## **Instruction Manual**

## PT5200

#### FM Portable Radio

We are very grateful for your purchasing two-way radios produced by Kirisun Electronics (Shenzhen) Co., Ltd.

two-way radio always incorporates the latest technology. The quality and function of the 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.

Kirisun Electronics (Shenzhen) Co., Ltd

## **FCC INFORMATION**

Warning: Modifying, tampering and/or adjusting this or replacement of any transmitter component (crystal, semiconductor, etc.) in this unit could result in a violation of the rules. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## **FCC Warning:**

PT5200-02 is a occupational equipment. And it operate with a duty factor not exceeding 50%.

PT5200-02 cannot worn on the body.

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## ■ Unpacking and Checking the Equipment

Unpack the radio carefully. We recommend that you identify the items listed in the following table before discarding the packing material. If any items are missing or have been damaged during shipment, please contact the carrier or the dealer immediately.

## **Supplied Accessories**

Item	Quantity
Antenna	1
Hand Strap	1
Li-Polymer Battery	1
Charger	1
Power Adapter	1
Dust Cover	1
Instruction Manual	1

天线 Antenna 电源适配器 Power Adapter 充电座 Charger 对讲机吊带 Hand Strap 锂电池 Li-Polymer Battery

## **■** Preparation

## Charging the Battery 对电池充电

Plug the power adapter into the proper AC wall outlet; and insert the cable of the power adapter into the adapter socket on the charger; then the charger indicator lights yellow.

Insert the battery or the radio to be charged into the charger slot.

Make sure the battery is in good contact with the charger terminals. When the red indicator lights, the charger begins to charge the battery.

After charging for about 5 hours, the red indicator turns dim and the green indicator lights indicating the battery has been fully charged.

Leave the battery in that sate of green indicator for  $1\sim2$  hours before you remove it from the charger to achieve the best performance of the battery. Then you can disconnect the power adapter from the AC outlet.

#### **Notice:**

- \* The battery is not fully charged in the factory, and please charge the new battery when you use the radio for the first time.
- \* The radio is supplied with a KB-42A Li-Polymer battery manufactured by KIRISUN.
- \* When you charge the battery for the first time after purchasing or long storage, you should repeat charging it several times to achieve the normal battery capacity.
- \* Do not recharge the battery if it has been fully charged or the battery power doesn't become low, otherwise it might affect the battery life or performance. Remove the battery from the charger after charging.

\* The built-in protection circuit in the battery will cut off power when power appears low. If you charge it in the charger then, the red indicator won't light immediately. About 1~5 minutes later, the charger indicator will become normal.

## Installing/Removing the Battery Pack 安装/取下电池

## **Installing the Battery Pack**

Match the 2 bulges of the battery pack with the corresponding slots at the rear bottom of the radio.

## **Installing the Battery Pack**

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

#### **Removing the Battery Pack**

To remove the battery pack, push the latch upwards and then pull the battery away from the radio.

#### **Notice:**

- \* Do not short-circuit the battery terminals or dispose the battery in fire.
- \* Do not disassemble the battery casing.

## Installing the Antenna 安装天线

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

## ■ Radio Overview 熟悉本机

#### 1 LED Indicator

Lights red when transmitting; lights green when receiving.

Flashes orange when receiving the identical 5-Tone or 2-Tone signaling.

Flashes red when battery power appears low.

#### (2) Channel Selector

Rotate to select channel 1~16.

### 3 Power/Volume Knob

Turn clockwise 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.

#### **4** PTT (PUSH-TO-TALK) Button

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

**⑤ Side Button 1** (Programmable Button)

- **⑥ Side Button 2** (Programmable Button)
- **Top Button** (Programmable Button)

## **■** Basic Operations

#### Switch On the Radio: 开机

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. If channel annunciation has been set, the current channel number will be announced.

## Adjust Volume: 调节音量

Rotate the Power/Volume switch to adjust the volume with the monitor key pressed. Turn clockwise to increase the volume and counterclockwise to decrease the volume.

#### Select a Channel: 频道选择

Rotate the channel selector to select your desired channel. If channel annunciation has been set, the current channel number will sound. When it receives signals, the speaker will sound.

## Make a Call: 对外讲话

To make a call, press the PTT, and speak in normal voice and please keep your mouth  $3\sim 8$  cm away from the microphone to achieve the best voice quality.

## Receive a Call: 接收对方讲话

Release the PTT button and adjust the volume at the proper position to receive calls.

## **■** Programmable Button Function

The dealer can program the side button 1 and side button 2 with the following auxiliary functions: Null (No Function)

CALL<sub>1</sub>

CALL 2

Alarm

Cancel Alarm

Individual Working

Monitor

**Instantaneously Monitor** 

Temporarily Cancel Noise Channel

Cancel Noise Channel

Check Squelch Level

Adjustable Squelch

Scan

Scrambler

Scrambler Backup

Cancel Squelch

Instantaneously Cancel Squelch

Talk Around

Power Check

Whisper

VOX

**Battery Power Indication** 

Temporary Activation of Channel Annunciation

**Activation of Channel Annunciation** 

Reverse Frequency

The dealer can program the following functions:

#### Null

No Function is programmed.

## CALL 1/CALL 2

Press the side button set as "Call 1" or "Call 2" to transmit the stored coding. Release Call 1 or Call 2 button and then press PTT to call others and speak to the microphone.

#### Alarm

When you press the top button set as "Alarm", the radio can sound alarm tone or transmit ID code or background tone to your partners or the system, both of which can be chosen in radio programming with the software.

#### **Cancel Alarm**

Press the top button set as "Alarm" to cancel alarm function.

## **Individual Working**

Press the side button set as "Individual Working" to enter individual working mode, which ensures the user's security when the radio is in individual working.

Notice: Individual Working is relevant with the auto checking mode in the programming software and activated only when the both functions have been set.

#### Monitor

Press the side button set as "Monitor" to turn off QT, DQT, 2-Tone and 5-Tone and to hear the signals that cannot be heard when in normal work. Press the Monitor key again to return to normal work.

#### **Instantaneously Monitor**

Press the side button set as "Instantaneously Monitor" to turn off QT, DQT, 2-Tone and 5-Tone and release it to return to normal work.

### **Temporarily Cancel Noise Channel**

When the radio pauses on a certain channel during scanning, press the button set as "Instantaneously Cancel Noise Channel" to delete this channel from the scanning list temporarily.

#### **Cancel Noise Channel**

When the radio pauses on a certain channel during scanning, press the button set as "Cancel Noise Channel" to delete this channel from the scanning list permanently. The radio won't scan this channel again after turning on the radio or it exits scanning.

#### **Check Squelch Level**

Press and hold the button set as "Check Squelch Level" to hear the squelch level annunciation of the current channel.

#### Adjustable Squelch

Press the button set as "Adjustable Squelch" to change squelch level. Press once to increase one level (cycle of 9-0; when at level 0 a beep sounds and squelch is activated) and store the change.

#### Scan

- a) Press the button set as "Scan" to start scanning. When in scanning, the radio checks signals on each channel; it stops scanning and pauses on the channel on which signals are detected until the signals disappear. If a delay time has been set between the interval of signal disappearing and scanning restarting, the radio will keep staying on that channel if it receives any signals during the delay time.
- b) The working channel of the radio will revert to the following channels automatically when you press PTT button during scanning. The dealer can select one among the following six options.:
  - 1) Selected channel

When pressing PTT button, the radio will transmit from the first channel in the scanning list

2) Selected channel + currently working channel

When pressing PTT button during scanning, the radio will always transmit from the first channel in the scanning list. When pressing PTT button during the scanning pause, the radio will always transmit from the currently working channel

3) Priority channel

The radio will transmit from the priority channel in the scanning list when you press PTT button

4) Priority channel + currently working channel

When pressing PTT button during scanning, the radio will always transmit from the priority channel. When pressing PTT button during the scanning pause, the radio will

transmit from the currently working channel

#### 5) Last called

When pressing PTT button, the radio will transmit from the last channel that received a call.

#### 6) Last used

When pressing PTT button during the scanning, the radio will transmit from the last channel you used to talk.

#### c) Priority Scan

During scanning, if the priority channel has been set on the radio, when the priority channel receives signals the radio will automatically switch to the priority channel even the normal channel is receiving signals at that time. And the radio will stay on the priority channel till the signals disappear. The dealer can set the delay time between signal disappearing and continuing scanning.

#### d) Temporarily Delete

When scanning pauses on a channel, press and hold the button programmed as "Temporarily Delete" or "Scan + Temporarily Delete" for 1 second to delete this channel temporarily from the scanning list.

Note: The priority channel cannot be deleted. And when the number of scanning channels is less than 2, you cannot delete any channel, either.

After exiting scanning mode and entering it again, the temporarily deleted channel will be added in the scanning list again.

## Scrambler

Press the button set as "Scrambler" to prevent the third party from hearing clear your talking; and such a state will not be stored after turning on the radio again or switching to other channels.

## **Scrambler Backup**

Press the button set as "Scrambler Backup" to prevent the third party from hearing clear what you are talking; and such a state will be stored even after turning on the radio again or switching to other channels

#### **Cancel Squelch**

Press the button set as "Cancel Squelch" to turn on the squelch; press it again to exit.

## **Instantaneously Cancel Squelch**

Press the button set as "Instantaneously Cancel Squelch" to turn on the squelch; release it to exit.

#### **Talk Around**

After you press the button set as "Talk Around", the radio will transmit in the receiving frequency when you press the PTT button.

### **Power Check**

Press and hold the button set as "Check Power" to hear the current power level. One beep indicates low power; two beeps medium power; and three beeps high power.

#### Whisper

After you press the button set as "Whisper", your counterpart can hear louder voice even you speak in a very low voice; press it again to exit.

## **VOX** (Voice-operated transmission)

Press the button set as "VOX" to enter the voice operated mode and you can talk with your counterpart without pressing the PTT button.

#### **Battery Power Indication**

When you press the button set as "Battery Power Indication", indication tone "1", "2", "3" or "4" sounds to indicate the current battery power.

#### **Temporary Activation of Channel Annunciation**

When you press the button set as "Temporary Activation of Channel Annunciation", one of the following situation occurs:

- a. If the current channel number sounds at the beginning:
  - Press the button set as "Temporary Activation of Channel Annunciation" to sound two beeps to temporarily cancel the channel annunciation function; you still can hear the channel number annunciation after turning on the radio again.
- b. If the current channel number doesn't sound at the beginning:
   Press the button set as "Temporary Activation of Channel Annunciation" to sound one beep to temporarily activate the channel annunciation function; you won't hear the channel number annunciation after turning on the radio again.

#### **Activation of Channel Annunciation**

When you press the button set as "Activation of Channel Annunciation", if the radio sounds two beeps, it cancels the channel annunciation function; you won't hear the channel number annunciation after turning on the radio again.

When you press the button set as "Activation of Channel Annunciation", if the radio sounds one beep, it activates the channel annunciation function; you can hear the channel number annunciation even after turning on the radio again.

#### **Reverse Frequency**

Press the button set as "Reverse Frequency" to activate the reverse frequency function.

## **■** Wired Cloning Mode

If the wired cloning mode has been set, the radio won't exit automatically after it entering the wired cloning mode. To return to the user mode, you need to turn on the radio again.

Wired cloning procedures are as follows:

- 1) Press and hold the Side Button 2 on the host radio while turning on the radio; about 2 seconds later, two short beeps sound and red indicator flashes, and the radio enters cloning mode.
- 2) Press once the PTT button on the host radio, and then the sub radio to receive data will enter

the Activation/Prohibition of Wired Cloning Mode. However, the wired cloning setting on the host radio won't be changed.

After pressing the PTT button, if the green indicator flashes twice and one beep sounds, it indicates the sub radio is in the state of Activation of Wired Cloning; if the red indicator flashes twice and two beeps sound, it indicates the radio is in the state of Prohibition of Wired Cloning.

3) In the cloning mode, press the Side Button 2 on the host radio, and then red indicator flashes and it begins cloning. After cloning, the indicator turns dim.

Note: You can activate or prohibit the wired cloning mode by PC programming software. If the wired cloning mode is prohibited the radio cannot enter the wired cloning mode.

## **■** Auxiliary Functions

#### **TOT (Time-out Timer)**

#### 1) **TOT** (Time-out Timer)

- a) Time-out timer is to prevent any caller from occupying one certain channel and radio transmitting overlong.
- b) You can program the time-out timer, i.e. the time the radio can transmit continuously. If the radio has been transmitting continuously longer than the preset time, the radio will stop transmitting and warning tone sounds, and please release the PTT button.

#### 2) TOT Re-key

- a) TOT re-key specifies the time when transmission is prohibited after the time-out timer is activated.
- b) During the time of transmitting prohibition, if you press the PTT button, warning tone sounds and transmitting is prohibited.

#### 3) TOT Pre-alarm

- a) Before the time-out timer stops transmitting, the radio sounds pre-alarm tone.
- b) After the alarm tone, if the transmitting time is longer than the preset time limit, the time-out timer will be activated.

#### 4) TOT Reset

- a) TOT Reset is the delay time between releasing the PTT button and resetting the time-out timer.
- b) If the time of releasing the PTT button is shorter than the TOT Reset, the countdown of transmitting prohibition will continue.

## **Battery Save**

The dealer can program the battery save type.

If the battery save function has been set, 10 seconds after no signals being received or no operations being conducted, the radio enters the battery save mode. It will exit the battery save mode automatically after receiving signals or being conducted.

Battery Save Types: 1:1, 1:2, 1:4 and OFF.

Battery save function can decrease the battery power consumption.

## **Low Power Warning**

Low power warning tone sounds and LED flashes red when the battery power goes below the preset value and you need to recharge the battery. In low battery status transmission is prohibited.

#### **Channel Annunciation**

The dealer can activate or prohibit this function. Two types of Chinese and English annunciation are available.

When switching to a channel by rotating the channel knob, the current channel number will sound.

#### CTCSS/DCS

The dealer can set CTCSS/DCS on the radio channels to ignore calls on the same channel from irrelevant radios.

If a channel has been set with CTCSS/DCS, the squelch will be activated only when it receives the proper CTCSS/DCS signals. And only the radios set with the same CTCSS/DCS signaling as those on yours can hear your call.

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

#### **User Solution**

A user solution includes PTT code-transmitting, encoding, decoding, Busy Channel Lockout, Call 1/2, SP un-mute, and decoding conditions, etc. Maximum 32 user solutions are available on this radio.

- a) An encoding template consists of at least one and at most 3 encoding sequences. The setting of each sequence has options 5-Tone, 2-Tone, and DTMF. If it is set at 5-Tone or DTMF, you need to program its content. If it is set at 2-Tone, you need to program two frequencies. After setting the encoding templates, the dealer can choose one of these encoding templates as the user solution.
- b) The decoding templates are divided into 5-Tone decoding templates and 2-Tone decoding templates. Only when the decoding template is identical with the encoding template, it can decode successfully.

#### **Busy Channel Lockout (BCL)**

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

If you press the PTT button when the channel is busy, the radio with BCL function active will make warning sound and transmission is prohibited. To stop the warning sound, please release the PTT button and the radio will return to receiving mode.

The dealer can set one of the following BCL types:

- 1) OFF: BCL is inactive and you can transmit on the busy channel.
- 2) Carrier wave: If carrier wave is detected, the radio is unable to transmit.
- 3) CTCSS/DCS: The radio is allowed to transmit when the CTCSS/DCS signalings are identical.
- 4) Selective signaling: The radio is allowed to transmit when the selective signalings (2-Tone or 5-Tone) are identical.

#### SP Un-mute

The dealer can the conditions to activate the speaker. There are 6 options:

- 1) Carrier wave: The speaker will be activated when carrier wave is detected.
- 2) Carrier wave + selective signaling: The speaker will be activated when carrier wave is detected and the selective signalings are identical.
- 3) Carrier wave or selective signaling: The speaker will be activated when carrier wave is detected or the selective signalings are identical.
- 4) CTCSS/DCS: The speaker will be activated when CTCSS/DCS signalings are identical.
- 5) CTCSS/DCS + selective signaling: The speaker will be activated when CTCSS/DCS and selective signalings are identical.
- 6) CTCSS/DCS or selective signaling: The speaker will be activated when CTCSS/DCS or selective signalings are identical

#### **DTMF**

The dealer can set DTMF signaling into encoding sequence. If DTMF is set in the encoding template, press the corresponding programmable button "Call 1" or "Call 2" to transmit the coding.

#### 5-Tone

The dealer can activate or inactivate this function by programming.

5-Tone has 17 encoding formats: CCIR1, CCIR2, PCCIR, ZVEI1, ZVEI2, SVEI3, PZVEI, DZVEI, PDZVEI, EEA, EURO SINAL, NATEL, EIA, CCITT, MODAT, USER DEFINED 1, and USER DEFINED 2. The last tow formats are user defined.

#### 1) 5-Tone Decoding

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

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

#### 2) 5-Tone Encoding

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 or Call 2 button,, which can be set by the dealer.

#### 2-Tone

The dealer can activate or inactivate this function by programming.

#### 1) 2-Tone Decoding

When receiving proper 2-Tone signaling, the radio will work according to the decoding call response set by the dealer. LED flashes orange.

#### 2) 2-Tone Encoding:

If the PTT ID on the channel you select has been set with 2-Tone, 2-Tone signaling will be transmitted when making a call.

Or transmit 2-Tone signal by pressing the Call 1 or Call 2 button, which can be set by the dealer.

## Transmitting Beginning/Ending Signaling

Transmitting Beginning/Ending signaling is used to join in or disconnect from some repeater and calling system.

- 2) Transmitting Beginning signaling is used to join in the conventional repeater and its relevant auxiliary equipments. If the ID being transmitted matches with the repeater's ID, it can use the repeater and its auxiliary equipments.
- 3) Transmitting Ending signaling is used to disconnect with the conventional repeater and its relevant auxiliary equipments. If the ID being transmitted matches with the repeater's ID, it can disconnect from the repeater and its auxiliary equipments.

## **■** Troubleshooting

No.	Problems		Solutions
1	The radio cannot be switched on or no display after switched	3	Battery pack may not be installed properly. Remove the battery pack and install it again.  Battery power may be insufficient. Recharge or replace the battery
2	on.  The battery power consume quickly after charging.	3	The battery life is finished; please replace it with a new battery pack.
3	Cannot talk to or hear other members in your group.	<ul><li>3</li><li>3</li><li>3</li></ul>	The frequency or CTCSS/DCS signalings are not identical and please reprogram it.  Make sure the SP un-mute setting of the selective signaling 2-Tone or 5-Tone in user solution is proper.  Beyond the radio efficient communication range.
4	Other voices from non-group members are heard on the channel.	3	Change the CTCSS/DCS tone, and make sure change the tone on all radios in your group.  Please set 2-Tone or 5-Tone selective signaling on the channel.
5	Communication range is too small.	3 3 3 3	Make sure the antenna is well connected.  Make sure the antenna is the originally supplied one.  Check if the battery power is in the normal state.  Ask your local dealer to adjust the squelch level.
6	Unable to transmit.	<ul><li>3</li><li>3</li><li>3</li></ul>	Make sure the PTT button has been pressed completely.  Battery power may be insufficient. Recharge or replace the battery pack.  Transmitting frequency has not been set on the channel and the radio has been remote killed.
7	Noise is too loud.	3	Battery power may be insufficient. Recharge or replace the battery pack.  Beyond the efficient communication range.

# **■** Major Specifications

PT5200				
Frequency Range	(1) 420-454			
(MHz)	456~470			
RF Power	3.5W (H) / 2W(M) / 0.5W (L)			
Spurious and Harmonics	≤-70 dB			
Frequency Stability	±2.5ppm			
Max Antenna Gain	1.4dBi			
Maximum Frequency deviation	±5.5kHz (W)/ ±3.5kHz (M)/ ±2.2 kHz (N)			
Receiver Sensitivity	≤0.3μV			
Adjacent Channel Selectivity	≥70dB (W/M)/ 65dB (N)			
Intermodulation Reject Ratio	≥65dB			
Maximum AF Output Power	≥500mW			
Number of Channels	16			
Battery (Standard)	DC 7.4V			
Dimension (W $\times$ H $\times$ D)	56mm×102 mm×29 mm			
Weight	235g (With battery and antenna)			

# **■** Settings (by the Dealer)

Model:		Se	rial No.:				
1) Channels List							
Channel	Receiving Frequency	Transmittig Frequency	CTCSS /DCS Decode	CTCSS /DCS Encode	Power	Channel Spacing	User Solution
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
2) Optional Functions  Time-out Time (TOT)  15-600s  Squelch Level  1-9  Voice Annunciation  Chinese   English   Battery Save  OFF   1:1   1:2   1:4							
3) Auxiliary Function Button Settings							
Side Button 1			Side Butto				
	function)			Null (No	function)	)	
Call 1				Call 1			
Call 2				Call 2			

Cancel Alarm		Cancel Alarm		
Individual Working		Individual Working		
Monitor		Monitor		
Instantaneously Monitor		Instantaneously Monitor		
Temporarily Cancel Noise Cha	annel $\square$	Temporarily Cancel Noise Ch	annel $\square$	
Cancel Noise Channel		Cancel Noise Channel		
Check Squelch Level		Check Squelch Level		
Adjustable Squelch		Adjustable Squelch		
Scan		Scan		
Scrambler		Scrambler		
Scrambler Backup		Scrambler Backup		
Cancel Squelch		Cancel Squelch		
Instantaneously Cancel Squelo	ch 🗆 1	Instantaneously Cancel Squelch		
Talk Around		Talk Around		
Power Check		Power Check		
Whisper		Whisper		
VOX		VOX		
Battery Power Indication		Battery Power Indication		
Temporary Activation of Char	nnel	Temporary Activation of Chann	nel	
Annunciation		Annunciation		
Activation of Channel		Activation of Channel		
Annunciation		Annunciation		
Reverse Frequency		Reverse Frequency		
Note:				