Thank you for purchasing the Wouxun KG-S86B portable business radio.

Your feedback makes our products better. Please share your thoughts.

feedback@buytwowayradios.com
www.buytwowayradios.com

Contents

Safety Information

The KG-S86B is an electrical apparatus, as well as a generator of RF (Radio Frequency) energy, and you should exercise all safety precautions as are appropriate for this type of device.

Please read the suggestions and warnings below before using the transceiver.

- ⚠ Keep the transceiver and accessories out of the reach of children.
- ⚠ Do not disassemble the transceiver.
- ⚠ Only use the supplied battery pack and charger or genuine Wouxun branded replacements purchased from an authorized dealer. Using improper batteries and charging accessories can damage the transceiver.
- ⚠ The supplied antenna is tuned for the frequencies supported by this transceiver. Using an aftermarket antenna can damage the transceiver.
- ⚠ Do not leave the transceiver exposed to direct sunlight or in overheated areas for an extended period of time.
- ⚠ Keep the transceiver away from dusty or humid areas.

⚠ The transceiver should be cleaned with mild detergents and a soft brush or cloth. Avoid cleaning with aggressive chemicals.

⚠ NEVER transmit without a properly connected antenna.

⚠ If an abnormal odor or smoke is detected from the transceiver, power it off immediately, then remove the battery pack. Contact your dealer for further assistance.

⚠ Only the carry accessories supplied with this radio (such as the belt clip) should be used. Use of other accessories may exceed RF exposure guidelines.

Notice

- These tips are important for safe operation of your KG-S86B radio and its accessories. If the transceiver does not function normally, please get in touch with your dealer immediately.
- If you use components or accessories not produced by the Wouxun Company, Wouxun will not guarantee the safety and usability of the transceiver.

Safety Information

Caution

Please read this manual before using the radio, as it includes important instructions for the safe handling, use and operation of your radio.

FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

WARNING: MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR RADIOTELEPHONE SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND US FEDERAL LAW.

Radio Operation and EME Exposure

Use only an antenna designed for use with this radio and its operating frequencies. Unauthorized modifications or attachments may damage the radio and violate FCC rules.

DO NOT hold the antenna while the radio is in use.

DO NOT attempt to use the radio with a damaged antenna.

FCC Licensing Information

The Wouxun KG-S86B is FCC Part 90 type accepted for use on the business band. The KG-S86B operates on UHF business frequencies according to the Federal Communications Commission (FCC) Rules in the United States. As such, a business radio license is required to transmit on these frequencies. To obtain an FCC license for the your business, go to the FCC's web site and complete the online application. For assistance with the FCC licensing process, visit https://www.buytwowayradios.com/services/radio-licensing.html.

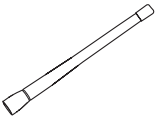
Feature Summary

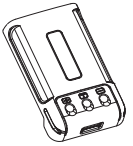
- Up to 400 Custom Channels
- 99 Business Frequencies
- Up to 2 Watts Output Power
- 16 Pre-Programmed Channels (for out-of-the-box compatibility)
- 50 CTCSS Tones / 105 DCS Codes
- LCD Display
- Display Channel Name, Number, or Frequency
- Caller ID Display
- IP65 Waterproof
- USB-C Charging Port
- High/Low Power Selectable
- Standard and Non-Std CTCSS/DCS
- Channel Scan
- Priority Channel Scanning
- Superheterodyne Receiver
- Companding
- Monitor Function
- DTMF Support
- VOX
- Narrowband Compliant
- English Voice Guide
- Built-in Flashlight
- 2 Configurable Side Keys
- Configurable Top Key
- Alarm and SOS Functions
- PC Programmable

What's Included

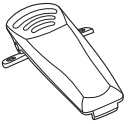
Carefully unpack the contents of the box and be sure that you have the items in the list below. If any items are missing or damaged, please contact your dealer.


Transceiver


High gain antenna


Lithium-ion batterypack

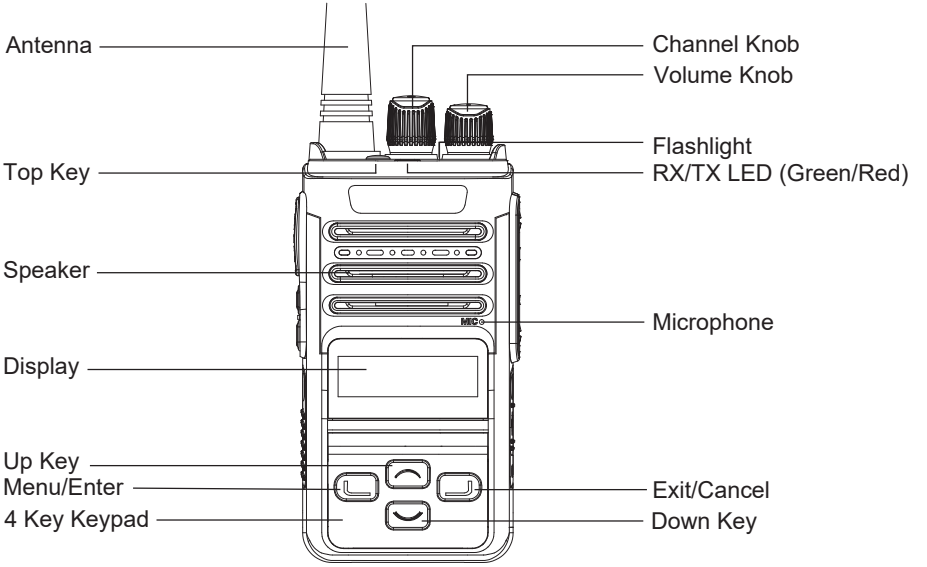

Intelligent charger


Beltclip

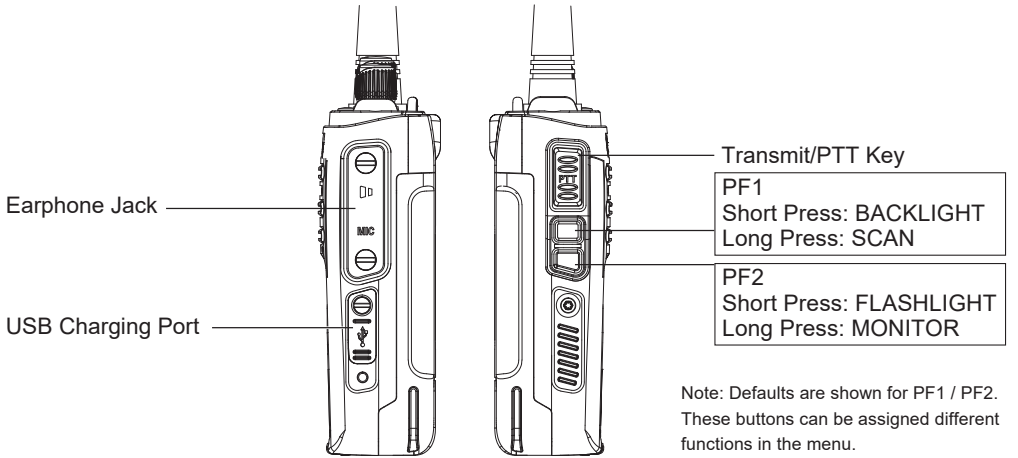

Handstrap


User's manual

Front Panel Guide

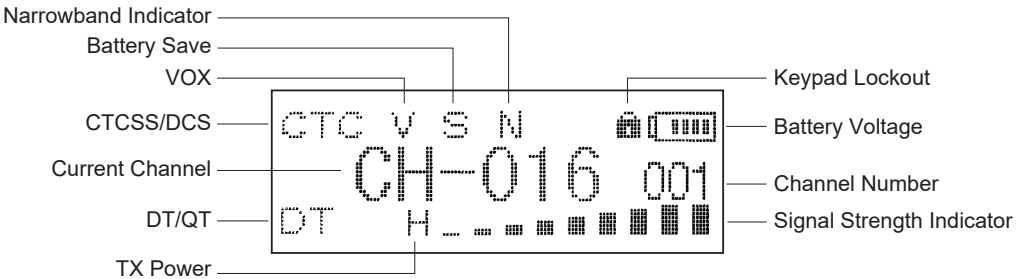


Right / Left Side Guide



Note: Defaults are shown for PF1 / PF2. These buttons can be assigned different functions in the menu.

Display Guide



Dust and Water Protection

The KG-S86B is waterproof to IP65 standards. It is dust resistant and rated to withstand any ingress of solid objects. It can withstand direct jets of water projected by a nozzle (6.3 mm) against the enclosure for a limited period. **This radio is dust and waterproof only while the battery is properly installed and locked in place with no gaps and all ports are completely sealed with their port covers. Use of a headset or other accessory will negate the dust and waterproofing features of this radio.** Do not attempt to operate this radio if it has been submerged in water.

- The radio charger is NOT dust or waterproof.
- Charge the radio only under dry conditions.
- DO NOT charge the radio when it is wet.
- DO NOT expose the radio and charger to wet environments when charging.

Installing and Removing the Battery

The lithium-ion battery pack included with the radio is not fully charged out of the box. It is recommended to charge it before using the radio for the first time.

Installing the Battery

Slide the battery pack up along the back of the radio until it stops. Then push the bottom of the battery towards the radio until it clicks into place.

Removing the Battery

Pull the release latch toward the three battery contacts. While holding the release latch in place, press down on the top end of the battery pack and slide the battery pack down and off the radio.

Charging the Battery

The KG-S86B features two charging options for the battery pack. It can be charged using the included desktop charger or the built-in USB-C port on the side of the radio.

Charging with the Desktop Charger

The KG-S86B includes an intelligent desktop charger. It can charge the battery pack with or without the radio attached.

1. Insert the AC plug into an available 100~240v outlet. The LED light on the charger base will flash red for 2-3 seconds. This indicates the charger is in standby mode.

2. Insert the battery or radio with the battery attached into the charger. The LED light on the charger will turn red to indicate the battery is charging.

3. When the LED light on the charger turns green, charging is complete.

Note

- When a completely drained battery is first inserted into the charger, the charger will switch to trickle charge mode and the LED will flash red continuously.
- After 10-20 minutes the charger will switch to normal charging mode and the light will turn solid red. The LED will turn green when charging is complete.

Charging with the USB-C Port

The KG-S86B can charge the battery from the USB-C charging port on the side of the radio using an optional USB-C cable (not included). The battery pack can be fully charged with a USB cable connected to a USB to AC adapter plugged into an AC outlet or a to a USB port in a vehicle, power bank or computer.

When the radio is connected to a power source through the USB-C charging port with a battery attached, the LED at the bottom of the port will light up red to indicate the battery is charging. The LED will turn green when charging is complete.

In addition to the charging option, the radio can be powered directly via the USB-C port while charging the battery pack.

Antenna Information

The KG-S86B includes an antenna with an SMA female connector that is tuned for the frequency range of your radio. Aftermarket antennas may be used, provided they are tuned for this frequency range.

Warning: To avoid injury, DO NOT attempt to operate your radio if the antenna is damaged or defective.

DO NOT attempt to operate your radio without an antenna connected to the radio. Transmitting without an antenna or a correctly tuned antenna directly and properly connected to the radio may damage the radio and void the warranty.

Installing the Belt Clip

The belt clip attaches to the back of the radio with the two supplied screws. To install the belt clip, press it against the back of the unit and line up the screw holes. Insert each screw one at a time and tighten until there is no further resistance and the belt clip is firmly attached to the radio. Do not overtighten the screws.

Introducing the KG-S86B

The KG-S86B was designed for businesses and organizations that need a full featured analog business radio without complicated preconfiguration. Right out of the box, this radio is configured to allow you to transmit on 16 pre-loaded channels for instant compatibility with many other popular business radios. This radio can also be customized for your licensed frequency(ies). Using the KG-S86B programming software, you can choose from a list of 99 business frequencies that can be assigned to a total of 400 customized channels.

Read this chapter to learn the basics of using your new KG-S86B radio, such as selecting a channel, transmitting and receiving, and scanning.

Power On/Off and Adjusting Volume

Rotate the volume knob clockwise to power on the radio. To power off the radio, rotate the volume knob counter-clockwise until a click is felt.

To adjust the volume, use the volume knob when the radio is powered on. Turning the knob clockwise increases the volume, counter-clockwise decreases it.

Your First Transmit

Selecting a Channel

When you power on your KG-S86B for the first time, the radio will emit a short tone and will be ready to transmit and receive on the current channel. Turn the Channel Knob to navigate through the available channels for your licensed frequency(ies).

Be sure the channel you choose is the same channel that the rest of your group is using. Be sure the channel you select is also supported by the equipment everyone else in your group is using.

Transmitting and Receiving

With a channel selected, the radio is actively "listening" for an incoming signal on that channel. When a signal is detected, the transmission will be heard through the radio's speaker.

To transmit, first be sure the channel is clear and then hold the radio a few inches from your mouth. Hold down the PTT button on the side while talking and release the PTT

when finished.

For best performance and clarity of transmission, position the radio upright with the front of the radio facing you, hold it several inches away from your mouth and speak directly into the microphone during transmission.

Channels and Privacy Codes

Channels

The KG-S86B is pre-configured with 16 default business frequencies out of the box, but allows users to choose from 99 business frequencies and save them to a maximum of 400 custom channels with optional programming software.

The KG-S86B can only transmit and receive on business frequencies in the UHF band.

Privacy Codes

The KG-S86B supports 50 CTCSS tones and 105 DCS codes, for a total of 155 privacy tones and codes. To successfully communicate between your stations or members

of your group, all the connecting radios must be using the same channel and privacy (CTCSS or DCS) code.

The KG-S86B supports both standard and non-standard CTCSS tones and DCS codes. These tones and codes can be enabled and configured in the [RX-CTCSS], [RX-DCS], [TX-CTCSS] and [TX-DCS] menu options (pp 34-35). Instructions for entering non-standard tones and codes can be found in the Advanced Operations section of this manual.

Channel Scan

The KG-S86B has a channel scan feature, which is assigned to the [PF1] key by default. To activate Channel Scan, press and hold the [PF1] key for two seconds or until you hear "Scan Begin". The radio will scan each channel for activity, starting from the current channel.

Pressing the [UP] / [DOWN] keys while scanning will change the direction of the scan from low to high ([UP]) or high to low ([DOWN]).

To stop the scan, press and hold the [PF1] key for two seconds or until you hear "Scan

Stop". Pressing the [PF2] or [TOP] key or turning the channel knob will also stop the scan. Refer to Scan Mode (page 35) for more information on the types of scans available.

The scan function can also be assigned to the programmable PF1, PF2 or TOP buttons from the menu (page 49-51).

Priority Channel Scan

The KG-S86B supports Priority Channel Scanning. With this feature a priority channel can be specified that is scanned much more frequently than other channels. This helps prevent missing all or part of a transmission when you are primarily concerned with a single channel.

Priority Channel Scanning works by scanning your priority channel in between all other channels. For example, if your priority channel is 3 the radio would scan your channel list in the following order:

1 ▸ 3 ▸ 2 ▸ 3 ▸ 3 ▸ 3 ▸ 4 ▸ 3 ▸ 5 ▸ 3 ▸ ...

To set a priority channel, use the [PRI-CH] menu item (page 37). To activate the Priority Channel Scanning feature, use the [PRI-SCAN] menu item (page 36). Individual channels can be added or removed from the scan list using the Scan Add [SCAN-ADD] menu option (page 36).

Compander

Ths KG-S86B has a compander to minimize noise during transmission. The compander is useful when transmitting over long distances.

If the compander is activated on the KG-S86B, it should also be activated across your entire fleet of radios. Audio may sound poor if one radio has the compander activated and others don't. If the audio is poor when using the KG-S86B with radios from other brands, check the compander, as some brands enable companding by default.

It is off by default and can be enabled using the Compand menu option (page 41).

Programmable Key Functions

The KG-S86B has two programmable keys called [PF1] and [PF2] located on the left

side of the radio below the PTT key. It also has a programmable [TOP] key. Each key can perform two different functions, one activated with a short press and one with a long press. These functions can be assigned to the [PF1], [PF2] and [TOP] buttons from the menu (pp. 49-51). They can also be assigned via the programming software.

Default Key	Function	Description
	ALARM	Transmit alarm (page 31)
PF1 Short	BACK-LT	Activate backlight (page 29)
	CALL	Sends a call ID (page 30)
PF1 Long	SCAN	Scan function (page 25)
	TXPOWER	Transmit power level (page 30)
PF2 Short	FLASHLT	Activate flashlight (page 29)
PF2 Long	MONITOR	Monitor channel (page 30)
	CH-DISP	Channel Display Mode (page 32)
	SOS	Transmit SOS (page 31)

Default Key	Function	Description
	VOX	Activate VOX (p 38)
TOP Short	OFF	Key not assigned
TOP Long	OFF	Key not assigned

Display Blacklight

The KG-S86B allows you to activate the backlight for the display using a programmable key. When activated, the backlight will remain on for the duration of the time set in the BACK-LT menu option (page 33). It is assigned to a short press of the [PF1] key by default, but can be disabled or otherwise assigned to the [PF1], [PF2] or [TOP] key using the menu (pp. 49-51).

Flashlight

The KG-S86B has a built-in LED flashlight at the top of the radio. It is assigned to a short press of the [PF2] key by default, but can be disabled or otherwise assigned to the [PF1], [PF2] or [TOP] key using the menu (pp. 49-51).

Call

The KG-S86B allows you to send the Call code set in the CALL-ID menu option (page 42). It can be assigned to the [PF1], [PF2] or [TOP] key using the menu (pp. 49-51).

Monitor

The MONITOR function opens squelch on the current channel. This is useful when listening for weak transmissions. It is assigned to a long press of the [PF2] key by default, but can be disabled or otherwise assigned to the [PF1], [PF2] or [TOP] key using the menu (pp. 49-51).

Transmit Power

This function Sets the transmit power of the radio. The KG-S86B has two power optons: Low (0.5W) and High (2W). Wattage is approximate. It is preset to 2 watts on all channels by default, but can be toggled if the function is assigned to the [PF1], [PF2] or [TOP] key using the menu (pp. 49-51).

Alarm

The radio features an alarm function with a Call ID code. When activated, the radio will emit an oscillating alarm and transmit a Call ID code plus the numbers “110” on the active channel for 5 seconds, after which the alarm will repeat. Press any key to deactivate the alarm. It is disabled by default, but can be assigned to the [PF1], [PF2] or [TOP] key using the menu (pp. 49-51).

SOS

The radio can transmit an SOS alarm to other stations on the same channel. When SOS is activated, the radio will emit an oscillating alarm. After 5 seconds, the radio will transmit the alarm to other radios on the same channel. It is disabled by default, but can be assigned to the [PF1], [PF2] or [TOP] key using the menu (pp. 49-51).

[01: SQUELCH] Squelch

Function: The squelch function mutes the speaker when no signal is detected. Adjusting the squelch sensitivity allows you to control how strong of a signal is required in order to unmute the speaker. Selecting a lower number will allow weaker signals to be heard, higher numbers require a stronger signal. Selecting [0] will unmute the speaker at all times. Squelch is set independently for each area.

Options: 0-9

Default: 5

[02: TX-POWER] Output Power

Function: Sets the transmit power of the radio. The radio has two power options: Low (0.5W), and High (2W). Wattage is approximate.

Options: HIGH/LOW

Default: HIGH

[03: CH-DISP] Channel Display Mode

Function: Changes the way the the channel is displayed.
Options: CH-NAME/CH-FREQ/CH-NUM
Default: CH-NAME
CH-NAME: Channel Mode. Displays the channel name (Example: WAREHS)
CH-FREQ: Channel Mode. Displays the channel frequency (Example: 464.5500)
CH-NUM: Channel Mode. Displays the channel number (Example: CH-001)

[04: BACK-LT] Active Backlight

Function: Sets the timeout of the LCD display backlight while the radio is in standby. The timer can be set from 1-30 seconds in one second increments. It can also be set to turn off imediately or always remain on.
Options: OFF/1-30S/ALWAYS
Default: 10 Seconds

[05: BAT-SAVE] Battery Saver

Function: Activate the battery saver feature. When active, the radio will scan less frequently for signals, improving battery life.
Options: ON/OFF

Default: ON

[06: RX-CTCSS] Receive CTCSS Tone

Function: Sets the receiving CTCSS tone for the selected channel. Use the arrow keys to select your preferred code and then MENU to confirm.
Options: OFF/50 CTCSS Tones
Default: 67.0

[07: RX-DCS] Receive DCS Code

Function: Sets the receiving DCS code for the selected channel. Short press the [PF2] key to choose DCS+ or DCS- codes. Use the arrow keys to select your preferred code and then MENU to confirm.
Options: OFF/105 DCS+ Codes/105 DCS- Codes
Default: OFF

[08: TX-CTCSS] Transmit CTCSS Tone

Function: Sets the transmitting CTCSS tone for the selected channel. Use the arrow keys to select your preferred code and then MENU to confirm.

Options: OFF/50 CTCSS Tones
Default: 67.0

[09: TX-DCS] Transmit DCS Code

Function: Sets the transmitting DCS code for the selected channel. Short press the [PF2] key to choose DCS+ or DCS- codes. Use the arrow keys to select your preferred code and then MENU to confirm.
Options: OFF/105 DCS+ Codes/105 DCS- Codes
Default: OFF

[10: SCANMODE] Scan Mode

Function: Scan mode settings
Options: TO/CO/SE
Default: TO
TO: When a signal is detected, scanning stops. Scan will pause to wait for further activity and will then resume if no operation is carried out within 5 seconds. Pressing PTT will transmit on the currently selected channel.
CO: When a signal is detected, scanning stops and resumes immediately after the sig-

nal is lost. Pressing PTT will transmit on the currently selected channel.

SE: When a signal is detected, scanning stops. Pressing PTT will transmit on the channel where the signal was detected.

[11: SCAN-QT] Tone Scanning Compatibility Check

Function: Determines if the incoming transmissions are filtered by CTCSS/DCS tones during scan mode.

Options: ON/OFF

Default: OFF

[12: SCAN-ADD] Scan Add / Delete

Function: Add or remove a channel to/from the list of channels to scan.

Options: ADD/DEL

Default: ADD

[13: PRI-SCAN] Priority Scan

Function: Activates scanning of the Priority Channel. During scan, the priority channel

will be scanned more frequently. Read the "Channel Scan" section on page 25 to learn more.

Options: ON/OFF
Default: OFF

[14: PRI-CH] Priority Channel

Function: Selects the priority channel. This is used during scanning when the Priority Scan (menu option 16) feature is enabled. To select a priority channel, use the [UP] and [DOWN] keys to select a channel number.

Options: 400 channels
Default: CH 001

[15: TONESCAN] CTCSS/DCS Scanning

Function: Scans the incoming signal for CTCSS or DCS tones to identify or confirm the correct tone. This function must be activated while receiving a signal.

Options: None. Choose the function and press [MENU] to activate the scan.

Default: Note: The scan will stop when the signal ends and resume from where it left off the next time the signal is received, until it identifies the correct tone. Use

the [UP]/[DOWN] arrow keys to scan in a different direction. Short press the [PF2] side key to toggle between standard CTCSS, positive DCS, and negative DCS tone list.

[16: TONESAVE] CTCSS/DCS Tone Save Options

Function: This item determines how a CTCSS or DCS tone is saved to a channel after a CTCSS/DCS scan.
Options: BOTH/RX/TX
Default: TX
BOTH: Saves the scanned tone to both RX and TX settings.
RX: Saves the scanned tone to the RX-CTCSS/DCS setting
TX: Saves the scanned tone to the TX-CTCSS/DCS setting.

[17: VOX] Voice Activated Transmit

Function: The VOX function allows you to transmit without pressing the PTT key. The VOX function will detect that you are speaking into the microphone and then automatically begin transmitting. VOX gain levels of 1-9 are provided to allow you to adjust the voice detection sensitivity.

Options: OFF/1-9 (level)
Default: OFF

[18: VOX-DLY] VOX Delay

Function: Sets the number of seconds to delay turning off transmit after the VOX function no longer detects audio.
Options: OFF/1-5 (seconds)
Default: 1S

[19: TOT] Transmit Overtime Timer

Function: When the transmission time exceeds the time set by the Transmit Overtime Timer, the unit will emit an error prompt and stop transmitting.
Options: OFF/15-900 seconds (15 second increments)
Default: 60 seconds

[20: TOA] Transmit Overtime Alarm

Function: The Transmit Overtime Alarm warns when the Transmit Overtime Timer (TOT) is about to be exceeded. The red TX indicator LED (top of the radio)

flashes to indicate an alarm. The alarm can be set to a maximum time limit of 10 seconds and indicates the amount of time prior to the Transmit Overtime Timer expiring that the warning will begin.

Options: OFF/1S-10S
Default: OFF

[21: ROGER] Roger Beep

Function: Enables an audible roger beep prompt during transmission.
Options: OFF/BOT/EOT/BOTH
Default: OFF
BOT: Sets the roger beep prompt at the beginning of transmission
EOT: Sets the roger beep at the end of transmission
BOTH: Sets the roger beep at the beginning and end of transmission

[22: BEEP] Button Beeps

Function: Enables an audio prompt to alert the operator of a key press, input or fault.
Selectable: ON/OFF
Default: ON

[23: VOICE] Voice Guide

Function: Enable or disable voice prompts.
Options: OFF/ON
Default: ON

[24: BUSYLOCK] Busy Channel Lockout

Function: Enabling Busy Channel Lockout prevents the transceiver from transmitting on a selected channel while another station or group is transmitting on it.
Options: ON/OFF
Default: OFF

[25: COMPAND] Voice Compander

Function: The compander minimizes noise. Useful when transmitting over long distances.
Options: ON/OFF
Default: OFF

[26: CALL-ID] Caller ID

Function: Sets a Selective Group Call code to the current channel. Selective Call Codes are 3 to 6 digits. Call Codes can be set up through the programming software.
Options: 1-20 Groups
Default: 1

[27: CH-NAME] Channel Name

Function: Allows you to edit the name for the currently active channel. To edit a channel name, press [MENU] and choose the CH-NAME option. the name of the current channel will be in edit mode and the first character will flash to indicate it is currently being edited. Press the [UP] and [DOWN] keys to select the desired character, then press the [PF1] key to move to the next position. Press the [PF2] key to move back to the previous position. When you finish editing the name, press [MENU] to save.
Options: 6 Characters
Default: None

[28: CH-ADD] Add Memory Channel

Function: Adds a channel to the memory channel list.
Options: None
Default: None

[29: CH-DEL] Delete Memory Channel

Function: Deletes a channel from the memory channel list.
Options: None
Default: None

[30: SP-MUTE] Speaker Mute

Function: Selects the method to filter transmissions received on the current channel.
Options: QT/QT+DT/QT*DT
Default: QT
QT: Only those signals with a CTCSS tone or DCS code matching the selected channel will be heard through the speaker.
QT*DT: Transmissions will be filtered by either CTCSS/DCS tones OR a DTMF

tone of the current radio ID (followed by a # sign).

QT+DT: Transmissions will be filtered by both CTCSS/DCS tones AND a DTMF tone of the current radio ID (followed by a # sign).

[31: SIDETONE] Sidetone Setting

Function: Determines when DTMF tones transmitted by the radio are heard from the speaker. It can be configured if you want to hear all tones, only tones transmitted for a radio ID, or only tones other than those transmitted for a radio ID. Regardless of the setting, tones are still transmitted over the air and will be heard by other radios.

Options: OFF/DT-ST/ANI-ST/DT+ANI

Default: OFF

DT-ST: Only non-radio ID tones will be heard through the speaker.

ANI-ST: Only radio ID tones will be heard through the speaker. Tones entered manually from the keypad will not be heard.

DT+ANI: All tones transmitted will be heard from the speaker.

[32: ALERT] Tone Alert

Function: Activates the tone alert. Some relay systems used for single-tone pulse transmissions need a single-tone pulse signal to activate.
Options: 1750Hz/2100Hz/1000Hz/1450Hz
Default: 1750Hz
Special Reminder: When in transmit mode, you can send the single-tone pulse frequency you've selected by pressing the [PF2] key on the side of the radio.

[33: ID-EDIT] Edit Radio ID

Function: Sets the numeric radio ID that is sent during transmissions if the PTT-ID menu option is enabled. This ID must be a number and contain at least 3 digits and no more than 6 digits. The first digit cannot be 0. The default is 101.
Options: 0-9
Default: 101

[34: ID-DLY] ID-Delay

Function: Determines the amount of time in milliseconds to wait before sending the PTT-ID. This only applies to the ID that is sent at the beginning of the

transmission. It is ignored when PTT-ID is set to EOT (end of transmission).

Options: 100~3000ms

Default: 1000ms

[35: PTT-ID] Radio ID Setting

Function: Determines if the radio will send its Radio ID during transmit, and at what point it will be sent.

Options: BOT/EOT/BOTH

Default: OFF

BOT: Radio ID will be sent at the beginning of the transmission.

EOT: Radio ID will be sent at the end of the transmission.

BOTH: Radio ID will be sent at both the beginning and end of transmission.

[36: RING] Ring Time

Function: Specifies the length of time to prompt when DTMF signals have been decoded.

Selectable: OFF/1S-10S (seconds)

Default: 5S

[37: STARTUP] Power On Message

Function: Select the item displayed when the radio is powered on.
Options: MESSAGE/VOLTAGE
Default: MESSAGE
MESSAGE: Customized Message
VOLTAGE: Battery voltage

[38: ST-MSG] Custom Power On Message

Function: Allows you to customize the Power On Message. To edit the message, press [MENU] and choose the ST-MSG option. the current message will be in edit mode and the first character will flash to indicate it is currently being edited. Press the [UP] and [DOWN] keys to select the desired character, then press the [PF1] key to move to the next position. Press the [PF2] key to move back to the previous position. When you finish editing the message, press [MENU] to save.
Options: 8 Characters

Default: None

[39: TIMER] Stopwatch Timer

Function: Activates the timer feature. If ON, activate the timer by short pressing [EXIT] in standby mode. Press [MENU] to stop the timer. Press the [EXIT], [UP] or [DOWN] keys to exit the timer.
Options: ON/OFF
Default: OFF

[40: RPT-TONE] Squelch Tone

Function: Enables or disables the squelch tail sent to the receiving radio at the end of a transmission.
Options: OFF/ON
Default: ON

[41: AUTOLOCK] Auto Lock

Function: Automatically locks the keypad after a specified time. This can be set from 10 to 60 seconds, in 10 second increments.

Options: OFF/10-60S
Default: OFF
Note: To unlock the radio, hold the [EXIT] key for 2 seconds.

[42: LOCKMODE] Lock Mode

Function: Select which keys are disabled when the radio is locked.
Options: KEY/KEY+PTT/KEY+ENC/ALL
Default: KEY
KEY: Locks the front keypad and [PF1] and [PF2] side keys.
KEY+PTT: Locks the front keypad, [PF1], [PF2] and [TOP] keys, and [PTT].
KEY+ENC: Locks the front keypad, [PF1] and [PF2] side keys, and channel knob.
ALL: Locks the front keypad, [PF1], [PF2], [TOP] keys, [PTT], and channel knob.
Note: To lock or unlock the radio, hold the [#LOCK] key for 2 seconds.

[43: PF1-SHRT] Side Key PF1 Short Press Assignment

Function: Assigns a function to the [PF1] side key. A function is assigned to a short button press.
Options: SCAN/BACK-LT/VOX/TXPOWER/CALL/FLASHLT/MONITOR/

CH-DISP/ALARM/SOS/OFF
Default: BACK-LT

[44: PF1-LONG] Side Key PF1 Long Press Assignment

Function: Assigns a function to the [PF1] side key. A function is assigned to a long button press.
Options: SCAN/BACK-LT/VOX/TXPOWER/CALL/FLASHLT/MONITOR/ CH-DISP/ALARM/SOS/OFF
Default: SCAN

[45: PF2-SHRT] Side Key PF2 Short Press Assignment

Function: Assigns a function to the [PF2] side key. A function is assigned to a short button press.
Options: SCAN/BACK-LT/VOX/TXPOWER/CALL/FLASHLT/MONITOR/ CH-DISP/ALARM/SOS/OFF
Default: FLASHLT

[46: PF2-LONG] Side Key PF2 Long Press Assignment

Function: Assigns a function to the [PF2] side key. A function is assigned to a long button press.
Options: SCAN/BACK-LT/VOX/TXPOWER/CALL/FLASHLT/MONITOR/CH-DISP/ALARM/SOS/OFF
Default: MONITOR

[47: TOP-SHRT] Top Key Short Press Assignment

Function: Assigns a function to the [TOP] key. A function is assigned to a short button press.
Options: SCAN/BACK-LT/VOX/TXPOWER/CALL/FLASHLT/MONITOR/CH-DISP/ALARM/SOS/OFF
Default: OFF

[48: TOP-LONG] Top Key Long Press Assignment

Function: Assigns a function to the [TOP] key. A function is assigned to a long button press.
Options: SCAN/BACK-LT/VOX/TXPOWER/CALL/FLASHLT/MONITOR/CH-DISP/ALARM/SOS/OFF

Default: OFF

[49: VOLTAGE] Voltage

Function: Displays the current battery voltage.
Options: None
Default: None

[50: RESET] Factory Reset

Function: Resets the transceiver to factory defaults.
Options: VFO/ALL
Default: VFO
VFO: Resets function settings to factory defaults but retains channel parameters.
ALL: Resets all of the function settings and channel parameters to factory defaults.

DTMF Encoding

The KG-S86B features dual-tone multi-frequency (DTMF) encoding. This enables the radio to perform a number of useful signaling operations.

Sending a Radio ID

The KG-S86B is capable of automatically sending a radio ID number using DTMF functionality. When activated, the radio ID will be sent during a transmission. When the radio ID is transmitted, radios capable of displaying a radio ID will typically show the ID number on the display while receiving the transmission. A radio ID could be referred to as an ANI or a PTT ID.

The KG-S86B has three menu options related to configuring the radio ID: PTT-ID (page 46), ID-EDIT (page 45), and ID-DLY (page 45).

To set a radio ID, press [MENU] and use the Channel Knob or the [UP] / [DOWN] keys to choose the ID-EDIT menu option (page 45). Press [MENU], and turn the Channel Knob or press the [UP] / [DOWN] keys to select the first digit of the desired number. Use the [PF1] side key to move to the next character and select the next digit.

The [PF2] side key will move to the previous character. When you finish entering the number, press [MENU] to save and [EXIT] to return to standby.

The radio ID must be at least 3 digits and a maximum of 6 digits in length.

To transmit the radio ID, press [MENU] and use the Channel Knob or the [UP] / [DOWN] keys to choose the PTT-ID menu option (page 46). Press [MENU], and turn the Channel Knob or press the [UP] / [DOWN] keys to choose whether to transmit the ID at the beginning of transmission (BOT), end of transmission (EOT), or both beginning and end (BOT). Press [MENU] to confirm and [EXIT] to return to standby.

You can delay transmission of the radio ID for a specific time using the ID-DLY menu option (page 45). This delay time can be set to one of 30 levels in 100ms increments.

Calling a specific radio using an ID

The KG-S86B also supports the ability to call another radio directly, using its Radio ID. To enable this function, you must activate and configure all radios in your fleet to transmit the Radio ID (see Sending a Radio ID on page 53) and select either the

QT, QT+DT or QT*DT DTMF filter option in SP-MUTE (page 43).

To call a specific radio, you must know its radio ID. After pressing PTT and allowing your radio time to transmit its radio ID, use a PF key (see Transmitting DTMF Tones on page 55) to send the pre-programmed radio ID that you are calling.

Once a KG-S86B receives a DTMF signal matching its radio ID, it will play a ring sound and then open the speaker to allow the incoming transmission to be heard. The length of the ring sound can be set using the RING option in the programming software.

Up to 20 Call ID tones can be assigned using the programming software.

Transmitting DTMF Tones

The KG-S86B provides a way to send pre-configured DTMF tones via a programmable function (PF) key. First, assign a PF key to the CALL option (pp. 49-51). This is available as an option for the [PF1], [PF2] or the [TOP] key. The programming software allows the defining of up to 20 Call ID tones. Each channel can be assigned a Call ID tone using the CALL-ID item in the programming software.

Pressing the assigned CALL key will transmit the Call ID tone defined for the channel. There is no need to hold the PTT while pressing the CALL key.

Alert Tone (Single-Tone Pulse Frequency)

Some repeaters require a tone burst to be transmitted to signal the repeater to transmit. This is not often used in the United States and is more common in Europe.

The KG-S86B supports this functionality. Use the ALERT menu option (page 44) to select the specific hertz of the tone that is needed (1750Hz is most common and is the default). To send the tone, press the [PF2] side key while transmitting.

Setting Non-Standard CTCSS or DCS

How to Set Non-Standard CTCSS

The KG-S86B supports non-standard CTCSS tones in the range of 65.0-255.0Hz with a minimum spacing of 0.1Hz. Standard CTCSS tones may be enabled and assigned to a channel from the radio menu or with the user programming software. Non-standard CTCSS tones can only be set in the programming software.

For example, to set the receiving CTCSS tone to 100.5Hz:

In the programming software, select the desired channel row and choose the RX-CTCSS column. Highlight the current tone, press the backspace key to remove it, enter 100.5 using your computer keyboard and press return.

How to Set Non-Standard DCS

The KG-S86B supports non-standard DCS codes ranging from 000-766, except any code with the digit 8 or 9. For example, 680.719 is not a legitimate non-standard DCS code. Standard DCS codes may be enabled and assigned to a channel from the radio menu or with the user programming software. Non-standard CTCSS codes can only be set in the programming software.

When entering a non-standard DCS code, add the letter I after the code number to set it as a positive code or the letter N to set it as a negative code.

Example 1: Set the receive DCS as D105N

In the programming software, select the desired channel row and choose the RX-DCS

column. Highlight the current code, press the backspace key to remove it, enter D105N using your computer keyboard and press return.

Example 2: Set the receive DCS as D105I

In the programming software, select the desired channel row and choose the RX-DCS column. Highlight the current code, press the backspace key to remove it, enter D105I using your computer keyboard and press return.

Troubleshooting

Before assuming your KG-S86B is defective, please check the following list of possible problems and solutions. The RESET option provided in the menu can be used to restore factory standard settings and programming, and will often solve issues.

Problem	Solution
Receive indicator is on but no sound is heard.	■ Check volume level. ■ Disable CTCSS/DCS or be sure setting matches incoming transmission. ■ Check squelch settings.
Keypad is unresponsive	■ Check if keypad has been locked. ■ Check if other keys are currently pressed
Unwanted interference is being received	■ Enable CTCSS or DCS tone to filter out unwanted transmissions. ■ Use a different channel
Transceiver transmits without PTT being pressed	Check if the VOX hands-free mode is active. If intentionally using VOX mode, adjust the sensitivity level.

Troubleshooting

Problem	Solution
Cannot power on	■ Check that the battery pack is attached correctly. ■ Check that the battery pack is fully charged.
Battery life lower than expected	■ Be sure the charger indicates the battery is fully charged. ■ The battery pack capacity will naturally diminish over a number of charge cycles. This is the case with all lithium batteries.

Specifications

Entire Radio	
Frequency Range	TX: 450-470 MHz / RX: 400-480 MHz (UHF)
Memory Channels	400
Frequency Stability	±2.5 PPM
Work Temperature	-30°C~+60°C / -22°F~140°F
Antenna Impedance	50Ω
Power Supply	7.4VDC
Weight	8.32oz / 236g
Size	4.53 × 2.14 × 1.36 (in) / 115 × 54.3 × 34.6 (mm)
Dust/Waterproof	IP65

Technical Information

Receiver	
Adjacent Channel Selectivity	≤60dB
Inter-modulation	≤65dB
Resistance	≤84dB
Audio Response	+1~3dB (0.3~3KHz)
Audio Distortion	≤5%
Output Power	500mW
Sensitivity	0.16μV (12dB SINAD)

Transmitter	
RF Carrier Power	2W
Adjacent Channel Power	≥60dB
Spurious	≤-30dBm
Audio Modulation	+3dB (0.3~2.55KHz)
Max Frequency Offset	±2.5KHz
Frequency Stability	±2.5ppm
Modulation Distortion	≤10%

Standard CTCSS and DCS Tones

The following is a list of the standard CTCSS and DCS tones supported by the KG-S86B. Many radios display a number instead of a specific tone. The number to the left of the tone matches what is used by some manufacturers.

CTCSS									
1	67.0	11	94.8	21	131.8	31	171.3	41	203.5
2	69.3	12	97.4	22	136.5	32	173.8	42	206.5
3	71.9	13	100.0	23	141.3	33	177.3	43	210.7
4	74.4	14	103.5	24	146.2	34	179.9	44	218.1
5	77.0	15	107.2	25	151.4	35	183.5	45	225.7
6	79.7	16	110.9	26	156.7	36	186.2	46	229.1
7	82.5	17	114.8	27	159.8	37	189.9	47	233.6
8	85.4	18	118.8	28	162.2	38	192.8	48	241.8
9	88.5	19	123.0	29	165.5	39	196.6	49	250.3
10	91 5	20	127 3.	30	167.9	40	199.5	50	254.1

Technical Information

DCS codes ending in *N* are positive. Negative DCS codes end in *I*. The KG-S86B includes 105 positive and 105 negative codes.

DCS

1	D023N	16	D074N	31	D165N	46	D261N	61	D356N	76	D462N	91	D627N
2	D025N	17	D114N	32	D172N	47	D263N	62	D364N	77	D464N	92	D631N
3	D026N	18	D115N	33	D174N	48	D265N	63	D365N	78	D465N	93	D632N
4	D031N	19	D116N	34	D205N	49	D266N	64	D371N	79	D466N	94	D645N
5	D032N	20	D122N	35	D212N	50	D271N	65	D411N	80	D503N	95	D654N
6	D036N	21	D125N	36	D223N	51	D274N	66	D412N	81	D506N	96	D662N
7	D043N	22	D131N	37	D225N	52	D306N	67	D413N	82	D516N	97	D664N
8	D047N	23	D132N	38	D226N	53	D311N	68	D423N	83	D523N	98	D703N
9	D051N	24	D134N	39	D243N	54	D315N	69	D431N	84	D526N	99	D712N
10	D053N	25	D143N	40	D244N	55	D325N	70	D432N	85	D532N	100	D723N
11	D054N	26	D145N	41	D245N	56	D331N	71	D445N	86	D546N	101	D731N
12	D065N	27	D152N	42	D246N	57	D332N	72	D446N	87	D565N	102	D732N
13	D071N	28	D155N	43	D251N	58	D343N	73	D452N	88	D606N	103	D734N
14	D072N	29	D156N	44	D252N	59	D346N	74	D454N	89	D612N	104	D743N
15	D073N	30	D162N	45	D255N	60	D351N	75	D455N	90	D624N	105	D754N

Default Frequencies

The following channels are pre-programmed to default business frequencies.

Channel	Frequency	CTCSS Tone	Channel	Frequency	CTCSS Tone
CH-01	464.5500	67.0	CH-09	464.5000	67.0
CH-02	467.9250	67.0	CH-10	467.7625	67.0
CH-03	461.0375	67.0	CH-11	467.8125	67.0
CH-04	461.0625	67.0	CH-12	467.8500	67.0
CH-05	461.0875	67.0	CH-13	467.8750	67.0
CH-06	461.1125	67.0	CH-14	467.9000	67.0
CH-07	461.1375	67.0	CH-15	461.1875	67.0
CH-08	461.1625	67.0	CH-16	461.2125	67.0

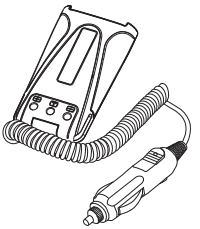
Available Frequencies

The KG-S86B supports 99 business frequencies via programming software.

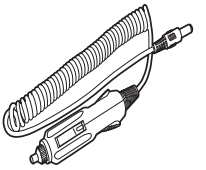
Available Frequencies						
451.1875	452.7625	457.5125	461.2375	462.7875	466.0375	466.2875
451.2375	452.8625	457.7625	461.2625	462.8375	462.8125	466.3125
451.2875	456.1875	457.8625	461.2875	462.8625	466.0625	466.3375
451.3375	456.2375	461.0375	461.3125	462.8875	466.0875	466.3625
451.4375	456.2875	461.0625	461.3375	462.9125	466.1125	467.1875
451.5375	456.3375	461.0875	461.3625	464.4875	466.1375	467.4625
451.6375	456.4375	461.1125	462.1875	464.5000	466.1625	467.4875
452.3125	456.5375	461.1375	462.4625	464.5125	466.1875	467.5125
452.4125	456.6375	461.1625	462.4875	464.5375	466.2125	467.7625
452.5125	457.3125	461.1875	462.5125	464.5500	466.2375	467.7875
452.5375	457.4125	461.2125	462.7625	464.5625	466.2625	467.8125

Available Frequencies						
467.8375	467.8875	468.2125	468.4125	468.6125	469.5375	
467.8500	467.9000	468.2625	468.4625	468.6625	469.5625	
467.8625	467.9125	468.3125	468.5125	469.4875		
467.8750	467.9250	468.3625	468.5625	469.5125		

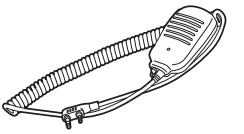
Optional Accessories



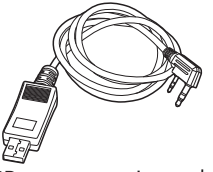
Eliminator



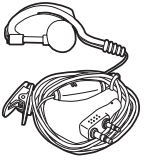
Car charger



Speaker/Mic



USB programming cable



Headset

Shop Wouxun Accessories:

www.buytwowayradios.com/accessories/by-radio-brand/wouxun-radio-accessories.html

We warrant this product against defects in material and workmanship as follows:

Radio and its original primary components for a period of one (1) year from date of purchase.

Accessories (including battery, charger, belt clip, antenna and adapter) for a period of six (6) months from date of purchase.

This warranty is limited to the repair and replacement of the defective components and is not valid if the radio has been tampered with, misused, abused, used with unapproved accessories, subjected to unauthorized disassembly, unauthorized repair, replacement of unauthorized parts, unavoidable conditions, human destruction, water damage or environmental damage. This warranty is void if the serial number is defaced or altered.

If service, repair or replacement is required within the warranty period, such repair or replacement will be made free of charge by the dealer through whom the equipment was purchased. If the owner requires any service or repair from any dealer through whom the equipment was not purchased, the cost of repair must be made by the owner.

This warranty is valid for the original purchaser or owner of the product and is not

transferable.

THIS LIMITED WARRANTY IS THE ENTIRE WARRANTY FOR THIS PRODUCT AND IS IN LIEU OF ALL OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY DOES NOT COVER OR PROVIDE FOR THE REIMBURSEMENT OR PAYMENT OF ANY DAMAGES, INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGES RELATED TO THE USE OF THIS PRODUCT. Some states do not allow this exclusion or limitation of damages so the above limitation or exclusion may not apply to you. This warranty is valid only within the United States of America.

Note: Product features, specifications and warranty terms are subject to revision by the manufacturer without notice. We are not responsible for unintentional errors or omissions on product packaging.

Version: KG-S86B-2204-V3