# **BF-M100** Operation Instruction

Thank you for buying two-way radios manufactured by BFDX for mobile communication, which are believed to be capable of providing you with convenient and reliable communication and producing the best possible results.

BFDX two-way radios adopt advanced technologies and it is believed that quality and function of the product will make you satisfied.

Need-To-Know:

- Operation of a radio transmitter is banned by a government decree within its jurisdiction area without prior permission.
- Apply to the local radio management committee for a frequency before using two-way radios; otherwise, illegal operation will be penalized or arrested.
- Only a professional technician is allowed for maintenance.

.

Safety: It is important that a user keeps good understanding and knowledge of general danger information about two-way radios.

Warning:

Explosive environment (gas, dust or smoke)

Please cut power of the twp-way radio off before filling or parking in the filling station. If your two-way radio is installed in car repeater, do not place fuel tank in the car repeater.

Harm of radio signal

When a person is near the antenna or touches the antenna, do not operate your two-way radio to prevent causing interference of transmission effect of radio signal or related personal injury during transmission of radio signal

If secondary development is performed on the product, please contact BFDX or BFDX vendors.

Precautions

Please follow following precautions to prevent fire, personal injury or damage

to two-way radio:

- Long-term continuous TX may result in heating of the rear of the product. Do not place the rear of the product on the surface of a plastic object.
- Under no circumstances can the product be modified.
- Do not expose the product to the direct sunlight for a long time or place it near a heating unit.
- Do not place the product in an extremely dusty, damp or splashy place or put it on an unstable surface.
- If unusual odor or smoke is sensed from the product, please cut the power source off immediately, and then remove the battery pack or battery case from the product. After this, contact local BFDX vendors for information.

## Unpacking and Inspection

Note: following unpacking descriptions are only for BFDX TELECOM vendors, authorized BFDX service centers or factories.

Please carefully take the product out of the package. It is recommended to check accessories contained in the package according to the following table before discarding its package. If any article is missed or damaged, please immediately submit a claim letter to the freighter.

■ Attached accessories

| Items | No. | Quantity |
|---|---|---|
| DC power cord | | 1 |
| Microphone | | 1 |
| Safety support | | |
| Screw set | | |
| Fuse | | |
| Operation instruction | | |
| Functional instruction | | |

Precautions

Please follow following precautions to prevent fire, personal injury or damage to two-way radio:

When driving, do not try to set the two-way radio; otherwise, it may result in dangerous consequence.

Do not transmit with high power output for a long time; otherwise, the two-way radio may be overheated and damaged.

Unless otherwise specified in the instruction, do no disassemble or modify the two-way radio for any reason.

Do not expose the product to the direct sunlight for a long time or place it near a heating unit.

If unusual odor or smoke is sensed from the product, please cut the power source off immediately, and contact local BFDX vendors for information.

Do not use non- BFDX manufactured optional parts.

Note:

The two-way radio is designed to use 13.8V DC (±15%) power. Do not use 24V power supply for the unit. Check battery polarity and voltage in the vehicle before installing it to the vehicle. Only BFDX provided DC power cord can be used.

Warning

Do not cut off or remove the fuse seat on the DC power cord. Wrong connection or inrush current may result in firing of the device due to smoke.

For the sake of passengers' safety, use safety support and screw set provided by the company to install the two-way radio safely.

If electronic parts in the vehicle are not protected or isolated by using proper radio RF energy before transmission, these parts may be damaged. If your vehicle is provided with these parts, please consult with your vehicle vendor and ask them to check if these parts are necessary to be protected before transmission.

BF-M100 functional descriptions

- General Setting

1）Device Name

- Device Name: enable a user to name the two-way radio he or she uses, such as Zhang San.

  Set an alias of the two-way radio. When turning it on, it displays welcome message. A user can input 8 characters at most. Valid characters include alphanumeric characteristics, space and special characters. Both Chinese and English are supported.

- 2）Programming Password

- This function is used to protect parameters set for the two-way radio from being modified at randomly. If a user wants to change parameters, a password is required before programming. This password is a pure 8-digit number. It is null by default. (Note: a user shall remember this programming password if available. Forgetting this password will result in failure to program the two-way radio. To retrieve the password, it shall be returned to the factory for resetting. A user shall pay due attention to this.)

  3）ID Device ID

  The valid set bit for device ID contains 7 digits. Decoding is possible when device ID matches calling ID of a single call (RX). Each device shall have a unique ID to dial the number of the other party when realizing point-to-point communication (including single call and SMS), such as 0000001, 0000002, ……0000099.

- 4）Group ID

  The valid set bit for group ID contains 7 digits. Decoding is possible when group ID matches calling ID of a group call (RX).

  Used to realize communication of the local group or cross-group calling. For example, if a user is in group 9000001, the local group defines the PTT as the group ID of the local group, which is directly used for communicating with members in the local group. For cross-group calling, key 1, for example, can be programmed as a manually-dialed shortcut key and communication is realized by dialing the group ID of the other party on the shortcut key, such as dialing group ID of 9000005 to communicate with group ID of 9000005. Group ID is started with 7 with

total 7 digits.

5)Repeater ID

The valid set bit for Repeater ID contains 7 digits. Decoding is possible when Repeater ID matches repeater system ID (TX).

If a user is to communicate with the other party via repeater, connection to the repeater can be realized only when the Repeater ID in the general setting is same as Repeater ID to be connected, such as 8010101. Repeater ID is started with 8 with total 7 digits.

6）Access Code:

- When access authentication is enabled for the repeater, connection to the repeater is possible only when this access code is same as that of the repeater.

7）**Language environment:**

- The handset displays the language interface, where you can select a language to be used.

8)Duration of TX Preamble(ms)

- Preamble is a bit string added before data message or control message (text message transfer, position message transfer, registry, two-way radio detection, single-call, etc) before transmission. This preamble increases SMS length to reduce probability of missing message for RX two-way radio. The duration of TX preamble is set to be the duration of preamble. When scanning number increases for the target two-way radio, increase of the duration of preamble is also required accordingly. If the scanning two-way radio loses data message often, increase this value in all the TX two-way radios. Nevertheless, a higher preamble will occupy the channel for a longer time. Thus, increase of the duration of TX preamble (0-8640 ms) can increase the success rate of receiving data when other two-way radios are scanning, but data volume able to be transmitted in the channel will be reduced.

9)Suspend Time of Talkaround Group Calling

- It is used to set the duration the two-way radio uses previously received or previously transmitted digital group ID to answer received calls or continue transmitted talkaround group calling. After the timer of talkaround group calling becomes invalid, the two-way radio uses the TX

address book (digital group) specified by the channel for transmission. The duration range from 0 to 7000 ms. It is 2000 ms by default. If the repeater is used, change this duration to 4000 ms to prevent frequent connection applications. If communication is realized via the repeater, please manually disconnect it after call to release repeater resources.

- 10）Suspension time of talkaround single call (ms)
  - It is used to set the duration the two-way radio keeps talkaround single call setting after a user presses the (PTT) key. This can prevent re-setting the call each time a user presses PTT for transmission. During this, the channel in fact is unoccupied, so other two-way radios are still capable of transmission. After the suspension timer becomes invalid, the two-way radio uses the TX address book specified by the channel for transmission. The duration ranges from 0 to 7000 ms. It is 2000 ms by default. If the repeater is used, change this duration to 4000 ms to prevent frequent connection applications. If communication is realized via the repeater, please manually disconnect it after call to release repeater resources.

11）Access Authentication

- The operating mode of a digital two-way radio includes normal mode and safe mode. This setting is only effective in repeater mode.
  1. In normal mode, a handset only needs to send a connection signal to the repeater. After successful connection, the repeater will enable a channel. After this, the handset can communicate with other handsets to be communicated until the session is manually disconnected or interrupted for timeout to release the repeater. Quick access communication of a handset can be realized via this mode.
  2. In safe mode, handset A sends a linking signal to be connected with the repeater first, which will then send the linking signal to handset B. After connection, the repeater enables a repeater channel and responds with a confirmation signal to handset A. Handset A can be communicated with handset B normally.

12）Battery-save Mode

- If this feature is enabled, an unoccupied two way radio will automatically enter the battery save mode, i.e. making certain features in standby mode. After a certain time or when a user presses any key, the two-way radio returns normal operation and check if any incoming call in the channel. If it is not detected, the two-way radio will return to battery save mode, which will not only extend battery life (depending on chemical property of the battery and its application condition), but also delay response time.
- It shall be noted that if this feature is enabled, for TX two-way radio, after the PTT key is depressed, a call will be established with a slight time lag (within ms). For RX two-way radio, it has lower possibility of correct synchronization in battery save mode, which may make delay more serious, thus resulting in loss of first-second message transmitted by some audios when the two-way radio has poor RF. Nevertheless, in a good RF coverage, this will not happen, but for extension of battery life, the delay is negligible. Therefore, it is recommended to enable battery-save mode for all two-way radios.

13）LED All LED Disabled

- When the two-way radio is started and used, turn all indicators off except for TX red indicator and RX green indicator. Irrespective of backlight setting, all indicators are disabled (including backlight and start indicator).

14） DPMR Mode 3

- The two-way radio is allowed to be switched to and use Mode 3 only after multi-channel output mode is checked.

15）Always priority call

- This feature is enabled only in multi-channel mode. It is used to set a device always capable of implementing a priority call that always eliminates all channels to realize communication via signal of the priority call irrespective of whether the channel of multi-channel system is used.

16）： Frequency display:

This feature enables a user to choose to close or display frequency on the LCD of the two-way radio.

17）**Squelch Level:**

It is divided into 5 levels and it is level 1 by default. This feature is used to increase squelch level when surroundings around a user has strong interference to prevent interfering the two-way radio from surroundings. However, if it is set too high, the capability of the two-way radio receiving weak signals may be reduced. Thus, a user shall select it with due care.

18）**Voice indication**

- Channel unoccupied indication: if this feature is enabled, you will hear a prompt tone after a voice call ends. You will also hear a prompt tone when the voice call in the current channel is interrupted (for example, an incoming impolite call from the two-way radio from the third party or sending an emergency alarm). A voice call ends when the calling party releases the PTT key irrespective of suspension time. This feature will prompt the receiver with when to answer it before a voice call from the other party ends to ensure a smooth talk.
- Call allowed indication: you will hear this prompt tone by pressing the PTT key. After this, the two-way radio can transmit it in the channel. The purpose of this is to prompt a user to start talking after the two-way radio sounds the prompt tone.
- RX battery low prompt interval (s): when the two-way radio receives a call or is unoccupied, if it reaches the battery low threshold, you will hear a battery low prompt tone. RX battery low prompt tone sounds an alarm in a set interval to prompt a user to charge it. Allowable range is from 0 to 635 s.

19）**Remote controlling key**

A password is required to select device remote destroy decoding, remote monitor decoding and emergency monitor decoding. After a password is input and these three features are checked, the two-way radio can use these three features. A correct password is required to enable these features. A remote controlling key can be composed of case-sensitive English letters and numbers.

20）Device remote destroy decoding: If this feature is checked, the two-way radio with the function of remote destroy or activation can be remotely destroyed or activated. TX and RX are disabled for a remotely destroyed

two-way radio. The purpose is that if the two-way radio is lost, remotely destroy it to disable TX and RX functions to prevent information leakage (a key is required to enable it).

21）Remote monitor decoding: If this feature is checked, the two-way radio with the function of remote monitor can realize remote monitor. When this feature is enabled, the microphone is ON and voice from the two-way radio will be sent to the other party via the microphone. This feature is enabled in a specific condition to facilitate monitoring message from the other party (a key is required to enable it).

22）

Emergency remote monitor decoding: If this feature is checked, the two-way radio with the function of remote monitor can perform remote monitor over an alarm of the emergency system irrespective of whether the remote monitor decoding is checked. This feature allows a user to monitor an emergency alarm from the other party to understand his (her) dangerous environment and provide a rescue (a key is required to enable it).

23）Duration of remote monitor (s): this feature is to set the time to open the microphone after the remote monitor is enabled. It is 10 s by default.

■ Voice prompt

1）All mute:

- When the two-way radio is enabled and used, turn off all prompt tones. Number reporting and prompt tones are disabled irrespective of number reporting or other prompt tone is set. Prompt tones are enabled by default 2).

2）Increasing prompt tone

- The two-way radio increases the volume of repeated prompt tone (repeated tone of an incoming call, for example). The volume of the prompt tone increase from the predefined lowest point in a specific step till it reaches the highest point (a LCD digital two-way radio has this feature).

3）Channel unoccupied indication

- If this feature is enabled, you will hear a prompt tone after a voice call ends. You will also hear a prompt tone when the voice call in the current channel is interrupted (for example, an incoming impolite call from the

two-way radio from the third party or sending an emergency alarm). A voice call ends when the calling party releases the PTT key irrespective of suspension time. This feature will prompt the receiver with when to answer it before a voice call from the other party ends to ensure a smooth talk.

- 4） Call allowed indication
- The two-way radio sounds this prompt tone after the PTT key is pressed. After this, the two-way radio can transmit it in the channel. The purpose is to prompt a user with successful connection for communication.
- 5）Volume offset
- Set the volume offset value of a prompt tone. Setting of this feature will result in the volume of the prompt tone higher or lower than or equal to audio volume controlled by the volume knob (for digital LCD two-way radio).
- RX battery low prompt interval (s)
- When the two-way radio receives a call or is unoccupied, if it reaches the battery low threshold, you will hear a battery low prompt tone. RX battery low prompt tone sounds an alarm in a set interval to prompt a user to charge it. Allowable range is from 0 to 635 s.

■ Menu Definitions

一、 Menu Suspension Time

- Set the time the two-way radio keeps in menu mode. After this, the two-way radio returns to main screen. If this time is set to “0”, the two-way radio always keeps in this mode which is its built-in feature. The time ranges from 0- 30 s with increment or decrement of 1.
- SMS
- Enable a user to access “SMS” feature via menu or key. A user can check inbox, edit SMS, and send SMS or quick SMS.

■ Address book

一、 Call prompt

- Enable a user to send out a call prompt via menu. A call prompt allows a user to prompt other users to request them (receiver) to call back (calling party) when communication is available. A call prompt can be

received only when a channel is available. In digital mode, a user can only send out a call prompt to a single two-way radio.

- Editing
- Enable a user to edit alphanumeric characters on the screen. A user can add new items to the contact list and edit existing items in the contact list.

二、 Manual dialing

- Enable a user to access “Manual Dialing” function via menu. Even though target ID is not in the address book, a user can input target ID to initiate a call or send a SMS via keyboard by “Manual Dialing” (such as a single call or call prompt).

三、 Device detection

- Enable a user to send out “two-way radio detection” request via menu. “Two-way radio detection” allows a user to determine whether the two-way radio in the system is active without displaying any indicator to the user.

四、 Remote monitor

- Enable a user to send out a “remote monitor” request to target two-way radio via menu. If the request is sent successfully, the microphone and transmitter of the target two-way radio will be activated for remote monitor.

五、 Remote destroy

- Enable a user to send out a “remote destroy” command to the target two-way radio via menu. If the request is sent successfully, all user interfaces will be disabled by the target two-way radio (for example, all indicators including backlight, prompt tones and all user inputs including PPT, excluding “Volume/ON/OFF” knob on the handset and “Power ON/OFF” on the onboard set). An emergency alarm or data received by the two-way radio or external device will be ignored to make voice received mute and the function of transmitting data or command is disabled. If the two-way radio is lost or stolen, enable this feature to disable the two-way radio. Nevertheless, the two-way radio will continue to monitor air interface to receive “activation” command.

六、 Activation

- Enable a user to send out “Activation” command to the target two-way radio. “Activation” command is used to enable the disabled target two-way radio.

■ Legends

| | |
|---|---|
| H/L | High power/low power |
| E2 | Repeater mode |
| E3 | Multi-channel mode |
|  | Keyboard locked |
|  | Access authentication |
|  | Missed calls |
|  | Unread SMS |
|  | SMS full |
|  | Speaker ON |
|  | Speaker OFF |
|  | Signal strength |
|  | Voice sign |

■ Scan

一、 Scan ON/OFF

- Enable a user to switch ON or OFF scan for the current channel via menu. This feature allows the two-way radio to search the scan list connected to the current channel to find available channels for receiving or voicing.

二、 Editing list

- Enable a user to edit the scan list via menu. “Editing List” allows a user to execute some operations on the scan list, such as viewing the scan list, changing priority of scan members, adding new items to the scan list or delete items from the scan list. Do not create a new scan list or delete existing scan list to or from the two-way radio.

■ Call Log

一、 Missed calls

- Enable a user to track 10 last missed or failed incoming calls. A user can access the call log via menu. In addition, this log provides a user with a shortcut for initiating a call.

二、 Answered calls

- Enable a user to track 10 last answered incoming calls. A user can access the call log via menu. In addition, this log provides a user with a shortcut for initiating a call.

三、 Outgoing calls

- Enable a user to track 10 last outgoing calls initiated. Redialing function is provided and a user can access the call log via menu. In addition, this log provides a user with a shortcut for initiating a call.

■ Setting

一、 Language environment

- Both English and Chinese are supported.

二、 Talk-around

- Enable a user to set the two-way radio in talk-around mode via menu or keys. (The communication object shall be used within the communication distance without use of a repeater).
- 1）Communicate with the other party for a long time to prevent making the repeater busy to invite the other party for common-frequency communication in talk-around mode.
- 2）Communicate beyond the effective coverage area of the repeater.
- Immediately eliminate it after communication; otherwise, communication of other members in the network will fail.

三、 Tone/prompt

- Enable a user to turn on or off sounds and prompt tones via menu.

四、 TX power

- Enable a user to adjust the TX power of the two-way radio higher or lower via menu.

五、 Backlight

- Enable a user to change backlight setting via menu or keys, i.e. OFF, AUTO, and ON.

六、 Boot interface

- Enable a user to enable or disable the Boot interface via menu.

七、 **Keyboard lock**

- Enable a user to turn on or off keyboard lock via menu.

八、 **LED indicator**

- Enable a user to turn on or off LED indicators via menu.

■ Signaling system

The signaling system is ignorable.

■ Key definitions

1) Duration of long press (ms)

- Set the duration of pressing and holding a key to define the key as a long-press key, ranging from 250 to 3750 ms. The key sounds a prompt tone after pressing takes effective and it also sounds a prompt tone after timeout.

◆ Key functions

1. All prompt tones ON/OFF: enable a user to enable or disable all prompt tones.
2. Battery capacity prompt: enable a user to check charging status via LED (ignorable).
3. Emergency mode ON/OFF: enable a user to establish or terminate an emergency call.
4. High/lower power: enable a user to switch between high power and low power.
5. Monitor: enable a user to enable or disable monitor function. A user can enable the monitor function to monitor the channel. In digital mode, a user can only check if there is any activity before transmission. If yes, the two-way radio will transmit the voice, but not to ongoing actual voice or data communication.
6. Permanent monitor: it has the same function as that of monitor (only for a handset), i.e. allowing a user to monitor the channel to ensure that there is no activity before transmission. The difference is that once permanent monitor is enabled, the two-way radio will be kept in this mode before pressing this key to disable this function.
7. Unused channel deletion: enable a user to temporarily delete unnecessary channels from the scan list (excluding selected channels). For example, when the two-way radio is powered off and on again, deleted unused channels will resume in the scan list.

8. Manual dialing: enable a user to flexibly choose to dial any individual number unavailable in the address book (only for digital model).
9. Address book: enable a user to access contact list (depending on the current channel) for conversation or enabling a random conversation function.
10. Single-key call 1: enable a user to perform digital group call, digital single call, call prompt or send quick SMS.
11. Single-key call 2: same as single-key call 1.
12. Single-key call 3: same as single-key call 1.
13. Single-key call 4: same as single-key call 1.
14. Single-key call 5: same as single-key call 1.
15. Single-key call 6: same as single-key call 1.
16. Repeater/talk-around: enable a handset to connect or communicate via the repeater or enable talk-around communication beyond the repeater.
17. Unset: not assign any function to programmable keys.
18. Area switching: enable a user to switch between two areas. Note: each area has 10 channels. It has two areas totally.
19. Scan ON/OFF: enable a user to turn ON or OFF scan feature.
20. Access authentication ON/OFF: enable a user to operate in normal mode and safe mode.
21. Disconnection: enable a user to disconnect from the relay.
    Note: above key functions can be realized by long or short press on keys.

◆ Keys

1）Short press of orange keys

- Enable a user to change short press of orange keys. It has the same function as above.

2）Long press of orange keys

- Enable a user to change long press of orange keys. It has the same

function as above.

3）Short press of key 1

- Enable a user to change short press of key 1. It has the same function as above.

4） Long press of key 1

- Enable a user to change long press of key 1. It has the same function as above.

5）Short press of key 2

- Enable a user to change short press of key 2. It has the same function as above.

6）Long press of key 2

- Enable a user to change long press of key 2. It has the same function as above.

- Short press of key 3

- Enable a user to change short press of key 3. It has the same function as above.

- Long press of key 3

- Enable a user to change long press of key 3. It has the same function as above.

◆ Single-key call

- Enable a user to press the key once to establish online group call, single call and call prompt. After this, except for talk-around group call, you will hear a prompt tone from the call bell, and then press PTT for conversation. If the single-key is set as a short press key, quick SMS will be sent by pressing the key once. Single-key call can be assigned to a short press or long press programmable key.

- 6 lines can be used to configure single-key call, with each line containing a parameter used for a single-key call. Then, each line can be assigned to a short press or long press programmable key.
- Configure a single-key call and then assign to programmable keys;

1.1. Select a call member from the “call object” column.

2. Select a call type from the “call type” column.

3. If “SMS” is selected, a user can select SMS content from the “SMS” column.

1）Call object

- Enable a user to select a call member from all available digital call types in the “address book” folder (i.e. single call, group call and repeater call, except for all call).

2）Call type

- Enable a user to select a call type from selected call members in the “call object” column.

1. SMS

- Enable a user to select quick SMS. These SMS are selected from SMS setting.

◆ SMS

- A user can input 140 characters at most. Valid characters include alphanumeric characters, space and special characters. A user can send SMS by setting short press or long press programmable key (SMS) or entering SMS menu.
- This feature can be used to predefine SMS. These SMS (also known as quick SMS) are common ones repeatedly sent and stored in the two-way radio. A user does not have to input same contents repeatedly. A user can add 10 SMS to the “predefined SMS” list at most. For digital

LCD two-way radios, a user can access the SMS feature and send SMS by accessing SMS menu or assigning long press or short press to SMS programmable keys. For non-digital LCD two-way radios, a user can only assign long press or short press to single-key call to realize this. This model has no menu to receive or display incoming SMS, nor a menu to select quick SMS.

- Emergency system

  - A digital emergency system is a signaling protocol used for communication for digital two-way radios in emergency. 4 groups can be created at most.

  1) Add an alarm
  1. Right click “Emergency System” folder in the tree view.
  2. Select “Add **(A)** -> Alarm (1)”
  2) Delete an alarm
  1. Right click an alarm in the tree view.
  2. Select “Delete **(D)**”

- Alarm Type
  - An alarm is a non-voice signal capable of triggering prompt or indication for the other two-way radio. This feature is to specify the alarm behavior of the two-way radio when a user presses the emergency alarm key.

  1) Disable: the two-way radio is disabled for transmitting an alarm signal.
  2) General: The two-way radio sends an alarm signal and provides audio indication that it is in emergency mode.
  3) Quiesce: the two-way radio sends an alarm signal, but not to provide audio indication that it is in emergency mode. In addition, it will not voice any received audio.
  4) Quiesce with voice: the two-way radio sends an alarm signal, but not to provide audio indication that it is in emergency mode. Then, it will voice legal channel activities.

  - Mode:

  1) Emergency alarm: the two-way radio sends an emergency alarm and

then exits from emergency mode. This alarm is a non-voice signal capable of triggering prompt or indication for the other two-way radio.

2) Emergency alarm and call: the two-way radio will send an emergency alarm and an emergency call can be transmitted by press the PTT key.

3)

4) Emergency alarm and voice: this option will enable Hot Mic to allow remote controlling of Hot Mic related functions, i.e. Hot Mic duration. The two-way radio will send an emergency alarm and activate microphone for an emergency call. A user does not have to press the PTT key to transmit voice.

◆ **Response channel**

- A channel is used for digital emergency alarm or voice. Any digital channel can be set to a response channel, including a channel specified by the channel selector.

◆ **Impolite re-try**

- Impolite transmission refers to transmission performed when there is an activity in the current channel. The two-way radio will try impolite transmission several times to obtain confirmation and then try polite transmission several times. This feature is to set number of times trying impolite transmission of an emergency alarm. (1-15 times)

- **Polite retry**
- Polite transmission refers to transmission performed when there is no activity in the current channel. The two-way radio will try impolite transmission several times to obtain confirmation and then try polite transmission several times. This feature is to set number of times trying polite transmission of an emergency alarm with increment of 1. (0 - ceaseless).

◆ **Mic activation time**

- If emergency alarm and voice is selected, after the two-way radio transmits an emergency alarm, the Hot Mic will be activated and the

two-way radio will automatically start to transmit voice in specified Hot Mic duration. During this period, a user does not have to press the PTT key to transmit voice. After the duration elapses, the two-way radio stops automatically. A call initiated during this duration is an emergency call.

- Address book
  - Call type

1. Single call (P): a call sent by a two-way radio to the other two-way radio.
2. Group call (G): a call sent by a two-way radio to a group of two-way radios.
3. All call (A): a one-way call sent by a two-way radio to all two-way radios in the channel. All call will not cross different time slots or channels in the system for communication. Only the two-way radio used by an administrator is configured with the capability of starting all call. All other two-way radios are set to monitor all call transmission by default.
4. Repeater call (R): a call sent to the repeater by a two-way radio.

- Channel
  - A two-way radio supports 50 areas and each area supports 16 channels with totally 160 channels supported.

1） Add an area

1. Right click “Channel” folder in the view.
2. **Select “Add (A)”.**
3. Assign a unique name for the area.

2）Add a channel in an area

1. Right click an area.
2. Select “Add (A)” to create a digital channel.
3. Assign a unique name for the channel.

3）Delete an area

1. Right click “Area” fold in the view.
2. Select “Delete (D)”.
3. The area is deleted.

4）Delete an channel in an area

1. Right click a specific channel in the view.
2. Select “Delete (D)”.
3. The channel is deleted.

◆ Channel features

1）Scan list

◆ Link the scan list to the channel. All members will be scanned in the list during scanning. A user can select any available scan list (including **auto scan**). If the channel scans no scan list, pressing the scan switch will prompt a user with an invalid key tone.

2） Auto scan

◆ Enable a two-way radio to start auto scan when a user selects the current channel. If auto scan is disabled, a user can still call scan feature by long press or short press of programmable key (scan ON/OFF) or Scan in the scan menu; this option can be set only by programming operations.

3） Color code

◆ This feature enables a color code to be assigned to a specified channel. A color code for each channel may be same or different. Each repeater can only have one color code. Different color codes are used to identify different systems. Switch channels by using different color codes. This feature enables a two-way radio to roam between different systems. A two-way radio uses different color codes to scan different channels. It ranges from 1 to 15.

4） Talk-around allowed

◆ During transmission, use RX parameters instead of TX parameters. The feature enables adjacent two-way radios to realize communication without a repeater, especially for a situation that two-way radios are adjacent and a repeater is beyond the range. The feature can switch between repeater and talk-around modes by short press or long press of programmable key (repeater/talk around) or talk around (Setting menu).

For a digital two-way radio, this feature shall be enabled and TX frequency is different from that of RX.

5）RX only

- Configure a channel to RX only and disable any TX feature. All RX features for this channel also shall be disabled.

6） 偏移 (MHz)Offset (MHz)

- Create TX frequency. The method is to add offset value to RX frequency, which can ensure consistence of offset of the two-way radio and that of the repeater. A user can input 14 numbers or characters at most, including decimal point and minus sign. Click “cloning” key to set the TX terminal.

7) Mapping

- Add offset to RX frequency to obtain TX frequency.

8） (MHz) TX frequency (MHz)

- Set the signal TX frequency of the current channel in MHz.

9）Default communication address

- A call initiated in the channel when pressing PTT key. If “null” is selected, it will stop initiating a call in the channel and prompt a user with an invalid call prompt tone.

10）Emergency system

- Link all available digital emergency alarm systems to the channel for use in emergency. If “null” is selected, a user is prohibited to transmit an emergency call in the channel.

**Note:**

- Configure the digital emergency alarm system in the “signaling system” folder before selecting; otherwise, the default value is used (null).
- Disable “RX only” function.

11）TX power

- Set TX power level of the two-way radio in the channel. A user can switch between high power and low power by long press or short press of programmable keys (High/low power) or power (“Setting” menu).

Notes:

High: used when a stronger signal is required to increase TX distance. Low: used for short range communication and preventing TX into other geographical groups.

12）TX Timeout timer(s)

- TX timeout timer (TOT) is the time the two-way radio continues transmission before transmission automatically ends. This feature can ensure that a channel will not be exclusively occupied by any one of two-way radios. For a busy channel, a user can set shorter TX timeout. It ranges from 15 to 495 s.

13） **TOT delay (s)**

Set the time after the TX TOT fails and before a user is allowed for transmission again the two-way radio waits in the channel. It ranges from 0 to 255 s.

14） Permission condition

- Define when to allow transmitting voice or data in the channel. This feature can prevent the two-way radio transmitting in a used channel. If the two-way radio has different TX and RX frequencies, it monitors activity of RX frequency only. If there is no activity in RX frequency, even though the TX frequency is used, the two-way radio will still allow a user to use this TX frequency for transmission.

1. Always: the two-way radio always transmits signals when pressing PTT key.
2. Channel unoccupied: before transmission, the two-way radio will check if there is an unoccupied channel. If the channel has voice, it will prompt a user with prompt tone if the transmission is disabled.
3. Available color code: before allowing transmission, the two-way radio will check if a specified color code is not used. If it is the same as available color code for receiving, the transmission is disabled.

◆ Scan

- Scan list is to monitor the subgroup of a channel transmitting activity. After the list is linked to the channel (Channel->scan list), the two-way radio will search the list during scanning to obtain legal channels for receiving or voicing, which is also known as channel scanning. A user can create 32 scan groups at most, and each scan group contains 15 members at most.

1） Add a scan group

1. Right click “Scan” folder in the tree view.
2. **Select “Add (A)”**
3. Assign a unique name to the group.

1） Delete a scan group

1. Right click a specific scan list in the tree view.
2. Select “Delete (D)”

2） Suspension time (s)

- The time the two-way radio retains in the member channel in the scan list after setting channel activity. It ranges from 0.5s to 10 s.

3） Priority prompt tone

- It is prompt tone from the two-way radio to the priority channel during scanning.

◆ Feature of scan group

- Select a channel to be scanned from available channels to add it to included channel. Transmission activity is performed in the channel to be scanned that has been already added in included channel. A channel added to the included channel can be deleted from the scan group. 15 channels (including selected channel) can be added to the included channel at most.

1). Add a scan group

1. Right click “Scan” folder in the tree view.
2. Select “Add (A)”.
3. Assign a unique name to the list.

2). Delete a scan group

1. Right click a specific scan group in the tree view.
2. Select “Delete (D)”.

3）Add a scanning member

1. Select a channel to be added from available channels.
2. Click “Add (A)” key.

4） Delete a scanning member

1. Select a channel to be deleted from available channels.
2. Click Remove (R) key.

5) Transpond

- Define whether a user can perform transmission in his (her) channel during scanning. If this feature is disabled, the two-way radio will perform transmission in the channel specified by “specified TX channel” function.

6）Top priority channel

To switch the top priority channel in included channels, it is required to set the channel to be scanned to the top priority channel, but previously set top priority channel (if any) will be automatically removed by the system. During scanning, up to 50% scanning is performed in the top priority channel.

7）Second priority channel

- During scanning, up to 50% of scanning activities are performed in the top priority channel. If there is a second priority channel, the scanning activity in the top priority channel is reduced from 50% to 25%. If the two-way radio detects an activity in the top priority channel, it will stop current transmission and sounding in the top priority channel.

8） TX channel

- During scanning, if a user presses this key, the two-way radio will determine which channel is used for transmission. If “Transpond” option is disabled, this feature also defines that when the two-way

radio stops scanning to sound legal members in the scan list, if a user presses PTT, the two-way radio will perform transmission in the TX channel. Any channel can be used as a specified TX channel. In addition, a user can select a selected channel.

9） Priority sampling time (ms)

- The time to wait before the two-way radio scans the priority channel when setting a call. If a call is initiated in the top priority channel, scanning will not be performed. The two-way radio will temporarily make current transmission mute when scanning the priority channel. Increase of this interval can reduce check times to improve the quality of currently-transmitted audio, but this also increases the possibility of the two-way radio missing an activity in the priority channel.

**BF-M100 Operations**

Operations followed in the instruction

| Instruction | Operation |
|---|---|
| Press [key] | Press the key for a short time |
| Press [key] (1 s or more) | Press the key for 1 s or more |
| Press F1 key | Press F1 key to access functional menu interface |
| Press volume key [∧] | Adjust volume (increase), or access functional menu, and press volume [∧] to confirm it. |
| Press volume key [∨] | Adjust volume (decrease), or access functional menu, and press volume [∨] to confirm it. |
| Press channel selector key [≪] | Press the key to select a channel or access the functional menu. Press right channel selector key [≪] to select menu function. |

| | |
|---|---|
| Press channel selector key [≽] | Press the key to select a channel or access the functional menu. Press right channel selector key [≽] to select menu function. |

Installing the two-way radio

On-board installation

Select a safe and convenient location in the vehicle to try to reduce possible blockage or harm to passengers and yourself when the vehicle is moving. Try to select a well-ventilated location and avoid direct sunlight. Fix the mounting bracket to the vehicle with provided self-tapping screw.

Connecting power cord

Use a full 12V battery for a vehicle. If the two-way radio has battery low, the TX output power is significantly reduced or alarm tone is sounded during transmission. Do not connect the two-way radio to 24V battery.

After the power cord is installed in place, twine heat resistant tapes on the fuse seat to keep it moisture proof and wrap the whole power cord. To prevent short circuit, please disconnect negative terminal of battery before connecting the two-way radio.

Installing base station

To use the two-way radio as a fixed radio station, a separately purchased standalone 13.8V DC power supply is required, with continuous current capacity over 15A.

Note: before completing all connections, do not connect this DC power supply to AC power socket.

Check that the two-way radio and DC power are disconnected.

Connect DC power cord to steady-voltage DC power supply and check that polarity is correct (red: anode, black: cathode)

Connect DC power cord to the two-way radio

Forcedly press the power socket together until the locating plate locks in place.

Note: It is strongly recommended to use the dedicated power supply provided by the company to make full use of the BFDX two-way radios.

Replacing fuse

If the fuse is blown, check the reason and eliminate faults. After this, replace with a new fuse. If the newly installed fuse is blown, please disconnect the power cord and contact local BFDX vendors or BFDX service center for online help.

Connecting antenna

Install and adjust the antenna before operation. Whether it can be installed successfully depends on if antenna type and its installation are correct. If a proper antenna is selected and installed correctly, the two-way radio will provide the best effect.

Use a low-loss coaxial feeder with 50Ω of characteristic impedance to match the input impedance of the two-way radio. If the antenna is connected to the two-way radio with a feeder without 50Ω of characteristic impedance, the performance of the antenna subsystem will be reduced and surrounding radio and television receivers, radio receivers and other electronic devices will be interfered, resulting in damage to the two-way radio.

Notes:

Transmission before connecting an antenna or other matching load may damage to the two-way radio. Be sure to connect the antenna to the two-way radio before transmission.

All fixed radio stations shall be provided with lightning arresters to prevent fire disasters or damage to the two-way radio due to lightning stroke.

Operation panel

Power switch key

Volume selector key

Channel selector key

Function menu key F1

Programmable function key F2 (definition key 1)

Programmable function key F3 (definition key 2)

Programmable function key F4 (definition key 3)

Programmable function key F5 (definition key 4)

Back panel

ANT

Connect the external antenna to this terminal. Before transmission test, connect to dummy load instead of the antenna. The antenna system or the dummy load shall have 50Ω of impedance.

DC 13.8V

13.8 V DC power cord

BNC

Not used so far.

PC terminal

The terminal is used to connect PC. Applicable for BF-M100 dedicated programming line, connecting to USB terminal.

Microphone (coding microphone)

PTT switch

Press the switch to transmit a talk via the microphone.

Dial keys

Press these keys to call ID.

A、B、C、D

Keys for editable functions

Defined keys

CALL key:

VFO: confirmation key, consistent with two-way radio [∧] key

MR key: back key, consistent with two-way radio [∨] key

PF key: deletion key.

UP/DWN

Consistent with two-way radio [≽] [≼] keys.

Basic operations

Press power switch to switch on/off the two-way radio and boot information will display on the screen for a short time.

Adjust volume

On the channel display interface, press [∧][∨] volume keys on the left of the main panel to adjust the volume freely, ranging from level 1 to level 16.

Select a channel

On the channel display interface, press [≽][≼] on the left of the main panel to select a channel to be used.

Make a call

2) Press the PTT switch and talk to the microphone, and the red indicator is ON:

1） Keep the microphone about 5-10 cm away from the sound source and use a normal tone to allow the receiving radio to obtain the optimal tone quality.

2） The red LED indicator is ON when pressing the PTT switch.

3） Display call type and call number when pressing the PTT switch.

3) Release the PTT switch for receiving.

Receiving

When the channel you are using is called, the green LED indicator is ON, and the call can be heard only if a correct number is received. After receiving the signal, the two-way radio can display the receiving frequency, calling type and number.

Function list mode

Many functions of the two-way radio are set via the function list. If a user is familiar with the function list, he or she will in a good place to operate the two-way radio.

功能表存取

Access of function list

Press F1 key to access the function list, and setting category and name display on the screen.

Press left and right [≪][≫] keys to select the desired function option. Press [∧] to set current function list and press [∨] to cancel or exit from the function list and return to the previous menu.

Function setting table

| Display | Description | Icon |
|---|---|---|
| Address book | Record preset communication numbers | |

| | | |
|---|---|---|
| Scan | Scan a channel added to the scan list | |
| Area | Select a channel of an already-set area | |
| SMS | Edit SMS | |
| Call log | View call log | |
| Setting | Set information of the two-way radio | |

| Display | Description | Setting |
|---|---|---|
| Call 1 | The first call set by the two-way radio | |
| Number | A call ID responding to call* | Display a 7-digit number |
| New contact | Establish a new call | Able to set a new single call or group call |
| Input a number | Input and store a new call ID | Input a group of 7-digit numbers starting with 0, 8 and 9 |
| Input a name | Input and store name of a new contact | Input random letters, numbers or texts |
| Manual dialing | Input ID to be called directly on the display | |

**Address Book Setting**

Programming software

Left click “Menu Definition” in the tree view to display “Menu Definition” interface, where a user can check “Call Prompt” – “Editing” at the bottom of “Address Book” option.

1、 Right click “Address Book” in the tree view.

2、 Select “Add (A) ->Group Call (G)(ID：9******)/Single Call (P) (ID:0******)/All Call (ID:AAAAAAA)/Repeater Call (R) (ID:8******)”.

3.Right click a call member and select Rename (M) to assign a unique name for the call. Valid characters include alphanumeric characters, space and special characters. A name cannot be a null character.

Two-way Radio Setting

1、 Click “F1” key to access the function list.

2、 Select “Address Book” and press “[∧]” key to enter “Address Book” option.

3、Press “[≪][≫]” key to select new contact and press “[∧]” key to enter new contact editing interface.

3、 Edit new contact: Group Call (G)(ID：9******)/Single Call (P) (ID:0******)/All Call (ID:AAAAAAA)/Repeater Call (R) (ID:8******). Press “OK” key to enter new contact editing interface.

3、 Edit name: assign a unique name for a call. Valid characters include alphanumeric characters, space and special characters. A name cannot be a null character. Press “OK” key to enter the “Ring Tone” of the new contact.

4、 Select tone: unselected ring tone, tone 1-10

Manual Dialing Setting

Programming software setting

Left click “Menu Definition” to enter “Menu Definition” editing interface, where a user can check “Manual Dialing” at the bottom of “Address Book” option.

1、 Left click “Key Definition” option in the tree view.

2、 Under “Key Definition” editing interface, select any one of key definitions from four programmable key definitions. Drop down the function menu and select “Single-key Manual Dialing” option.

3、Two-way radio programming

4、Click to define a key with “Single-key Manual Dialing” function and input ID to be called in the LCD manual dialing interface (starting with 0, 8 or 9).

Two-way radio setting

1、 Click “F1” key to access the function list

2、 Select “Address Book” and press “[∧]” key to enter “Address Book” editing interface.

3、Press “[≪][≫]” to select “Manual Dialing” function and press “[∧]” key to

enter “Manual Dialing” editing interface.

Input ID to be called in the LCD manual dialing interface (starting with 0, 8 or 9)

| Scan | | |
|---|---|---|
| Display | Description | Setting |
| ON | Scan is OFF | Press OK key to switch to ON |
| Channel 1, 2, 3… | Scanning channels added to the scan list | |
| OFF | Scan is ON | Press OK key to switch to OFF |
| View/edit the scan list | View/edit information in the scan list | |
| Scan group (selected) | select edited scan group list | |
| Editing priority | Set the scan priority for scan groups | |
| Priority 1 | This scan group will be scanned in the top priority | |
| Priority 2 | This scan group will be scanned in the second priority | |
| Priority OFF | Turn scan priority off for scan groups | |
| Scan group 1 (channel 1) | Edit channel 1 in scan group 1 | |
| Edit priority | Edit channel priority in the scan list | |
| Delete | Delete channels in the scan list | Press OK key to delete the channel |

Scan setting

Programming software setting

Left click “Menu Definition” to check “Scan ON/OFF” and “Editing List” options

at the bottom of “Scan”, and then select “Scan Group” in the “Scan List” on the “Channel” editing interface.

Add a scan channel

1、 Right click “Scan” option on the programming software and select “Add” to create “Scan Group 1”.

2、 Right click an area and select Rename (M) to assign a unique name for the scan group.

3.lick “Scan Group 1” and select a channel from “Available Channel” list to be added.

3、 Click “Add” to add a channel to included channel.

Delete a scan channel

1、 Left click a specified channel in the “Included Channel” list.

2、 Left click “Remove” option and the channel will return to “Available Channel” list.

3、Click a specified channel in the “Channel Area” list and right click to select “Delete” option to delete channel in the “Included Channel”.

Scan Transpond setting

1、 Click to enter “Scan Group” menu to check “Transpond” option.

2、 Operate the two-way radio, and when scanning and receiving signals, it can transmit in its sounding channel.

3、Disable scan “Transpond” function, and the two-way radio will transmit in the channel specified by the TX channel function.

Scan “Top Priority Channel” setting

**1、** In the “Scan Group” option, drop down “Top Priority Channel” menu bar.

2、 Select a channel for scanning in the top priority from the included channel list.

Scan “Second Priority Channel” setting (ditto)

Manual setting of channel scan

1、 Click “F1” key to access the function list.

2、 Select “Scan” and press “[∧]” key to enter “Scan” editing interface

3、Press “[≪][≫]” key to select “Open” option and press “[∧]” key, and the two-way radio enters scan mode.

3、 To exit from the scan function, repeat above steps, select “OFF” and press “OK” key.

Manual setting of scan group/scan signal priority

Manually add a scan channel

1、 Enter “Scan” editing interface.

2、 Press “[⩓][⩔]” key to select “View/Edit List” function and press “[∧]” key to confirm it.

3、Press “[⩓][⩔]” key to select “Add a scan channel” and press “[∧]” key to confirm it.

4、

Press “[⩓][⩔]” key to select “Channel *”, press “[∧]” key and enter the priority editing interface of the added channel.

5、Press “—” key to select “Priority 1, 2, Off” and press “OK” key to confirm it.

Manually delete a scan channel

1、 Enter “Scan” editing interface.

2、 Press “[⩓][⩔]” key to select “View/Edit List” option and press “[∧]” key to confirm it.

3、Press “[⩓][⩔]” key to select “Channel *”, press “[∧]” key to confirm it.

3、 Press “[⩓][⩔]” key to select “Delete”, press “[∧]” key for confirmation, and enter the “Delete Items” editing interface to determine whether to delete the scan channel.

3、 Press “[⩓][⩔]” key to select “Yes” or “No” and press “[∧]” key to confirm it.

| Area | |
|---|---|
| Display | Description |
| Area* | A preset area in the two-way radio |
| Area* saved | a channel in the current setting area* that can be used by the two-way radio |

Programming software area setting

Add “Area”

1、 Left click the “Channel” in the tree view.

2、 Select “Add (A)” to create an area.

3、Right click “Area” and select “Rename (M)” to assign a unique name for the

area. Valid characters include alphanumeric characters, space and special characters. A name cannot be a null character.

“Area” switching

1、 Click “Key” option.

2、 Select any one of key definitions from four programmable key definitions, drop down the function menu and select “Area Selection” key.

3、Two-way radio programming

4、Click to define “Area Selection” key, and the display displays “Area” selection interface.

3、 Press left and right “[≪][≫]” key to select switching area.

Manual setting of “Area” switching

1、 Click “F1” key to access the function list.

2、 Press right and left “[≪][≫]” key to select “Area” option.

3、Press “[∧]” key to enter “Area” editing interface.

3、 Press right and left “[≪][≫]” key to select “Area*” preset by a software maker and press “OK” key to confirm it.

| SMS | |
|---|---|
| Display | Description |
| Inbox | View received SMS |
| New | Edit and send SMS |
| Preset | SMS preset in the two-way radio |
| Sent | Record sent SMS |
| Delete all | Delete all received or sent SMS |

| Call log | |
|---|---|
| Display | Description |
| Missed call | display missed call from the calling party |
| Received call | display received call from the calling party |
| Outgoing call | A call initiated by the two-way radio |
| FFFFFFF | none |

Preset SMS of programming software

1、 Left click “SMS” option in the tree view.

2、 Input SMS to be set in the SMS edit list.

Manually edit and send SMS

1、 Click “F1” key to access the function list.

2、 Press left and right “[≪][≫]” key to select “SMS” option.

3、Press "[∧]" key to enter “SMS” editing interface.

4、Press left and right “[≪][≫]” to select “Inbox”

B、Press “[∧]” key to view received SMS.

5、A、Press left and right “[≪][≫]” key to select “New”.

B、Press [∧] key to enter SMS editing interface to edit SMS.

C、Press [∧] key to enter the editing interface to edit receiver information.

D、Press “[∧]” key to send it.

6、A、Press left and right “[≪][≫]” to select “Preset SMS”

B、Press “[∧]” key to enter preset SMS selection interface.

C、Press left and right “[≪][≫]” key to select already-edited SMS.

D、Press “[∧]” key to send it.

7、A、Press left and right “[≪][≫]” key to select “Sent”.

B、Press “[∧]” key to enter preset SMS selection interface.

C、Press left and right “[≪][≫]” key to view sent SMS.

| Setting | |
|---|---|
| Two-way radio setting | |
| Display | Description |
| Communication mode | Talk around/repeater mode: 2/repeater mode: 3 |
| Talk around | Point to point communication mode |
| Repeater mode: 2 | A repeater can be used for connection of the two-way radio |

| | |
|---|---|
| Repeater mode: 3 | Multi-channel base station mode can be used for connection of two-way radio |
| Tone/prompt | Set prompt tone |
| All tone OFF/ON | Turn on or off all prompt tones |
| Conversation allowed | Prompt the other party with release of PTT and the called can break in. |
| Call bell | A prompt tone when initiating a call |
| Keyboard tone | Key tone when operating the keyboard |
| Increasing tone | A type of prompt tone |
| TX power | High/low power used when manually adjusting transmission of the two-way radio |
| Backlight | A switch to set backlight |
| Boot interface | Set boot interface information |
| Keyboard lock | lock keys excluding channel decoder and volume switch |
| Language selection | Chinese/English are available |
| LED indicator | Turn LED indicators ON/OFF |
| Access authentication | Set encryption mode for safe conversation of the two-way radio |
| Information about two-way radio | |
| Battery status (%) | Display current remaining battery capacity percentage. |
| Own number | Display its own device ID and group ID |
| Firmware version | |
| CP version | |

Communication mode setting for programming software

1、 Left click “Channel” option.

2、 Left click to select area channel and enter channel editing interface.

3、On the channel editing interface, set the frequency of the two-way radio to RX and TX pilot frequency.

3、 Check “Talk-around allowed” option.

Define a “Talk-around/online” key for one-key switching of communication mode.

1、 Left click “Key Definition” in the tree view to enter “Key Definition” editing interface.

2、 On the “Key Definition” editing interface, select any one of key definitions from four programmable key definitions, and drop down the function menu to select “Talk-around/online” option.

Manual communication mode setting for the two-way radio

1、 Click “F1” key to access the function list.

2、 Press left and right “[≪][≫]” key to select “Setting” option and enter “Setting” editing interface.

3、Press left and right “[≪][≫]” key to select “Two-way radio setting” option and press “[∧]” key to confirm it.

3、 Press left and right “[≪][≫]” key to select “Communication Mode” and press “[∧]” key to confirm it.

3、 Press left and right “[≪][≫]” key to select “Talk-around” or “Repeater mode: 2” and press “[∧]” to confirm it.

The programming software sets DPMR mode 3

1、 Left click “General Setting” in the tree view to enter “General Setting” editing interface.

2、 Check “DPMR mode 3” option in the “General Setting”.

3、Set key definition to facilitate one-key switching of two-way radio mode (set by referring to key definition).

Manually set the two-way radio to adjust the communication mode (refer to manual communication mode setting for two-way radio)

High power/low power setting for the two-way radio

Programming software setting

In the “Channel Editing” interface, at the bottom of TX part – “TX power”, drop down “High” and “Low” options to preset high/low TX power for the two-way radio.

Manual setting for the two-way radio

1、 Enter “Two-way radio setting” option.

2、 Press left and right “[≽][≼]” key to select “TX power” and press “[∧]” key to confirm it.

3、Press left and right “[≽][≼]” key to select “High” or “Low” and press “[∧]” key to confirm it.

Note: If it displays “High”, it means that the two-way radio is in high TX power state. Press “OK” key to set the two-way radio to “low” TX power state.

Special features

Emergency alarm

“Emergency alarm mode” is generally defined in orange keys. When the mode is enabled, the two-way radio will provide different alarm modes according to set emergency alarm mode.

Note: To enable emergency mode, the communication mode of the channel is required to be set to group call by default.

1、 Define ON or OFF of emergency alarm mode via key definition.

2、 Right click “Emergency System” in the tree view and add emergency “Alarm 1”.

3、

On the channel editing interface, set “Default Communication Address” to group call and set “Emergency System” to “Alarm *”.

3、 On the channel editing interface, check “Emergency alarm indication”, “Emergency alarm confirmation” and “Emergency alarm prompt”.

3、 Edit options on the “Emergency System” interface.

Maintenance

General advisory services

The product is calibrated and test in accordance with related specifications before delivery. Unauthorized maintenance, calibration or modification attempts of the product may result in invalid warranty.

Repair

Please use the original packing case and material when returning the product to your vendor or service center for repair, with detailed fault description attached. Please indicate detailed phone number, name and address, as well as fax number and Email so that maintenance staff can contact you if necessary. Do not return a separate part for repair unless you identify that it requires repair.

You can deliver the product to the authorized BFDX vendor where you purchase it or any other authorized BFDX service center. Please deliver the complete product instead of components or PCB separately. In addition, attach a copy of repair report.

Repair precautions

If you want to know a technical or operation problem, please describe it clearly, simply and completely. Providing following information will be helpful for our assistance:

Device type and serial number;

Problem or fault you encounter;

Other devices related to the problem in the radio station.

Notes:

Do not use peeling newspaper to pack the device. Improper packaging or transportation may result in even more damage.

Notes:

Record purchase date, S/N and the vendor you purchase the product from;

Please keep any written maintenance record for the product for future reference.

For repair during warranty period, please attach the sales slip with date indicated or other purchase certificate copies.

Cleaning

Please clean the product with neutral cleaners and wet clothes, instead of high

concentration chemicals.

Simple troubleshooting

Problems described in the following table are commonly-encountered faults during operation rather than those caused by the circuit.

| Problem | Possible Reason | Corrective Action |
|---|---|---|
| After 13.8V DC power supply is connected and ON key is pressed, the two-way radio fails to be started and the screen displays no information. | 1. The power cord is reversely connected;<br>2. The fuse for the power cord is blown. | 1. Connect the provided DC cord correctly.<br>2. Check the reason for blowing of the fuse. After any problem is checked and eliminated, replace it with a new fuse with the same rating. |
| After start-up, an alarm tone is heard. | 1. The frequency of the two-way radio is loss of lock;<br>2. Power supply overvoltage or undervoltage. | 1. Return it to the local BFDX authorized vendor or BFDX service center for repair and calibration.<br>2. Adjust the power voltage to ensure the operating voltage of the device is within 13.8V DC (±15%). |
| After start-up, transmission fails even when the PTT switch is pressed. | The microphone is not completely inserted into the two-way radio. | Power off and plug the microphone connector again until the locating plate is locked. |
| “Data reading fails” during programming | 1、Ensure that the programming line is correctly connected to | 1、Check connection;<br>2、Close other executing software. |

| | | |
|---|---|---|
| | PC;<br>2、Too many progresses are processed in the PC;<br>2、PTT is triggered during programming. | 3、Do not operate the two-way radio during programming. |

Specifications

BF-M100 Technical Specifications

| **General specifications** | |
|---|---|
| Frequency range | UHF:350-370MHz<br>UHF:400-470MHz<br>UHF:450-520MHz |
| Number of channels | 160 channels |
| Channel interval | 6.25KHz<br>(narrow band) |
| Supply voltage | 13．8V　DC, negative grounded |
| Current consumption | TX <8A, RX <1A, wait <0.4A |
| Operating temperature | -30℃— +60℃ |
| Frequency stability | ≤±2.5 ppm |
| Antenna impedance | 50Ω |
| Volume | 145(L)×135(W)×40(H) |
| Weight | |
| **RX part** | |
| Sensitivity (12dB SINAD) | ≤0.25 μV (broad-band) ≤0.28μV (narrow-band) |
| Adjacent-channel selectivity | ≥75dB(broad band) ≥70dB (narrow band) |
| Intermodulation immunity | ≥75dB |
| Spurious response | ≥75 dB |
| Blockage | ≥95 dB |
| Audio output power | 2W (built in) 4W (externally connected) |
| Audio response | +1/-3dB |
| Audio distortion factor | ≤3% |
| **TX part** | |

| | |
|---|---|
| RF output power | 25W |
| Clutter and harmonic | -36dBm<1GHz -30dBm>1GHz |
| FM noise | 45dB (broad band)/40dB (narrow band) |
| Modulation mode | 16K0F3E(broad band)/ 8K5F3E(narrow band) |
| Max. frequency offset | ≤±5KHz (narrow band) /±2.5KHz (narrow band) |
| Microphone impedance | 600Ω |
| Audio response | +1/-3dB |
| Audio distortion | ≤3% |