency channel again. B . The CTCSS/DCS signaling of both users are not the same, set it with PC. C . Beyond the efficient communication range.
4	No signal	A . Make sure the antenna is well connected. B . Low sensibility, trimming "computer test mode". C . HF amplifier may be broken, replace it. D . The squelch level is too high, which makes the squelch unable to switch on, reset it by PC. E . Mixer tube Q19 may be broken, replace the tube. F . Frequency Modulation IC4 may be broken, replace the IC.
5	The transmitting red light is on, but no voice is heard	A . Power-amplifier tube no power output, replace the tube. B . Replace the microphone if it is broken. C . Operational Amplifier IC14 may be broken, replace it.
6	Receiving green light is on, but no voice is heard	A . Replace the speaker if it is broken. B . Audio power amplifier IC9 may be broken, replace it. C . Switch Tube Q48 may be broken, replace it. D . Operational Amplifier IC6 may be broken, replace it..
7	Abnormal programming	A . Make sure the wires are well connected. B Abnormal output of the RS-232 serial port of the computer, check the computer . C . Abnormal connection of MIC and SPK jack, check the jack.

# RP6500 User's Manual

## Specifications

### General specification

Model	RP6500	
Frequency	(1) (136 ~ 174) MHz	(2) (400 ~ 470) MHz
	(3) (450 ~ 520) MHz	(5) (350 ~ 400) MHz
Modulation	16KΦF3E/11KΦF3E	
Number of Channel	128	
Channel Spacing	25 kHz/12.5kHz	
MF	1 <sup>st</sup> MF : 51.65MHz    2 <sup>nd</sup> MF : 450kHz	
Working Voltage	7.5V cathode Grounding	
Working Temperature	-25~ +55C	
Antenna Impedance	50Ω	
Microphone Impedance	2.2kΩ	
Battery Standard	Model : KB-36C , li-ion battery    DC 7.4V , 1750mAh  time of use : 8 hours ( 5 : 5 : 90 period )	
Dimensions (W×H×D)	56X120X35mm	
Weight	413 ( with battery and antenna )	

# RP6500 User's Manual

---

## Status setting (by the dealer)

Model : \_\_\_\_\_ Serial No. : \_\_\_\_\_

a) Channel setting :

Channel No.	Receiving frequency	Transmitting frequency	CTCSS/DCS decoding	CTCSS/DCS encoding	Power	Band width	Scanning	BCL
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
---								
128								

b) Optional function :

2 . 1 Time-out timer ( TOT ) :  
15—600 s

2 . 2 Squelch level :  
1—9

2 . 3 Voice annunciation :  
On  Off

2 . 4 Battery saving :  
Off  1 : 1  1 : 2  1 : 4

# RP6500 User's Manual

---

## Top button

- None
- Voice reporting selector
- Rptr/Talkarnd
- Call1/2/3/4
- Lone working
- Emergency alert
- Cancel emergency alert
- Rewind
- Scanning
- High/low power shift
- Squelch level adjuster
- Monitoring open/Cancel
- Squelch open/Cancel
- Lock key
- Companding
- Scrambler
- Battery capacity
- 
- 
- 
- 
- 
- 
- 

## Side button1

- None
- Voice reporting selector
- Rptr/Talkarnd
- Call1/2/3/4
- Lone working
- 
- Rewind
- Scanning
- High/low power shift
- Squelch level adjuster
- Monitoring open/Cancel
- Squelch open/Cancel
- Lock key
- Companding
- Scrambler
- Battery capacity
- 
- 
- 
- 
- 
-

# RP6500 User's Manual

---

## Side button2

None

Voice reporting selector

Rptr/Talkarnd

Call1/2/3/4

Lone working

Rewind

Scanning

High/low power shift

Squelch level adjuster

Monitoring open/Cancel

Squelch open/Cancel

Lock key

Companding

Scrambler

Battery capacity