Kirisun

INSTRUCTION MANUAL

PT4208
FM HANDHELD TRANSCEIVER

NOTE：

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

We believe *Kirisun* two-way radio, which always incorporates the latest technology, can bring great convenience to your life and work;

We also believe that the quality and function of *Kirisun* two-way radio can meet your demands for reliable communication.

PRECAUTIONS

Please observe the following precautions to prevent fire, personal injury, and radio damage.

Do not operate your radio while taking on fuel, or being charged.

Do not expose the radio for a long period to direct sunlight, nor place the radio close to heating appliances.

Do not place the radio in excessively dusty areas, humid

areas，or on unstable surfaces.

Do not modify this radio for any reason.

Refer service to qualified licensed or certificated technicians only.

Notice to the User:

· Government laws prohibit radio communication without permission in government districts.

· Illegal operation is subject to punishment by fine and/or imprisonment.

· Refer service to the well-trained professional technicians only.

Safety

It is important that the user is aware of and understands hazards common to the operation of any radios.

Warning!

Turn off your radio before entering 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.

Precautions in Use

Please comply with the following attentions to avoid fire, bodily injury and damage to the radio.

· The radio is recommended to transmit for 1 minute and

receive for 4 minutes. Long time transmitting or continuous working in high power mode will make the rear side of the radio generate heat.
· Please don't disassemble or assemble the radio under any circumstances.
· 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 the radio emits smoke or strange odors, turn it off and remove the battery from the radio and promptly contact your local authorized Kirisun dealer.
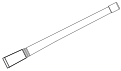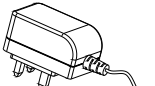
CONTENTS

1. Package-opened Inspection

Please check the host in the package and the supplied accessories in the following table before using. Any articles are found lost or damaged, please contact the distributor without delay.

1.1 Supplied Accessories

Accessories	Quantity
Antenna	1
Battery	1
Back Clip	1
Intelligent Charger	1
Switching Power Supply	1
Strap	1
User's Manual	1

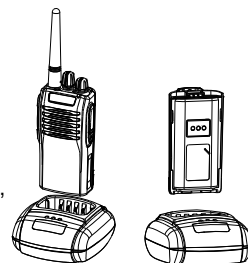|		
Antenna	Switching Power Supply	Battery
Charger	Leather case	Strap

2. Preparation

2.1 Charge the battery

Insert the cable of the power adaptor into the adaptor jack at the back of the charger, insert the power adaptor into applicable AC power output socket, the 3 LED lights will flash for about 1 second, the green light will be on constantly when normal.

Insert the battery to be charged or the radio in the charger, please switch off the radio before installing it into the charger.

Make sure that the terminals of the battery and the charger can contact with each other reliably, when the red LED is on, the char--ging starts.

After about 5 hours of charging, the red LED will be out, and the green LED will be on, which indicates that the battery is fully charged.

When the green LED is on, you can remove the battery, when the battery reaches its best performance, then you can remove the power adaptor from the AC power output socket.

If the yellow LED flashes, that indicates abnormal charging tempe--rature or circuit, and the charger is in the protected status, in which you should not charge the battery compulsorily, please remove the battery and shut the power of the charger.

Note:

The battery has not been charged when leaving the factory, please charge the battery before using the radio for the first time.

Both KB-70A nickel-hydrogen battery and KB-70B Li-polymer batt-
-ery of the company are applicable to this radio.
After being purchased or before the first charging after being laid
aside for a long time (2 months), the battery can reach its normal
capacity after several times of charging, please ensure to charge
the battery for at least once every three months.
When the battery is fully charged or not used till the low battery alarm
status of the radio, it's better not to recharge it so as to avoid
influence its longevity and performance. Please remove the battery
from the charger after the charging.
If using KB-70A, when the radio enters the low battery alarm status,
please recharge the battery before reusing it, do not switch on the
radio compulsorily, which may influence the longevity and perfor-
-mance of the battery.
KB-70B battery is provided with internal protective circuit, in the low
battery status, it will cut the power automatically, if it's charged on
the charger now, the red LED will not be on immediately, about 1-5
minutes later, the charging indicators will turn normal.

2.2 Install/remove the battery

Install the battery
Align the two protrusions at the lower
end of the battery to the slot at the
lower part of the shell of the radio
and insert in.
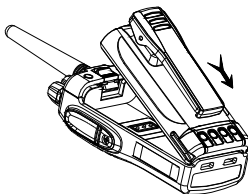
Press the upper end of the battery
down till the push button on the radio
completely bounce out and locked.
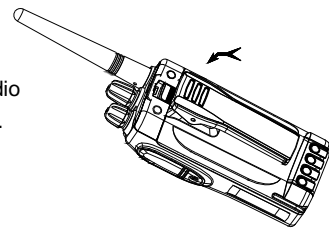
Remove the battery
To remove the battery, slightly
press the battery and pull the push
button upwards, and then remove
the battery from the radio.
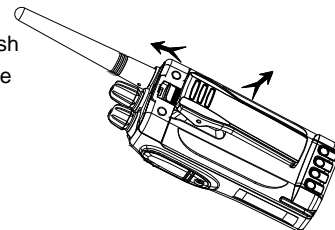
Note:
Please avoid short circuit of terminals of the battery or throw the battery
in fire.
Do not remove the shell of the battery by yourself.

2.3 Install the Antenna
Holding the base of the antenna, screw the
antenna clockwise into the connector on top
of the radio till it's fastened.

2.4 Install external speaker/MIC

Open the soft rubber cover of external speaker or MIC with your finger-
-nail, insert the pin of matching external speaker or MIC into the pinhole
of the radio.
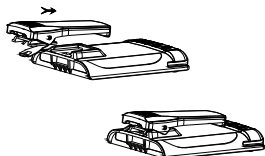
2.5 Install the belt clip

Align the guide rail of the support of the
belt clip to the guide slot on the back of the
battery and push downwards properly; to
remove the belt clip, insert your fingernail or a tool into the slot on the
upper part of the belt clip and push the card upward, at the same time,
push the belt clop upward by force to remove it.

3. Radio Overview
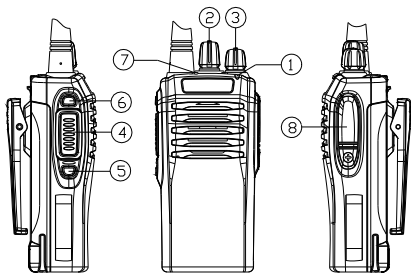
①.LED INDICATOR

　Red LED on when transmitting, green LED on when receiving signals.
　Red LED flashes when low battery.

②.Channel selector knob

Turning to select channels 1-16.

③.Power/Volume knob

　Turn clockwise to turn on the radio, keep turning to adjust the
　volume.To turn off the radio, just turn the knob anticlockwise till a
　sound of "Ka-Da" is produced.

④.PTT (PUSH-TO-TALK) key

　Press the PTT key and talk towards the MIC to send the voice to the
　recipient.

⑤.Side key 1 (programmable key)

⑥.Side key 2 (programmable key)

⑦.Top key (programmable key)

⑧.Speaker/MIC connector

　Connecting external speaker and MIC.

4. Basic Operation

①. Startup:

Turn the Power/Volume knob clockwise to
turn on the radio. If the dealer has set the
prompt sound, a sound of "Bee" will be
produced.

②. Volume:

You can press the key programmed to
"cancel squelch" to receive background
noise and then turn the Power/Volume key
to adjust the volume.

③. Channel:

Turn the channel selector knob to select the required channel. When the correct signal is received, you can hear sounds from the speaker.
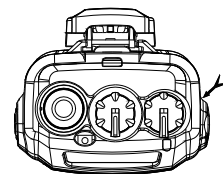
④. Transmission:

To send a call, press the PTT key and speak to the microphone in the normal voice. Please keep the microphone about 3 or 4 cm far from your mouth.

⑤. Receive:

The radio will return to the receiving state after you loosen the PTT key. The distributor may have set the CTCSS/DCS signaling in the programmed radio of your radio. On the channels with CTCSS /DCS are set, you can only hear the call from other radio with the same CTCSS/DCS.
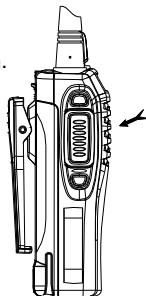
5. Programmable Key Function

Top key, side key 1, side key 2 can be programmed as one of the following functions.

Keys	Function Description
0. None	No function
1.Voice announcement selector	Press this programmable key to switch between different languages and modes of voice announ--cement and hear the number of channels being broadcast.
2.Talkaround	Switch the radio between talkaround and repeater

	mode.
3.Call Key 1	Sends the DTMF/2Tone code assigned to call 1 key.
4.Call Key 2	Sends the DTMF/2Tone code assigned to call 2 key.
5.Lone worker	Enables Lone worker function
6.Emergency Alarm	Press the key programmed as "Emergency Alarm" to set alarm tone according to the programming software or send your own ID or background tone to your friend or the system.
7.Emergency Alarm Off	Press this key to quit the Emergency Alarm mode.
8.Mandown	Press this key programmed for "Mandown" to enter the working mode of mandown (optional)
9.Scan	Start/end the scanning function of system.
10.Nuisance Delete	Press this key to delete the noise channel when the radio enales the scan function and stays at the noise channel.
11.Hi-Low Power Switch	Press to switch between high and low power of the sending power of the radio.
12.Monitor momentary	Press to disable CTCSS, DCS signaling according to the setting and release to resume normal operation.
13.Monitor	Press to disable CTCSS, DCS signaling to receive signals that cannot be heart by normal operation.

	press again to resume normal operation.
14.Squelch off momentary	Press to enable squelch and release to resume normal operation.
15.Squelch off	Hold this key to open the squelch. loosen this key to return to the normal operation.
16.Lone worker reset	After enabling the Lone worker, press this key to reset the Lone worker timer and the timing resumes.

6. Auxiliary functions

6.1 Time-out Time（TOT）

1) TOT Transmission time limit:

a) TOT timer is provided to prevent the talker from talking too long and occupying the channel for a long time, and to avoid too long continu--ous transmission of the radio.

b) Setting the time for continuous transmission. When the transmis--sion excesses the preset time limit, the radio will alarm and stop transmission.

2) TOT Rekey time:

a) Limiting the time period in which the radio is prohibited to transmit after the TOT timer actions.

b) During the period in which the radio is prohibited to transmit, if the PTT key is pressed, a prompt will be generated and the transmission is prohibited.

3) TOT Pre-Alert

a)The radio will alarm in advance before the TOT timer pauses the transmission.

b)After the alarm, when the time of transmission exceeds the preset time, the TOT timer will act.

4) TOT reset time:

a)Limiting the time delay from the PTT key is loosened to the timer resets.

b)If the time of releasing the PTT key is shorter than that of the reset, the countdown continues.

6.2 battery saving

The dealer may set the energy saving modes of the battery by programming.

If this function is enabled, the radio will enter the battery saving mode If not receiving any signal or any operation for 10 seconds. The radio will automatically quit the battery saving mode if receiving any signal or operation.

There are 4 modes of battery saving: 1:1, 1:2, 1:4 and off.

This function can reduce the power consumption of the battery.

6.3 Low battery alarm

In the low battery status, the indicator will flash for prompt. If the battery level is so low as to reach the preset value during transmission of signals, the red indicator will flash. When the battery level is too low, the radio is not capable of transmitting signals.

6.4 Voice announcement

This feature can be enabled or disabled by the dealer and has two language modes: Chinese and English.

When changing the channel with the channel selector, after the
channel is changed, the radio will announce the number of the
channel selected.

6.5 CTCSS /DCS

The dealer may have programmed CTCSS or DCS signals on
channels of the radio, you can ignore calls of other irrespective radios
using the same channel.
When a certain channel is provided with CTCSS or DCS signals, the
squelch is only enabled when receiving correct CTCSS or DCS
signals. Similarly, only radios with the CTCSS/DCS signals confo-
-rming to that of your radio can receive your signal.
Note: Although it appears that once you use CTCSS/DCS, you can
have your own channel, if other radios set the same CTCSS or DCS
signals, they can still hear your calling.

6.6 Dual Tone Multi-Frequency (DTMF) Coding

DTMF signaling can be set into code sequence by the dealer, when
the coding template contains DTMF signaling, press corresponding
programmable keys "Call 1" "Call2", the codes can be
transmitted.

6.7 Talkaround

In the communication network, you can expand communication range
through the repeater, but when the radio is out of the communication
range, you can connect with other radio in the talkaround method.
Switch the talkaround or repeater mode through "Talkaround" key.

6.8 Scan

The radio can be programmed to scan multiple channels to
receive signals from them.

6.8.1 Start/End Scan Function

a) Press the key programmed to "Scan", the Scan function is
entered. During the scan, channels in the scan list of the radio
will stop when signals are found, the radio will stay at the channel
with signals till the signals disappear, if the time delay between the
signals disappear and the scan resumes, the radio will stay at the
current channel if no signal is received during the dime delay.
b) Priority Scan:
You can select one channel in the scan list as the priority channel,
which has the highest priority during the scan, during the scan, a
non-priority channel in the scan list will be scanned first, and then
the priority channel, and then the next non-priority channel, and
then the priority channel again, and the scan goes on in this cycle.
If the priority channel and the lookback period are set in the Scan list,
when the radio receives signals in a non-priority channel, it is in
the Scan Stopped status and will lookback the priority channel in a
certain cycle, if there are signals in the priority channel, it will stay
at the priority channel, if there are no, it will return to the original
channel.
c) There are the following options for the revert channel during the
scan set by the dealer (i.e., the transmitting channel during the scan):
Select channel: The radio transmits signals from the channel
where the scan is started.
Select channel + current channel: if the radio is at the Scan Staying

status, it will transmit signals from the current channel, otherwise, it will transmit signals from the channel where the scan is started.
Priority channel: The priority channel preset in the Scan list.
Priority channel+ current channel: if the radio is at the Scan Staying status, it will transmit signals from the current channel, otherwise, it will transmit signals from the priority channel.
Last calling receiving channel: The channel where the radio has received signals for the last time.
Last transmission + Current channel: if the radio is at the Scan Staying status, it will transmit signals from the current channel, otherwise, it will transmit signals from the channel where it has transmitted signals for the last time.

6.8.2 Nuisance Delete

If a channel continuously generates noise or interference, press the key to remove this channel from the scan list temporarily.
Note: the priority channel can't be removed and the last one in the scan list, either.
Quit the Scan mode and enter it again, the deleted channel will be added to the scan list again.

6.9 Transmission Begin and Transmission End Signals (PTT ID)

Transmission Begin and transmission End identification signals are used for continuing with or stopping certain repeaters and phone systems.
If Transmission Begin has been set, when you press the PTT switch, the ID signals will be transmitted.

If Transmission End has been set, when you release the PTT switch, the ID signals will be transmitted.
If both have been set, the ID signals will be transmitted respectively when you press and release the PTT switch.

6.10 Lone worker

If Lone worker is set to be enabled, press the key "Lone worker" to enable the Lone Worker Mode. Start the Lone worker timer and when the preset Lone worker time is reached, the radio will alarm, after the alarm time, the radio will enter the Emergency Alarm Mode and give out the Emergency Alarm.
In the Lone worker Mode, press the "Lone worker" key again to quit the Lone worker mode.
In the Lone worker Mode, press the key programmed for "Lone worker reset" (the specific key to select lone worker reset mode) or any key (any key to select lone worker reset mode), the Lone worker timer will start timing again.

6.11 Emergency Alarm

Press the key programmed for "Emergency Alarm" (the time of pressing must be longer than the de-bounce time of the emergency alarm switch) to enter the Emergency Alarm mode. You can set alarm tone according to the programming software or send your own ID or background tone to your friend or the system.
In the Emergency Alarm Mode, press the key "Emergency Alarm Off" to quit the Emergency Alarm Mode and disable the alarm tone or stop sending it and resume normal operation.

7. Wired Clone Mode

If the wired clone function is enabled, the radio will not quit after entering the wired clone mode. To return to normal user mode, the user needs to restart the machine.

The operating steps go as follows:

1. Press side key 1 for power-on at least 2 seconds and enter the clone mode. If the function is disabled, it will enter the user mode.

2. Connect the slave radio with the wired clone cable first, and then turn on.

3. Press side key 2 on the master radio for starting clone. During transmitting the data, the master radio lightens red, and the slave radio lightens green . After the slave radio receiving all the data, the red light on the master radio is off, and the slave radio restarts.

4. You can keep copying according to step 3 above.

8. Trouble Shooting Guide

No.	Problem	Solution
1	Power on Failure	A. Unreliable connection between the battery and the radio, please reinstall the batter. B. The protective tube of power is burnt out. Please change it. C. Power switch in failure, please change it. D. The rechargeable battery is out of power. Please recharge or change a new one. E. CPU is broken, Please change the IC.
2	Phase lock loop unlocked (Beeping)	A. Channel frequency beyond the range, reset channel data.
		B. The crystal X4 of phase lock loop is broken. Please change it. C. The oscillator transistor is broken. Please change it. D. The IC1 of phase lock loop is broken. Please change IC.
3	No talkback	A. The frequency is not right. Please reselect the channel of the same frequency. B. The CTCSS/DCS code is not the same. Please reset it. C. It is out of the effective communication range.
4	No receiving signal	A. The antenna is not in good contact. Please fasten the antenna head. B. The high-frequency amplifier Q20 is broken. Please change it. C. The squelch level is set to high, Please reset the squelch level. D. The mixed transistor Q19 is broken. Please change it. E. The IC5 is broken. Please change IC.
5	The red transmission Indicator lights but no sound is heard.	A. Power module Q11 damaged, no power output, please change the module. B. MIC damaged, please change it.
6	The green receiving indicator lights but no sound is heard.	A. The speaker is broken. Please change it. B. The audio power amplifier Ic8 is broken. Please change IC.

9. Major Specifications

	PT4208
General Specifications	
Frequency	136~174MHz, V
	400~450MHz, U
	420~470MHz, U
Channel Number	16
Channel Spacing	12.5kHz(N)/25kHz(W)
External Dimension (HXWXD)	119mm*54.5mm*34mm
Weight	247g (including the battery and the Antenna)
Operating Temperature	-25℃ ~ +55℃
Receiving sensitivity	≤0.28μV（N） ≤0.25μV（W）
Frequency stability	2.5ppm
TX power	4W (UHF)，5W (VHF)
Max. frequency deviation	±2.5 KHz (N) /±5 KHz (W)
Max. audio power	≥ 1000mW
Power	DC7.4V

DECLARATION
OF CONFORMITY

CE 0678 ①

We, Kirisun Electronics(Shenzhen) Co., Ltd.
      6/F, Bldg.H-2,East Industrial Zone Of Overseas
      Chinese Town,Shenzhen 518053, China

Declare on our sole responsibility that this equipment complies with
the essential requirements of the Radio and Telecommunication
Terminal Equipment Directive,1999/5/EC,and that any applicable
Essential Test Suits measurement have been performed.

Description of equipment: FM Handheld Transceiver
Model No.: PT4208

This compliances is based on conformity with the
 following harmonised standards or documents:
 (1). ETSI EN301489-1 V1.6.1(2004-12)
 (2). ETSI EN301489-5 V1.3.1(2002-08)
 (3). ETSI EN300086-1 V1.2.1(2001-03)
 (4). ETSI EN300086-2 V1.1.1(2001-03)
 (5). EN60950：2001+A11：2004

Shenzhen, 10 Dec 2008   WenLiang, Fu
Place and date of issue   General Manager

Signature
Kirisun Electronics Co., Ltd

NOTE：

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