



Fujian Quanzhou Beifeng Telecom Systems Ltd.
MADE IN CHINA



北峰

BF-5118

UHF FM TRANSCEIVER



THE USER' S MANUAL

Beifeng Telecom Systems Ltd

CONTENTS

Notices to the User	1
Contents	3
Unpacking and Checking Equipment	4
Supplied Accessories	4
Preparation	5
Charging the Optional NiMh Battery Pack	4
Installing/Removing the Optional NiMh Battery Pack	5
Installing the Antenna	6
Installing the Belt Clip	6
Installing the Hand Strap	6
Getting Acquainted	7
LCD Display	9
Operating Basics	9
Switching Power ON/OFF	9
Adjusting the Volume	9
Selecting a Channel	10
Adjusting the Squelch	10
Placing a Call	10
Receiving a Call	11
Scanning	12
Auxiliary Function	12
Keypad Lock	12
Backlight Function	12
Monitor Function	13
Maintenance	13
Technical Specifications	14
Frequency Setting Mode	15
Servicing Mode	17

NOTICES TO THE USER

THANK YOU

We are grateful you choose **BFDX** for your mobile radio applications. We believe this ease-to-use transceiver will provide dependable communications to keep personnel operating at peak efficiency.

BFDX transceivers incorporate the latest in advanced technology. As a result we believe strongly that you will be pleased with the quality and features of this product.

MODELS COVERED BY THIS MANUAL

BF-5118: UHF FM Transceiver

NOTICES TO THE USER

- ◆ GOVERNMENT LAW PROHIBITS THE OPERATION OF UNLICENSED RADIO TRANSMITTERS WITHIN THE TERRITORIES UNDER GOVERNMENT CONTROL.
- ◆ WHEN THE USER PURCHASES TRANSCEIVERS, HE HAS TO APPLY TO THE WIRELESS MANAGEMENT COMMITTEE FOR THE LICENCE OF THE USING FREQUENCY.
- ◆ REFER SERVICE TO QUALIFIED TECHNICIANS ONLY.

SAFETY: It is important that the operator is aware of and understands hazards common to the operation of any transceiver.

WARNING:

EXPLOSIVE ATMOSPHERES (GASES, DUST, FUMES, etc.)

Turn off your transceiver while taking on fuel, or while parked in gasoline service stations.

PRECAUTIONS

Observe the following precautions to prevent fire, personal injury, and transceiver damage.

- The best work way recommended is that transmitting lasts one minute and receiving four minutes. Longtime transmitting or continuous using in high power mode will cause the back of transceiver heat. To place this transceiver, do not let the back touch the cover of plastic object.
- Do not modify this transceiver for any reason.
- Do not expose the transceiver to long periods of direct sunlight, nor place it close to heating appliances.
- Do not place the transceiver in excessively dusty, humid, and/or wet areas, nor on unstable surfaces.
- If an abnormal odor or smoke is detected coming from the transceiver, switch OFF the power immediately and remove the optional battery pack from the transceiver. Contact your **BFDX** dealer.

UNPACKING AND CHECKING EQUIPMENT

Carefully unpack the transceiver. We recommend that you identify the items listed in the following table. If any items are missing or have been damaged, please immediately contact your **BFDX** dealer.

■ Supplied Accessories

Item	Quantity
Antenna	1
Hand strap	1
Belt clip	1
Screw set	1
User manual	1



Antenna



Hand strap



Belt clip



Screw set

■ Charging the Optional NiMh Battery Pack

The optional battery pack is not charged at the factory. Charge it before use.



CAUTION

- ◆ DO NOT RECHARGE THE BATTERY PACK IF IT IS ALREADY FULLY CHARGED. DOING SO MAY CAUSE THE LIFE OF THE BATTERY PACK TO SHORTEN OR THE BATTERY PACK MAY BE DAMAGED.
- ◆ AFTER RECHARGING THE BATTERY PACK DISCONNECT IT FROM THE CHARGER. IF THE CHARGER POWER IS RESET (TURNED ON AFTER BEING TURNED OFF), RECHARGING WILL START AGAIN AND THE BATTERY PACK WILL BECOME OVER CHARGED.

PREPARATION

Initially charging the battery pack after purchase or extended storage (greater than 2 months) will not bring the battery pack to its normal operating capacity. After repeating the charge/discharge cycle two or three times, the operating capacity will increase to normal.

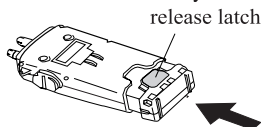
■ Installing/Removing the optional NiMh Battery Pack



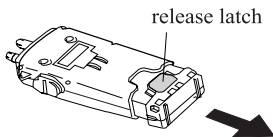
CAUTION

- ◆ DO NOT SHORT THE BATTERY TERMINALS OR DISPOSE OF THE BATTERY BY FIRE.
- ◆ NEVER ATTEMPT TO REMOVE THE CASING FROM THE BATTERY PACK.
- ◆ DO NOT INSTALL THE BATTERY PACK IN DANGEROUS ENVIRONMENTS; SPARK MAY CAUSE EXPLOSION.

1. Insert the battery pack into the bottom of the transceiver and push it until the release latch fully locks.



2. To remove the battery pack, press the release latch at the back of the battery pack and pull out the battery pack.



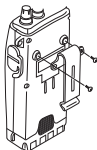
■ **Installing the Antenna**

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



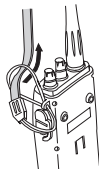
■ **Installing the Belt Clip**

If desired, attach the belt clip using the two supplied 3X4mm screws.

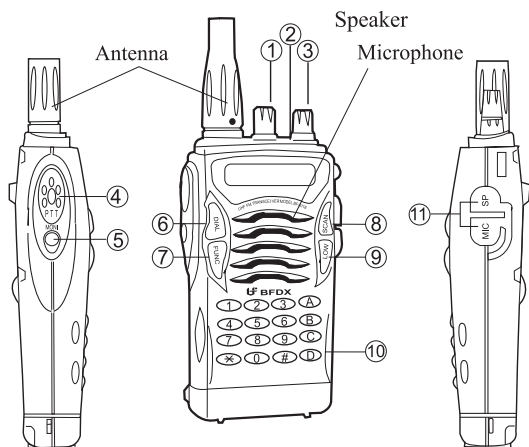


■ **Installing the Hand Strap**

Loop the hand strap through the ring on the right of the transceiver.



GETTING ACQUAINTED



- ① Power switch/Volume control
Turn clockwise to switch ON the transceiver. Rotate to adjust the volume. To switch OFF the transceiver, turn counterclockwise fully.
- ② LED indicator
Lights red while transmitting. Lights green while receiving. Indicator becomes dark when the battery power is low while transmitting.
- ③ SQL control
Turn clockwise to close the background noise. Turn counterclockwise to open the background noise.
It is best to adjust it to critical.
- ④ PTT (Push-to-Talk) switch
Press PTT key to transmit.
- ⑤ MONI (Monitor) key
Press this key to monitor weak signal.
- ⑥ SCAN key
Press this key to start or stop scanning work.
- ⑦ FUNC (Function) key
Press this key to turn on/off the LCD backlight lamp. And this key is also used for other function.
- ⑧ CH+ (Channel increase) key
Press this key to change the channel ascendingly.
- ⑨ CH- (Channel decrease) key
Press this key to change the channel descendingly.
- ⑩ Digit keypad
Set and store the frequency value and channel number by this keypad.
- ⑪ MIC-SP jacks
Connect an optional speaker/microphone here.

OPERATING BASICS

■ LCD DISPLAY



ICON	EXPLANATION
888888.5	Displays the frequency value, channel number, and other function selection.
88	Displays the relevant digit according to the selected function.
.....	Display shows this icon when transmitting, receiving, and monitoring.
F	Display shows this icon when press/hold the [FUNC] key and turn on the power.
★	Display shows this icon after press and hold [*] key for approximate 3 seconds.
DCS	Display shows this icon when the transceiver is in the state of scanning.

Note:

The icons unaccounted above are not used for the moment in this transceiver.

OPERATING BASICS

■ Switching Power ON/OFF

Turn the **Power** switch/**Volume** control clockwise to switch the transceiver ON.

Turn the **Power** switch/**Volume** control counterclockwise to switch the transceiver OFF.

■ Adjusting the Volume

Rotate the **Power** switch/**Volume** control to adjust the volume. Clockwise increases the volume and

counterclockwise decreases it.

Note:

You can press [MONI] key to hear background noise while adjusting the volume level.

■ **Selecting a Channel**

Press [CH+] key to increase the channel number.

Press [CH-] key to decrease the channel number.

■ **Adjusting the Squelch**

The SQL function is designed to keep the speaker quiet when the transceiver does not receive any signal. When open the squelch, you will hear the background noise from speaker.

The quieting electrical level you select decides the location of the SQL ON/OFF. If the level selected is too high, you will not hear the weak signal; if the level selected is too low, the receiving signal will appear in the background noise.

Squelch Adjusting

Turn the SQL control clockwise to increase the quieting electrical level and close the background noise.

Turn the SQL control counterclockwise to decrease the quieting electrical level and open the background noise.

Note:

It is best to adjust it to the critical condition.

■ **Placing a Call**

1. Press the PTT key and speak into the microphone.

- For best sound quality at the receiving station, hold the microphone approximately 3~4cm from your mouth and speak in your normal speaking voice.
 - The LED indicator lights red while pressing the PTT key.
2. Release the PTT key to receive.

■ **Receiving a Call**

When you receive a call on the current active channel, the LED indicator lights green and you can hear this call.

- If the signal is weak and you also set a higher quieting electrical level, maybe you cannot hear this call.

SCANNING

Scanning is used to monitor the signal programmed on channels of the transceiver. The transceiver checks each channel to find if signal appears in state of scanning and scanning will stop on the channel on which there is signal existing.

The transceiver will stay on this active channel until the received signal cease. The transceiver will wait for 5 seconds for the signal to return, otherwise scanning resumes, except during this time it checks and finds new signal (for example: PTT pressing and etc.).

Note:

Scanning can be used only when at least two channels are stored.

Press [SCAN] key to activate scan.

- Scanning begins from the current channel and then scan upward.
- Press [CH+] or [CH-] to change the scanning order.
- The display shows 'DCS'.

Press [SCAN] key or any digit key to deactivate scan.

AUXILIARY FUNCTION

■ Keypad Lock

It is used to prevent accidental entries.

To lock the keypad, press and hold '*' for 3 seconds.

To unlock the keypad, press and hold '*' again for 3 seconds.

■ Backlight Function

Press [FUNC] key to light up the LCD lamp for 5 seconds when the transceiver power is switched on.

Press [FUNC] key again to turn off the lamp.

■ Monitor Function

This feature enables users to hear weak signals, which is hard to be heard in state of general operation at the press of [MONI] key. And also [MONI] key can be used to cooperate with Volume control to adjust volume when no signal exists on the channel selected.

Press [MONI] key to hear background noise. Release [MONI] key to return to normal.

MAINTENANCE

General Information

We have already adjusted the machine to the best situation. In normal it will work well with all the functions as the user's manual states. Without our permission do not adjust or change the inner components by unprofessional person. Otherwise the maintenance warranty will be invalid.

Maintenance

When the machine is sent back to the shop or service center for maintenance, please use the original wrapping materials to pack the transceiver (including antenna, battery, and other accessories) into the primary box, and write a detail report of the trouble with your name, address, telephone number and fax (if possible). Do not only send back the components of the machine, please send back the integrated transceiver.

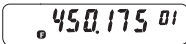
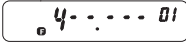
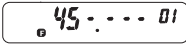

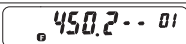
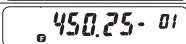
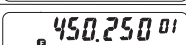
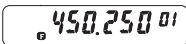
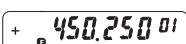
SPECIFICATIONS

BAND	UHF
Frequency Range	350~470 MHz
Power Output	2.5W
Channel Number	100
Communication Range	5-15km(on broad area)
Audio Distortion	$\leq 5\%$
Frequency Stability	5ppm
Max. Freq. Deviation	$\leq \pm 5\text{kHz}$
Spurious Radiation	Better than 60dB
Adjacent-channel Power	Better than 60dB
Sensitivity	Better than 0.2 μV
Squelch Sensitivity	Better than 0.15 μV
Adjacent-channel Selectivity	Better than 60dB
Spurious Response Rejection	Better than 60dB
Intermodulation Rejection	Better than 60dB
Standby Current	40 mA (It is about 15mA in state of power save)
Transmitting Current	1.2A
Operation Voltage	6.0V

FREQUENCY SETTING MODE

In this mode you can enter desired frequency into channels within the allowable frequency range and you can store maximum 100 channels.

Example: Assuming the transceiver is on CH-01 and current frequency on CH-01 is 450.175MHz before switched off. Now you want to set up 450.250MHz as receiving frequency and 450.750MHz as transmitting frequency on this channel.

STEP	OPERATION		DISPLAY
Step 1	Press and hold [FUNC] key and turn the Power switch/ Volume control clockwise to switch the transceiver ON.		
Step 2	Now it is in the state of setting receiving frequency. Please enter '4', '5', '0', '2', '5', '0' in turn A short tone will be heard when you press the key each time.	Enter '4'	
		Enter '5'	
		Enter '0'	
		Enter '2'	
		Enter '5'	
		Enter '0'	
Step 3	Press PTT key and a two tone beep sounds. The receiving frequency value you put into will be stored into the channel shown currently.		
Note: if you want to set same transmitting frequency as receiving frequency, you do not need to follow the following step4, 5, 6.			
Step 4	Press [FUNC] key to switch to setting transmitting frequency mode. The display shows '+' and the receiving frequency value on current channel.		

STEP	OPERATION		DISPLAY
Step 5	Now it is in the state of setting transmitting frequency. Please enter '4', '5', '0', '7', '5', '0' in turn. A short tone will be heard when you press the key each time.	Enter '4'	+ 4 01
		Enter '5'	+ 45 01
		Enter '0'	+ 450 01
		Enter '7'	+ 450.7 . . 01
		Enter '5'	+ 450.75 . 01
		Enter '0'	+ 450.750 01
Step 6	Press PTT key and a two tone beep sounds. The transmitting frequency value you put into will be stored into the channel shown currently.		+ 450.750 01
If you want to delete current channel, press [SCAN] key.		 01
If you want to change the storing channel, please press [CH+] or [CH-]. Example: press [CH+] and CH-02 is clear.		 02

SERVICING MODE

STEP	OPERATION		DISPLAY
Step 1	Press and hold [SCAN] key and turn the Power switch/Volume control clockwise to switch the transceiver ON.	If the frequency set previously is 450.375M	450.375
		If this mode hasn't been used before.
Step 2	Enter your desired frequency. Example: put into 450.250MHz by enter '4', '5', '0', '2', '5', 0 in turn. A short tone will be heard when you press the key each time.	Enter '4'	4... ..
		Enter '5'	45... ..
		Enter '0'	450... ..
		Enter '2'	450.2... ..
		Enter '5'	450.25... ..
		Enter '0'	450.250
Step 3	After you enter 6 digits, you can test all receiving and transmitting specifications under this frequency.		450.250