

Operation instructions

USER'S MANUAL



Professional wireless intercom
PROFESSIONAL FM TRANSCEIVER

I. Brief Introduction of Functions

1. **Working Frequency Band:** UHF 400–480MHz (Receive/Transmit)
2. 16 Storage Channels
3. Channel Announcement in Chinese/English
4. 40 Groups of CTCSS, 166 Groups of Standard DCS
5. Transmit Time Limit
6. Power - Saving Function
7. VOX Voice - Controlled Function
8. Voltage Warning
9. Scanning Function
10. Wide/Narrow Band
11. Interference Function
12. Decoding Function
13. Computer Programming
14. Wireless Cloning
15. Noise Reduction Function (Model - Optional)
16. Dual PTT Function

[Diagram with labels: Antenna, TX/RX Indicator Light, Front PTT Key, Side PTT Key, Headphone Jack , Keyboard Lock, Power Switch, CH+, CH -, TYPE - C Charging Port, MIC, Volume +/-, Speaker]

Key Introduction:

- **Keyboard Lock:** Long - press for lock and unlock functions. After locking, short - pressing CH+ and CH - is invalid.
- **PTT is the Transmit Key:**
- **CH+ CH -:** Have two functions, (Short Press and Long Press). Short - press CH+ as the channel up key, short - press CH - as the channel down key. Long - press functions: Close, Scan,

Voice Control, Alarm, Monitor. Need to select the required functions through the programming software.

- **Power Switch:** Long - press for 2 seconds to power on with voice broadcast, long - press again to power off.
- **Volume +:** Short - press to increase volume, Volume -: Short - press to decrease volume.

Note: The long - press time is 2 seconds.

II. Function Operations

Decoding Function

Can break the transmit frequency and sub - audio code. Power off the walkie - talkie on Channel 1, then press and hold 《Volume +》 and 《Power Switch》 to power on. The green light flashes to enter decoding mode. When the transmitter sends and the walkie - talkie receives the signal, there is a “beep” prompt, indicating successful decoding. Can switch to the next channel to decode a new signal. After decoding, power off and restart to save the decoded channel frequency.

Cloning Function

Set the walkie - talkie to Channel 2 and power off. Then press and hold 《Volume +》 and 《Power Switch》 to power on. The green light flashes to enter cloning mode. Place the cloning machine aside, set the machine to be cloned to Channel 2, press and hold 《Volume +》 and 《Power Switch》 to power on, then press the PTT key for 1 second and release. The red transmit light is on. Wait until the red transmit light goes off and data transmission is completed. Power off both walkie - talkies and restart to complete cloning. The cloned machine and the cloning machine have exactly the same channel frequency and functions. Multiple walkie - talkies can be cloned simultaneously

CH+ CH -: Long - press functions: Close, Scan, Voice Control, Alarm, Monitor. Need to select the required functions through the programming software.

- **Close:** Long - press not to function.
- **Scan:** Long - press to activate scan mode, automatically detect the activity of Channels 1 to 16 defined as scannable channels (programming software can define whether each channel can be scanned or not). When the scanned channel has a signal, the walkie - talkie will automatically stay on that channel for communication. To stop scanning: Long - press again to power off, that is, exit scan mode.

- **Alarm:** When there is a transmit frequency on the current channel, long - press to activate remote alarm, and the machine will alarm simultaneously. To exit remote alarm, press PTT to exit alarm mode.
- **Monitor:** Check if someone is talking on the selected channel. If there is no signal, there will be a “rustling” sound.

Voice - Controlled Transmission:

If the walkie - talkie is set to enable the voice - control function by the programming software, long - press to activate the voice - control function.

Voice - control gain level: When the sound level is higher than the set voice - control gain level, VOX automatically transmits. The gain level can be adjusted to Level 1 ~ 9.

(Note: The voice - control gain level must be set through the programming software)

Power - Saving Function:

- **Power - Saving On:** Automatically enter power - saving state if there is no operation for 10 seconds.
- **Power - Saving Off:** The walkie - talkie does not save power.

Battery Voltage Detection:

- **Low Battery Warning:** When the voltage is below a certain level, voice prompts low battery approximately every 20S.

Transmit Timer:

Set the transmit time limit of 30s - 300s in the programming software.

Chinese/English Switch:

Set Chinese, English, and three states of off in the programming software.

Sub - audio QT/Digital Sub - audio DQT:

Can use the programming software to set the sub - audio QT/digital sub - audio DQT signal on the walkie - talkie channel.

III. Technical Parameters

General Specifications:

Frequency Range	UHF 400 - 480MHz
Storage Channels	16 Groups
Working Voltage	DC 3.7V
Frequency Stability	$\pm 2.5\text{ppm}$
Working Temperature	- 20°C ~ + 50°C
Working Mode	Same - Frequency Simplex
Antenna Impedance	50 Ω

Transmit:

Output Power	$\leq 5\text{W}$
Transmit Current	$\leq 1500\text{mA}$
Maximum Frequency Deviation (Wide Band)	$\leq 5\text{KHz}$
Spurious Power	$\leq 7.5\mu\text{W}$
Adjacent Channel Power	$\leq - 65\text{dB}$
Signal - to - Noise Ratio (Wide Band)	$\geq - 45\text{dB}$
Sub - audio/Digital Sub - audio Deviation (Wide Band)	$0.7 \pm 0.1\text{KHz}$
Modulation Sensitivity	8 - 12mV

Receive:

Sensitivity	- 122dBm (12dB SINAD)
Audio Power	≥350mW
Audio Distortion	<10%
Intermodulation (Wide Band)	≥55dB
Adjacent Channel Selectivity (Wide Band)	≥55dB
Spurious Suppression	≥55dB
Receive Current	≤450mA

Warranty Card

Sales Information	
Dealer (Seal Valid)	
Address	
Contact Phone	
Product Information	
Product Model	
Serial Number	
Purchase Date	
User Information	
User Name	
Contact Phone	
Address	

Important Reminder:

This warranty card is an important certificate for the end - user to enjoy the warranty service of our company. Please keep it properly.

Warranty Terms:

1. The warranty period of this product starts from the sales date (based on the date on the sales invoice). The main unit is warranted for 12 months, and accessories are warranted for 6 months .
2. During the warranty period, the product logo or product serial number must not be torn off.
3. This warranty card is valid only when stamped by the dealer authorized by our company and filled out completely.

The following situations are not covered by the free warranty service of this product, and repair fees will be charged:

1. Normal wear and tear;
2. Beyond the product warranty period;
3. Damage caused by not using, maintaining, or storing the product in accordance with the product instruction manual;
4. Damage caused by repair, disassembly, etc. by non - authorized personnel of our company;
5. Without a valid warranty card and valid invoice (except those that can prove the product is within the warranty period);
6. Arbitrarily altered product warranty card;
7. The product model or serial number on the warranty card does not match the product;
8. Damage caused by force majeure.

IV. Explosion-Proof Knowledge Introduction

Precautions

When using an explosion-proof walkie-talkie, please strictly abide by the relevant information and safety regulations in the following operating instructions to ensure safe and reliable operation in the specified environment. Otherwise, it may lead to dangerous consequences or violate relevant regulations. Please read this user manual carefully before using the device.

Explosion-Proof Mark of This Device

Explosion-Proof Certificate Number: CNEx19.0000X

Explanation of Explosion-Proof Mark: Ex ib IIB T4 Gb

- Ex: Explosion-proof mark
- Ib: Intrinsically safe type
- IIB: II is the equipment category, B is the gas level
- T4: The highest surface temperature group of the equipment
- Gb: Equipment protection level

Scope of Application and Zones

This digital explosion-proof walkie-talkie complies with the standards of GB3836.1-2010 and GB3836.4-2010. The intrinsically safe circuit is designed such that under specified test conditions, the sparks and thermal effects generated will not ignite the specified explosive gas mixture. Therefore, it is currently the safest type of explosion-proof design.

Instructions for Grade Use

This product is an intrinsically safe device used in gas environments of Zone 1 and Zone 2, belonging to equipment category II. It is an electrical device for use in explosive gas environments other than coal mines, with a temperature group of T4 and an equipment protection level of Gb.

Classification of Hazardous Areas

Hazardous Substances	Long-Term Presence (more than 1000 hours/year)	Presence During Normal Operation (1 0-1000 hours/year)	Presence Only During Abnormal Conditions (less than 10 hours/year)
-	Zone 0	Zone 1	Zone 2

Intrinsically safe devices refer to products that have been certified by a certification body as intrinsically safe. It proves that a specific product meets the applicable intrinsically safe certification standards of the institution and can be used in specific hazardous locations. For example, petrochemical enterprises, production, transportation, and storage sites of fuels or chemicals, oil tanker cargo holds, etc. Since the intrinsically safe circuit cannot ignite the specified explosive gas mixture in terms of generated sparks and thermal effects under specified test conditions, it is currently the safest type of explosion-proof design.

Measures to Take After Device Failure

If the intrinsic safety or integrity of this product is compromised, immediately stop any operation of this product, leave the explosive area, and avoid reusing it. The device must be sent to the manufacturer for inspection.

The safety and reliability of the device will be threatened in the following situations:

- Obvious damage or cracks on the casing
- Exceeding the allowable tolerance value or threshold
- The nameplate or text on the device body is difficult to identify
- The walkie-talkie exceeds the load limit
- Improper storage
- Device failure
- The walkie-talkie is damaged during transportation

Safety Regulations

Any person using this product must abide by standard safety regulations and read the certificates carefully to avoid improper operation or damage to the device. At the same time, the following safety regulations must be adhered to:

- This product can only be powered by a battery pack of model KB-610A-Ex 7.2V 2400mAh. The KB-610A-Ex battery pack consists of 2 series-connected battery cells of model NCA653864SA 3.6V 2400mAh and its protection board. Otherwise, the device will lose its explosion-proof function.
- Do not disassemble or replace the explosion-proof battery pack in an explosive environment, and do not charge the battery pack.
- Only use the specified charger outside the hazardous area to charge the battery.
- Only use the accessories specified by our company.
- Do not carry spare batteries into the hazardous area.
- Do not use uncertified explosion-proof peripheral plug-in devices in an explosive environment.
- Do not use a device with a damaged antenna. A damaged antenna may cause minor burns if it touches the skin.
- Do not expose the device to direct sunlight for a long time or place it near a heating device.
- It is strictly prohibited to bring the device into Hazardous Area Zone 0.
- It is strictly prohibited to disassemble the device, replace the device battery, or accessories in a hazardous area.
- It is strictly prohibited to disassemble or modify the product certified by the explosion-proof testing agency in any way. Only the original manufacturer of the product can make modifications within the scope permitted by the explosion-proof testing agency. Unauthorized modifications will render the explosion-proof certification of this product invalid.

V. Unboxing

Please carefully take out the walkie-talkie and its accessories and check if they are consistent with the following list. If any missing or damaged parts are found, please contact your dealer immediately.

Item	Quantity
Walkie-Talkie	1
Antenna	1

Battery	1
Charger Base	1
Power Adapter	1
Belt Clip	1
Belt Clip Screws	2
Instruction Manual	1
Wrist Strap	1

VI. Additional Function Operations

Scan Directory

Create and assign scan lists to individual channels/groups. The walkie-talkie scans for voice activity through the channels/loops in the sequence specified in the scan list for the current channel/group. Your walkie-talkie can support up to 250 scan lists, with a maximum of 16 members per list. Each scan list supports a mix of analog and digital entries.

You can add, delete, or prioritize channels by editing the scan list. You can attach new scan lists by programming the walkie-talkie through the front panel.

- View an entry in the scan list
- Edit the scan list

Contact Settings

The walkie-talkie provides a contact addition function. Each entry corresponds to an alias or ID used to initiate a call. Depending on the context, each entry can be associated with one of three types of calls: group call, private call, all call.

Call Indicator Settings

Users can access the menu to turn on/off the call keypad tone. Press the left (←) key to access the menu, press [OK] to confirm and access the next sub-menu, and then press [OK] again to select the desired function.

Emergency Operation

An emergency alarm is triggered in critical situations. You can activate the emergency display at any time, on any screen, even if there is activity on the current channel. This walkie-talkie supports 3 types of alarms:

- Normal - The walkie-talkie transmits and displays an audio alarm signal and/or visual indicator
- Silent - The walkie-talkie transmits an alarm signal without audio or visual indicators on the device itself.
- Emergency Call - Transmits an emergency call to pre-defined contacts or groups, along with audio and visual alerts.

SMS Function

The walkie-talkie is equipped with an SMS function that allows users to send and receive text messages within the communication network. To send an SMS: access the menu, select the "SMS" option, choose a contact from the contact list or manually enter the recipient's ID, type the message using the keypad, and press [OK] to send. Received messages will be stored in the inbox, and an unread message indicator will appear on the LCD display when there are unread messages. The maximum number of stored messages is determined by the device's memory capacity; when the inbox is full, new messages will not be received until old ones are deleted.

Off-Network SMS Sending

When the walkie-talkie is out of the repeater coverage or not operating through the repeater (off-network mode), it can still send SMS messages to other walkie-talkies within the direct communication range. The operation steps are the same as sending SMS in network mode, but the transmission success depends on the distance and signal strength between the devices.

Walkie-Talkie Settings

Users can customize various parameters of the walkie-talkie through the settings menu, including:

- Display brightness and backlight duration
- Keypad tone on/off
- Auto power-off time (if supported)
- Language selection (Chinese/English)
- Power level (high/low)
- VOX sensitivity (if VOX function is enabled)

To access the settings menu: press the [Menu] key, navigate through the options using the CH+ and CH- keys, press [OK] to select an option, adjust the parameter as needed, and press [OK] again to save the setting.

Environmental Characteristics

Environmental Parameter	Specification
Operating Temperature	-20°C to +50°C
Storage Temperature	-30°C to +60°C
Humidity	≤95% (non-condensing)
Altitude	≤2000m
Vibration Resistance	Complies with GB/T 2423.10
Impact Resistance	Complies with GB/T 2423.6

Compliance and Certification

This walkie-talkie complies with the following standards and has obtained relevant certifications:

- ETSI TS 102 361-1/-2/-3 (Digital Protocol)
- GB3836.1-2010 (Explosive Atmospheres - Part 1: General Requirements)
- GB3836.4-2010 (Explosive Atmospheres - Part 4: Intrinsically Safe "i")
- FCC Part 15 and Part 90

The product certification numbers are printed on the device nameplate for verification.