BelFone

www.belfone.com

BF-530

Analog Two-way Radio

Notice to the user

Government law prohibits the operation of unlicensed radio transmitters within the territories under government control.
Illegal operation is punishable by fine or imprisonment or both.

THANK YOU

We are grateful you choose BelFone series professional radio communications products!

Since 1989, BelFone has been always engaging in research and exploration of radio communications technologies, In order to lead intelligent technologies in the industry. We still make every effort to research and design products according to modern complicated communications environment, and we offer complete and customized communication solutions to clients. Our products will satisfy you because of its excellent performance and outstanding communications strength. No matter what field you are in. You will be Satisfied with the radio.

This manual is applicable to

VHF/UHF FM transceiver model：BF-530

Warning!

◆In explosive atmospheres (inflammable gas, dust particles, much powder area, etc.), please turn the power off.

Precautions

It's important that the operator is aware of and understands hazards common to the operation of any radio .Please observe the following safety precautions to prevent radio damage or personal injury. The following precautions shall be observed during operation, service and repair of this radio.

◆The recommended usage rate is 1 minute for TX and 4 minutes for RX, when the radio is used for transmission for many hours continuously, the radiator and chassis will become hot, allow the rear panel of the two-way radio to contact surface of low melting point /low Ignition point object.

◆Don't leave the transceiver in direct sunlight for a long time, don't place the transceiver on extremely heat, damp, dusty area, and don't put it on unstable surfaces;

◆When restriction or warnings are posted regarding the use of radio devices, Please obey the regulation turn the transceiver power off;

◆Use of the radio while you are driving may be against traffic laws, Please prohibit using it;

◆If you notice any problems on the radio, please turn off at first. Then contact with local dealer. Do not modify this radio unless instructed by this manual or refer service to a qualified licensed or certified technician only;

◆If you want to use the machine for secondary development, Please contact with BeiFeng's Technical engineer or dealer for technical assistance;

◆Please keep the surface of radio is clean and dry, Clean the radio using a cloth moistened with clean water and a mild dishwashing liquid.

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Supplied accessories

Notes: The accessories listed below are covered by BeiFeng dealer, authorized BeiFeng agents or factories.

After carefully unpacking the transceiver, identify the items listed in the table below. If any items are missing or have been damaged during shipment please contact with dealer immediately.

Accessories

Items	Quantity
Antenna	1
Strap	1
Li-ion Battery	1
Charger	1
Belt Clip	1
Screws	1
Instruction Manual	1
Warranty Card	1
Certificate	1

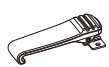
Antenna

Strap

Charger

Li-on battery

Belt Clip



Screws

Installation of Accessories

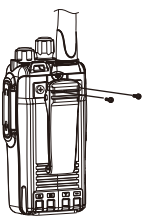
Installation/ removing the antenna

Hold the supplied antenna by its base, then screw it into the connector on the top panel of the radio until fasten.

Turn the antenna anti-clockwise to remove it.

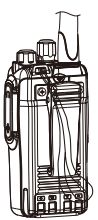
Attaching/Removing the belt clip

Attach the belt clip using the two supplied3*4mm binding screws.



Attaching/Removing the Strap

Thread the hand strap to the loop back of your two-way radio.

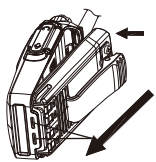


Attaching/Removing the belt clip

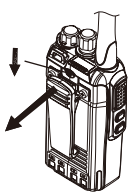
Warning!

- Don't short-circuit the battery, it may cause the battery damaged or burst into flame;
- Never attempt to remove the casing from battery, That avoid to short the battery terminal;
- Battery is flammable objects, don't throw it into fire or don't use it on dangerous area.

Match the guides of the battery with the corresponding grooves on the down rear of the radio, and then press the battery upper until a click is heard to lock it in place.



To remove the battery, please turn the power off then press the release latch upper to unlock the battery pull the battery away from the radio.
Note: Don't attach / remove the battery if the transceiver turned on.



Li-ion battery features

●New batteries are activated from factory; please charge your battery before using it. The maximum battery capacity and performance is achieved after three full charge/ discharge cycles.

●The service life of batteries: charge cycles time is limited, to prolong battery life try to reduce make charge by the battery remained.
●To reduce self-discharge, please remove the battery before you not in use for a long time, and store your battery in a cool, dry location.
●Charge your battery about 50% before you store it for a long time, so that can prevent to decrease the battery performance.
●As the battery is charged and discharged repeatedly, the battery capacity decreases, even if the battery is unused, the battery degrades, and store battery in a high temperature will shorten its lifecycle.

Charging the Li-ion battery

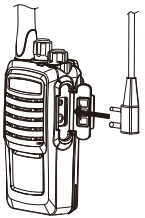
●When the battery power runs low, the radio will send alert sounds, please recharge the battery.
●Please only use the battery and charger specified by BeiFeng.
●When charging a battery attached to a radio, please turn the radio off.
●Please don't remove the battery from the charger before fully charge, or the battery could suffer damage.
●Please remove the battery timely when the battery is fully charged.
Note: While the battery is charged, the ambient temperature must be within 0~40, Temperature out of the limit may reduce working life or charging efficiency.

Charging Steps

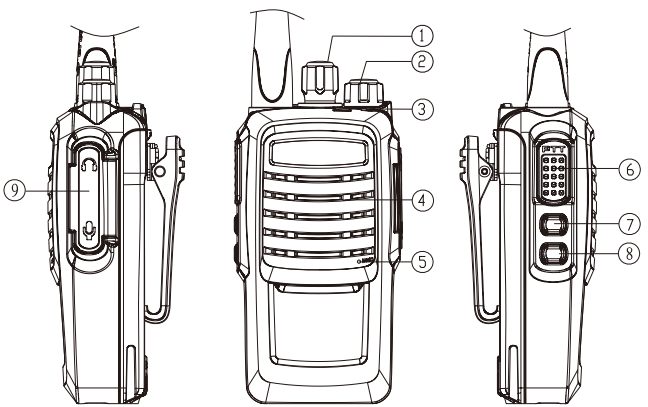
1、Place the battery or the radio is attached with a battery in the charger.
2、Plug the AC connector of the switching power into the outlet socket.
3、Making sure the battery is connected to the charger, the charging process initiates when the charger indicator glows red.
4、The charger indicator glows green when the battery is fully charged.
Note: Mack sure the battery is connected to the charger, but the charger indicator not glow, Maybe the battery /charger has damaged or temperature out of the limit.

Attaching the Speaker/Microphone

Open the accessory jack cover; plug the audio accessory firmly into the accessory jack.



Getting Acquainted



① Channel Selector Knob

Turn the knob to select channel 1-16, if a channel is available, there will be a channel number sounds.

② Power switch/volume adjust keys

Turn clockwise to switch the radio power on, when the radio is turned on,

rotate clockwise to increased volume, counter- clockwise to decrease the volume. Turn counterclockwise fully to switch the radio off.

③ **LED Indicator**

When transmitting LED glows red; when receiving LED glows green.

④ **Speaker**

⑤ **Microphone**

Lights up red when transmitting, green when receiving.

⑥ **PTT key**

Press and hold down the PTT key then speak into the microphone to transmit.

⑦ **MONI key**

Long press the key to monitor selected channel.

⑧ **SCAN key**

Press to switch scan on/off.

⑨ **MIC-SP Jack**

Connect to optional speaker/microphone and programming cable.

Basic Operation

Turning the power on /off

Rotate the power switch/volume adjusting keys clockwise to turn the power on.

A tone high-pitched sounds and then current channel number sounds.

Rotate the power switch/volume adjusting keys anti-clockwise to turn the power off.

Adjusting the volume

After the radio is power on, you can rotate the power switch/volume adjust keys to adjust the volume level, rotate the knob clockwise to increase the volume, or rotate the knob anti-clockwise to decrease the volume.

Note: While you want to adjust the volume, you can press the MONI key then according the background noise to adjust the volume to a comfortable audio out level.

Selecting a Channel

Turn the channel selector knob to select channel 1 to 16, rotate the knob clockwise to increase the channel number, or rotate the knob anti-clockwise to decrease the channel number.

Note: Channel Number Warning Tone: You are rotating the channel selector knob, the radio can report the current channel's number.

Transmitting

1. Firstly, make sure the channel you use is not occupied by other radio.
2. Press and hold down the PTT key, and then speak into the microphone.

1). Please hold the radio about 3~4 centimeters away from your mouth at normal voice level.

2). Press and hold down the PTT key, LED indicator glows red to transmit

3. Release the PTT key to receive.

Receiving

When the LED indicator glows green that the channel you are using is called, you can receive signal.

●While received weak signals and the radio set high squelch level, the receiver will fail to receive incoming calls.

●Your dealer may set CTCSS/CDCSS for your radio, when you chosen the channel is set CTCSS/CDCSS, the user can only receive the calls on the same channel with same CTCSS/CDCSS.

PC Mode

Connecting the radio with computer by date line then turn on radio; secondly, runs the programming software（BFP-AH530）that the data can be input or read by users.

Functions and Operations

Runs the programming software, click the "Edit" option, then select "Optional Feature" to modify programming data.

Squelch Level

Squelch feature allows you to adjust the squelch threshold required for the radio to un-mute. If the squelch level is 0, the speaker is un-muted in any condition so as to receive any sound on the current channel; If the squelch level is 1~9, the background noise is mute.

You can set squelch level as 0~9, it allows you to select squelch levels according to the operating environment, If squelch level is too high that you can't receive weak signals, but level is too low that you can receive signal but at the same time background sound may be heard. So in high noise environment squelch level will be higher, when the environment quiet, squelch level will be lower.

VOX (VOX feature shall work with a dedicated earpiece)

If enable VOX feature you can enjoy hands-free communication, the radio will automatically begin transmitting when you speaking, and terminate transmitting when you stop talking with no need of PTT press. You may set VOX level as1~9 or disable (Off) the VOX feature by radio or through the programming software.

Press and hold down MONI key and turn on radio, LED indicator flashes red and green, then press MONI key to increase VOX level, or press SCAN key to decrease VOX level, you may select VOX levels according to the operating environment, When the environment too much noise, VOX level will be higher, when the environment quiet, VOX level will be lower. Selecting suitable level and restart the radio to activate the VOX feature.

While adjusting the VOX level, and press PTT key by accident, the VOX feature will be disable automatically.

Note: When you adjusting VOX level and speaking, LED indicator glows red, but your voice can't be transmitted.

Voice Prompt

If you switch the channel will hear a channel number as you enable Voice Prompt feature, the voice prompt may set as Chinese or English, if it is set None will disable voice prompt feature.

Scan

Scan is useful for monitoring signals on the channels of scan list, while scanning, the radio will checks for a signal on each channel and only stops on a channel if activity is detected. When a signal is detected on a channel, scan pauses on that channel, the radio will remain on the busy channel until the signal is no longer present after 5 seconds.

To begin scanning, press SCAN key about 1 second, a tone high-pitched sounds and LED indicator flashes green. Scan starts from the current channel number and ascends up the channel numbers. Once activity is detected on a channel, scanning will pause on the active channel for you to receive.

To stop scanning, press SCAN key about 1 second, two tone high-pitched sounds and LED indicator not flashes green.

●Press MONI key to receive signal is detected on a channel finally during scanning;

●Press PTT key during scanning will transmit on the last channel witch you received signal.

●When a signal is detected on a channel, press PTT key will answer on the current channel.

Note:

●In order for scan to enable, there must be at least 2 channels added to the scanning sequence.

TX Power

Users can switch the TX power level between high and low power. Selecting lower power for battery saving,

Bandwidth

There are two types of bandwidth available, you can choose bandwidth as wide (25 KHz) or narrow (12.5 kHz) via programming software.

Note: In order to guarantee the stability of communication, the receiver bandwidth of radio should set the same as the transmitter.

Beat Shift

Set up microprocessor system's clock frequency shift on every channel to avoid receiving the interfering signal. Through the programming software you can enable or disable the beat shift feature.

Busy Channel Lockout (BCL)

This feature can help avoid interference between radios transmitting on the same channel. There are two conditions available to enable BCL feature: Carrier or QT/DQT.

If the carrier you choose as "busy channel lockout" and the channel is already in use, press PTT the radio generates a warning tone and will be unable to transmit;

Release PTT will stop the warning tone, radio return to receive mode.

If the QT/DQT you choose as "busy channel lockout", the channel and QT/DQT code are already in use , press PTT the radio generates a warning tone and will be unable to transmit; Release PTT will stop the warning tone, radio return to receive mode.

CTCSS/CDCSS

When a channel is set up with a QT or DQT, speaker will only open when a call containing a matching code is received. Likewise, signals that you transmit will only be heard by others whose QT/DQT signaling matches your radio.

This allows you to ignore these calls. Although it may seem like you have your own private channel while using QT/DQT, others can still hear your calls if they set up their radio with the same QT/DQT.

CTCSS /CDCSS Decode

Runs the programming software BFP-AH530, you must input the RX and TX frequency firstly, and you can select desired decode, or you can input CTCSS: 60~260Hz, CDCSS: D000N/I~D777N/I directly. The transmitter set up encode the same as yours, you can receive calls from others.

CTCSS/CDCSS Encode

Runs the programming software BFP-AH530, you must input the RX and TX frequency firstly, and you can select desired encode, or you can input CTCSS: 60~260Hz, CDCSS: D000N/I~D777N/I directly. Radios with the same CTCSS/CDCSS or with no CTCSS/CDCSS, can receive calls from you.

CTCSS Standard Frequency Table

CTCSS No.	Freq. [Hz]	CTCSS No.	Freq. [Hz]	CTCSS No.	Freq. [Hz]	CTCSS No.	Freq. [Hz]
1	67.0	11	94.8	21	131.8	31	186.2
2	69.3	12	97.4	22	136.5	32	192.8
3	71.9	13	100.0	23	141.3	33	203.5
4	74.4	14	103.5	24	146.2	34	210.7
5	77.0	15	107.2	25	151.4	35	218.1
6	79.7	16	110.9	26	156.7	36	225.7
7	82.5	17	114.8	27	162.2	37	233.6
8	85.4	18	118.8	28	167.9	38	241.8
9	88.5	19	123.0	29	173.8	39	250.3
10	91.5	20	127.3	30	179.9		

CDCSS Standard Code Table

CDCSS NO	Positive Code	Negative Code	CDCSS NO	Positive Code	Negative Code	CDCSS NO	Positive Code	Negative Code
1	D023N	D023I	29	D174N	D174I	57	D445N	D445I
2	D025N	D025I	30	D205N	D205I	58	D464N	D464N
3	D026N	D026I	31	D223N	D223I	59	D465N	D465N
4	D031N	D031I	32	D226N	D226I	60	D466N	D466I
5	D032N	D032I	33	D243N	D243I	61	D503N	D503I
6	D043N	D043I	34	D244N	D244I	62	D506N	D506I
7	D047N	D047I	35	D245N	D245I	63	D516N	D516I
8	D051N	D051I	36	D251N	D251I	64	D532N	D532I
9	D054N	D054I	37	D261N	D261I	65	D546N	D546I
10	D065N	D065I	38	D263N	D263I	66	D565N	D565I
11	D071N	D071I	39	D265N	D265I	67	D606N	D606I
12	D072N	D072I	40	D271N	D271I	68	D612N	D612I
13	D073N	D073I	41	D306N	D306I	69	D624N	D624I
14	D074N	D074I	42	D311N	D311I	70	D627N	D627I
15	D114N	D114I	43	D315N	D315I	71	D631N	D631I
16	D115N	D115I	44	D331N	D331I	72	D632N	D632I
17	D116N	D116I	45	D343N	D343I	73	D654N	D654I
18	D125N	D125I	46	D346N	D346I	74	D662N	D662I
19	D131N	D131I	47	D351N	D351I	75	D664N	D664I
20	D132N	D132I	48	D364N	D364I	76	D703N	D703I
21	D134N	D134I	49	D365N	D365I	77	D712N	D712I
22	D143N	D143I	50	D371N	D371I	78	D723N	D723I
23	D152N	D152I	51	D411N	D411I	79	D731N	D731N
24	D155N	D155I	52	D412N	D412I	80	D732N	D732N
25	D156N	D156I	53	D413N	D413I	81	D734N	D734I
26	D162N	D162I	54	D423N	D423I	82	D743N	D743I
27	D165N	D165I	55	D431N	D431I	83	D754N	D754I
28	D172N	D172I	56	D432N	D432I			

Specifications

General	
Frequency range	VHF:136-174 MHz / UHF:400-470MHz
Channel Capacity	16
Channel Spacing	25 KHz /12.5 KHz
Operating Temperature	-20℃～+60℃
Antenna Impedance	50Ω
Operating Voltage	DC 7.5V (±20%)
Battery Capacity	2200mAh
Frequency Stability	≤±2.5 ppm
Dimensions (L×W×H)	60（L）*36(W)*109(H) mm
Weight	253g（including battery）
Transmitter	
RF Output Power	High Power：5W/Low Power：1W
Modulation	16K0F3E(Wide)/8K50F3E(Narrow)
Spurious and Harmonics	≤-36dBm
FM Noise	≤-40dB
Audio Distortion	≤5%
Adjacent Channel Power	≥65 dB(Wide)/60 dB(Narrow)
Modulation Limiting	≤5KHz(Wide)/2.5KHz(Narrow)
Receiver	
Sensitivity	≤0.2μV(Wide)/ 0.25μV (Narrow)
Adjacent Channel Selectivity	≥60dB(Wide)/ 55dB (Narrow)
Intermodulation Response Rejection	≥60dB(Wide)/ 55dB (Narrow)
Spurious Response Rejection	≥60dB(Wide)/ 55dB (Narrow)
S/D	≥45dB(Wide)/ 40dB (Narrow)
Rated Audio output power	0.5W
Max Audio output power	0.9W
Audio Distortion	≤5%

Statement

Our Company endeavors to achieve the accuracy and completeness of this manual, if you have any question, you can contact with us, we will make a detailed answer to you in time. All the above specifications and design are subject to change without prior notice due to continuous development.

BelFone

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RECYCLABLE PACKAGING