

Safety Instructions

•Hazardous Environments

Turn off the transceiver when refueling or in flammable (gas/dust) environments.

Do not store spare fuel containers near the transceiver if installed in a vehicle trunk.

•RF Exposure Compliance

Maintain $\geq 50\text{cm}$ distance from the antenna during transmission.

Do not operate the transceiver when anyone is touching the antenna.

•Explosive Materials

Prohibited within 150m (500ft) of blasting zones or explosives transport.

Turn off the transceiver while in an area where blasting is taking place or where signs are posted saying [Turn Off Two-Way Radios].

Key Precautions

•Power Supply: Use 13.8V DC ($\pm 15\%$) only. Connecting to 24V batteries will damage the unit.

•Installation:

Verify vehicle battery polarity before connection.

Use only manufacturer-provided mounting brackets.

•Transmission:

Avoid prolonged high-power use to prevent overheating.

Do not transmit without an antenna connected.

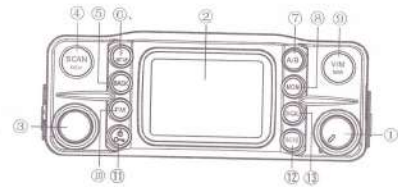
•Environment:

Keep away from extreme heat, moisture, or dust.

Discontinue use if abnormal odors/smoke are detected.

Device Overview

Front Panel Controls



①VOL Knob: Adjust speaker volume

②Full-color LCD Display

③DIAL Knob:

Tune frequencies/channels

Menu Navigation:

Short press: Enters selected menu item

Rotate: Scrolls through options

④SCAN (REV) Key:

Short press: Start scanning

Rotating the [DIAL] knob during scan mode reverses the scan direction.

Long press: Start reverse frequency

⑤BACK Key:

Press to go back to the previous screen or exit the current operation.

⑥F(SETUP) Key:

Press to access the setup menu.

Use the [DIAL] knob to navigate and configure options.

⑦A/B Key:

Switch between dual-band operation.

⑧MONI (Monitor) Key:

Hold [MONI] to temporarily unmute and monitor the current channel.

⑨V/M (MW) Key:

Each press switches between:

Load impedance: 8Ω

Auto-disables internal speaker when connected

Note: For enhanced audio output

④ DC POWER Input with Fuse Box

Input: 13.8V DC (vehicle/base station power)

Wiring:

Red wire (+): Positive terminal

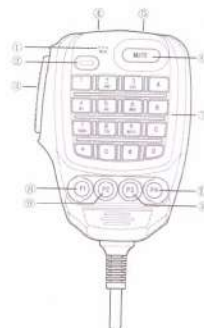
Black wire (-): Negative terminal

Requirements:

Minimum 12A current supply

Use included power cable

Handheld Microphone Controls



① MIC (Microphone)

Speak into the microphone during transmission

②TX (Transmit) LED

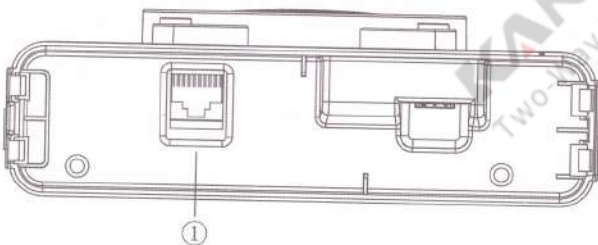
Illuminates red when PTT is pressed

③PTT (Push-To-Talk)

Normal Mode: Hold to transmit, release to receive

Setup Mode: Press to exit configuration

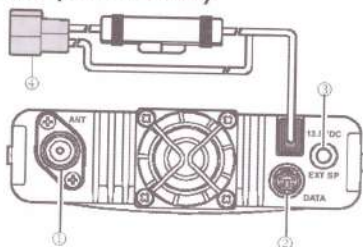
Front Panel (Main Unit)



①CONTROL Port

Connect the control cable to this port for panel-to-main unit communication

Rear Panel (Main Unit)



①ANTENNA Port

Connect N-type external antenna to this interface

② EXPANSION LINK Interface

TNC device connection via 6-pin mini-DIN connector
(Functionality reserved for future use)

③ EXT SPKR (External Speaker) Jack

Connection: 3.5mm 2-conductor audio plug

Specifications:

- Frequency Mode
- Memory Channel Mode
- GMRS Channel Mode

⑩ FM Key:

Short press: Turns the FM radio function ON/OFF

Long press: Activates FM auto-scan mode

Rotate the [DIAL] knob during scanning to manually search for stations.

⑪ POWER :

Hold 2 sec to turn on/off.

After turning on, short press to lock or unlock the keyboard.

⑫ SOS Key:

Press to activate emergency alarm.

Press [BACK] to cancel alarm.

If an alarm code is set:

Your radio will begin transmitting and sounding an alarm, other radios with the same code will also sound alarms.

⑬ SQL (Squelch) Key:

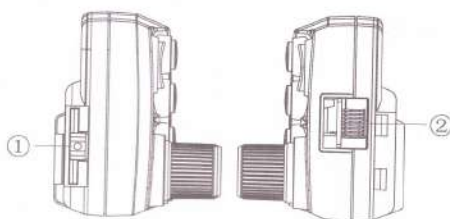
Press [SQL] to enter squelch adjustment mode,

Rotate [DIAL] to set squelch level.

Higher values mute background noise when no signal is received.

Front Panel Layout

Left Side and Right Side of Panel



① Panel Release Mechanism:

Secure-disconnect for control head

Operation: Depress button to unlock

Slide panel forward for removal

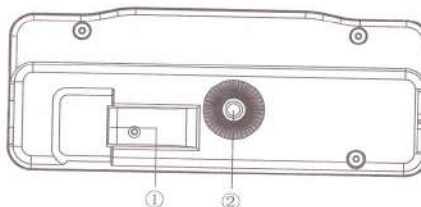
Audible click confirms engagement

② MIC (Microphone) Interface:

For DTMF microphone connection (supplied)

Accepts programming cable for channel/data configuration

Rear Panel:



① CONTROL Port:

Connect the control cable to this port for main unit communication

② Mounting Threads:

Designed for panel bracket installation

④ DWN (Down)

Decrease the frequency/channel by the set step frequency

⑤ UP

Increases frequency/channel by the set step frequency

⑥ MUTE

Function reserved

⑦ DTMF Keypad

Transmit Mode: Enter/send DTMF sequences

Standby Mode: Input frequencies/channel numbers

⑧ P1 (Band Select)

Toggles operational band (=front panel [A/B])

⑨ P2 (Mode Toggle)

Switches between Frequency/Memory modes (= front panel [V/M])

⑩ P3 (Menu Access)

Opens function menu (= front panel [F(SETUP)])

⑪ P4 (Return)

Returns to previous screen (=front panel [BACK])

Display Screen



Icon	Description
108.0MHz	When the FM radio is turned on, the FM frequency is displayed
	It appears when the keyboard is locked
12.9V	Display the DC voltage of the power supply
MAIN	Current operating frequency band
M	Power display, H-high power; M-medium power; L-low power
W	Bandwidth display, W-broad band; N-narrow band
D	It appears when CTCSS/DCS + signaling functions are enabled in receive mode
023N	Tone codes appear when CTCSS/DCS is on
C	It appears when the voice compander activated
scram	It appears when the scrambler is activated
R	It appears when the frequency reverse is activated
Am	Activates when operating frequency is set within Aviation Band
S	It appears when the scan is activated
146.55000	Display Frequency Values, Memory Channel Name or Function Name
VFO	It appears when in VFO (Variable Frequency Oscillator) mode
	Signal strength is shown in green during reception
	Selected power level displays in red when transmitting
	Volume Level

Basic Operations

Power On/Off

1. Hold [POWER()] for 2 seconds.

When you turn on the radio, the startup message will be displayed on the screen for about 2 seconds. Then the screen will switch to the normal operating frequency display.

2. To shut down, hold [POWER()] again for 2 seconds.

Volume Adjustment Instructions

Volume adjustments apply uniformly to both Band A and Band B.

Operation:

Clockwise rotation VOL Knob → Increases volume

Counterclockwise rotation VOL Knob → Decreases volume

Squelch Adjustment

Band A and Band B have separate squelch settings

Adjustments do not affect the opposite band

1. Operation:

Press [SQL] → Rotate [DIAL] to set threshold

Press [DIAL] to confirm. Then Press the [BACK] to exit

2. Squelch Level Function Purpose

Mutes speaker audio when no valid signal is detected

Ensures noise-free operation by opening only for qualified signals

3. Adjustment Principle

Higher Squelch Level = Stronger signal required to unmute

Band Selection (Dual-Receive Operation)

Primary Band (Tx-Capable)

Indicated by **MAIN** above the active band

Short-press [A/B], toggles primary band assignment

Operating Mode Selection (Independent for Band A/B)

1. Available Modes

Each band (A and B) can independently operate in:

VFO (Frequency) Mode

Memory (MR) Mode

GMRS Mode

2. Short-press [V/M] to switch

●VFO (Frequency) Mode Operation

① Manual Frequency Tuning

Rotate [DIAL] Knob:

Clockwise → Increases frequency

Counterclockwise → Decreases frequency

② Alternative Tuning Methods

Mic [UP]/[DOWN] Keys:

Short-press: Steps frequency up/down

③ Direct Keypad Entry:

Press mic number keys to input exact frequency

Transmission

1. Select frequency/channel

2. Hold microphone PTT to speak

TX Power Level Indication

Visual Feedback:

Real-time power bar graph displayed for the active transmit band

3. Microphone Best Practices

Optimal Distance: 5 cm (2 inches) from lips

Use normal conversation volume

4. After you finish speaking, release the PTT

Transmit Power Selection Guide

1. Recommended Power Settings

Optimal Practice: Use the lowest sufficient power for clear communication. Reduces interference with other frequencies.

2. Band A and Band B can be set to different power levels

Power Adjustment Steps:

① Short-press [DIAL]: Enter Menu

② Rotate [DIAL]: Select Menu Item 10 (Power Level)

③ Short-press [DIAL]: Enter power setting mode

④ Rotate [DIAL]:

To choose: High Power or Medium Power or Low Power

⑤ Confirm/Cancel:

Short-press [DIAL]: Save setting

Short-press [BACK]: Exit without saving

⑥ Exit Menu: Short-press [BACK]

Disclaimer

Specifications subject to change without notice.

Appendix: GMRS Channel Table

Ch. Number		TX Freq (MHz)	RX Freq (MHz)
1	GMRS1	462.5625	462.5625
2	GMRS2	462.5875	462.5875
3	GMRS3	462.6125	462.6125
4	GMRS4	462.6375	462.6375
5	GMRS5	462.6625	462.6625
6	GMRS6	462.6875	462.6875
7	GMRS7	462.7125	462.7125
8	GMRS8	(Rx Only)	467.5625
9	GMRS9	(Rx Only)	467.5875
10	GMRS10	(Rx Only)	467.6125
11	GMRS11	(Rx Only)	467.6375
12	GMRS12	(Rx Only)	467.6625
13	GMRS13	(Rx Only)	467.6875
14	GMRS14	(Rx Only)	467.7125
15	GMRS15	462.5500	462.5500
16	GMRS16	462.5750	462.5750
17	GMRS17	462.6000	462.6000
18	GMRS18	462.6250	462.6250
19	GMRS19	462.6500	462.6500
20	GMRS20	462.6750	462.6750
21	GMRS21	462.7000	462.7000
22	GMRS22	462.7250	462.7250
23	REPT15	467.5500	462.5500
24	REPT16	467.5750	462.5750
25	REPT17	467.6000	462.6000
26	REPT18	467.6250	462.6250
27	REPT19	467.6500	462.6500
28	REPT20	467.6750	462.6750
29	REPT21	467.7000	462.7000
30	REPT22	467.7250	462.7250
31	WX01	(Rx Only)	162.5500
32	WX02	(Rx Only)	162.4000
33	WX03	(Rx Only)	162.4750
34	WX04	(Rx Only)	162.4250
35	WX05	(Rx Only)	162.4500
36	WX06	(Rx Only)	162.5000
37	WX07	(Rx Only)	162.5250
38	WX08	(Rx Only)	161.6500
39	WX09	(Rx Only)	161.7750
40	WX10	(Rx Only)	163.2750

Context Menu Setting Table

No. of context menu	Display	Description
01	RX-CTCSS	Receive - Analog Tone Squelch
02	RX-DCSN	Receive - Digital Coded Squelch
03	RX-DCSI	Receive - Digital Coded Squelch
04	TX-CTCSS	Transmit - CTCSS Code
05	TX-DCSN	Transmit - DCS Code
06	TX-DCSI	Transmit - DCS Code
07	RX-MODE	Set the receive mode
08	TX-DTMF1	Set the DTMF code group sent automatically when PTT is pressed
09	TX-DTMF2	Set the DTMF code group sent automatically when PTT is released
10	TX-POWER	Transmit Power
11	WIDE/NA	Bandwidth
12	COMP	Voice Companding
13	SRMR	Scrambler
14	SFT	Frequency Shift Direction
15	OFFSET	Frequency Shift Offset Amount
16	STEP	Frequency Step Size Setup
17	CH-MEM	Memorize Channel
18	CH-DEL	Delete Channel
19	SQ	Squelch Level
20	RF-SW	Turn the current channel ON/OFF
21	BACKLIGHT	Set the backlight activation mode
22	KEY-BEEP	Keypad Voice Prompt
23	RING-TIME	Adjust call alert duration
24	BCL	Busy Channel Lockout
25	TOT	TX Time Out Timer
26	TONE	Signal signaling
27	DTMF-TIME	DTMF transmission time
28	LCD-BRIGHT	Set LCD panel intensity
29	LANGUAGE	Screen Prompts display
30	DATA-REST	Initialize to Factory Defaults
31	DTMF-L	DTMF group
32	ANI-ID	ANI ID Code

Technical Specifications

The specification are subject to changes with the technical development without notice.

Basic Specifications	
Channel Memory Capacity	Independent 128-Channel Storage per Band (A/B)
Modulation	11K&F3E (12.5KHz) , 16K&F3E (25KHz)
Antenna Impedance	50Ω
Frequency Stability	±2.5ppm @ -10°C ~ +60°C
Operate Temperature Range	-20°C ~ +60°C
Input Voltage	13.8V DC (±15%)
Dimensions	150 X 55 X 190mm
Weight	1000g
Receiving	
Frequency Range	FM: 76~108MHz AM: 108~135.9975MHz VHF1: 136~173.9975MHz VHF2: 174~299.9975MHz UHF1: 300~399.9975MHz UHF2: 400~469.9975MHz UHF3: 470~600.0000MHz
Sensitivity	≤0.2μV (12dB SINAD)
Squelch Sensitivity	≤0.16μV
Adjacent Channel Selectivity	≥60dB
Max Audio Output	2W @ 8Ω 5% distortion
Transmitting	
Frequency Range	VHF: 144~148MHz (optional 136~174MHz) UHF: 430~440MHz (optional 400~490MHz)
Output Power	VHF: 50/20/10W UHF: 45/20/10W
Modulation Limiting	≤5KHz(25KHz), ≤2.5KHz(12.5KHz)
Adjacent Channel Power	≥60dB
Modulation Distortion	≤5%

KANGLONG
Two-Way Radio Manufacturer