Mini Color screen

MOBILE RADIO

Detachable Front Panel

▶ USER'S Manual

Thank you for your purchase of the product.
This multi-band radio will deliver instant reliable communication.
Please read this manual carefully before use!

BEFORE PROCEEDING INSURE:

- Qualified technicians shall service this equipment only. Do not modify the radio for any reason.
- Use only orginal supplied or approved accessories.
- Turn off your radio prior to entering any area with explosive and flammable materials. Do NOT USE your transceiver at a gas/fuel station.
- For vehicles with an air bag, do not mount your radio in the area over an air bag or in the air bag deployment area.
- Do not expose the radio to direct sunlight over a long time, nor place it close to a heating source.
- If the unit emits smoke or an odor, you should immediately cut off the power supply. Then send the radio to the nearest service center or dealer.
- Do not operate the mobile transceiver on high power unless it is necessary. Do not transmit for long periods of time, as it may overheat the transceiver.
- Keep the unit away from dusty, damp and wet environments.
- Use the correct power supply (~13.8V); do not use incorrect or higher voltage (e.g. 24V).

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Getting Started

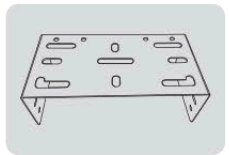
■ Unpacking and Inspecting

- Please check the packaging of your radio for any signs of damage.
- Carefully open the box, and confirm your received the items listed below.
- If you find the radio or the included accessories are damaged or lost, immediately contact your dealer.

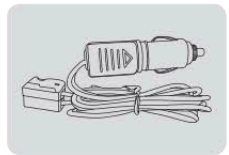
What's in the Box

Mobile Radio

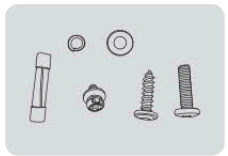
Microphone



Mounting Bracket

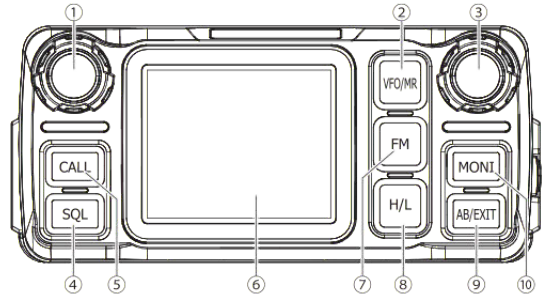


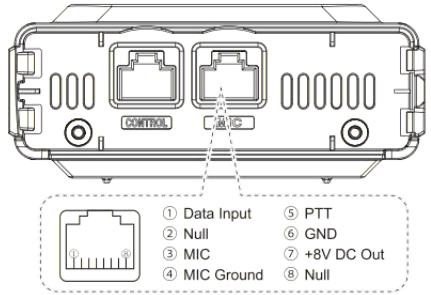
Power Cable



Mounting Screws and Fuse

■ Overview of the Front Panel





① Power, On/Off Press + Volume Knob
② V/M Mode Switch (Channel/Frequency)
③ Confirm Key Press +Main Selector (Menu Knob)
④ Squelch function
⑤ Call key
⑥ Display screen
⑦ FM radio function key
⑧ High / Low Power Switch
⑨ Exit Menu + A/B signal switching + alarm function
⑩ Monitor function

[CALL] : when in standby, press to send caller ID (ANI) in the selected signaling mode; while transmitting, press to send activate signaling.

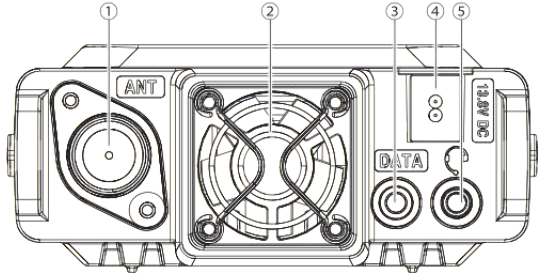
[MONI] : press to turn on the squelch, repeat to turn off the squelch.

[VFO/MR] : press to switch between channel mode and frequency mode.

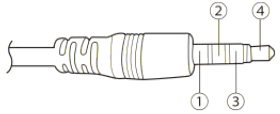
[AB/EXIT] : press to choose between A or B frequencies --- Or exit function mode.

[FM] : press to enter and exit FM radio.

■ Overview of the Rear Ports



① SO-239 RF Antenna Connector: Connects to PL-259 Antennas
② Cooling Fan
③ DATA, Programming Jack
④ DC Power Input (13.8V–7A Peak)
⑤ TRRS Line Out: Includes PTT/Microphone/Audio-out/GND

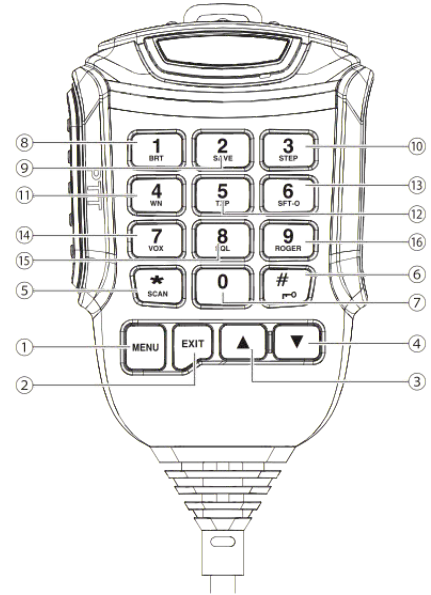


TRRS Line-Out Connector

① GND ② SP
③ MIC ④ PTT

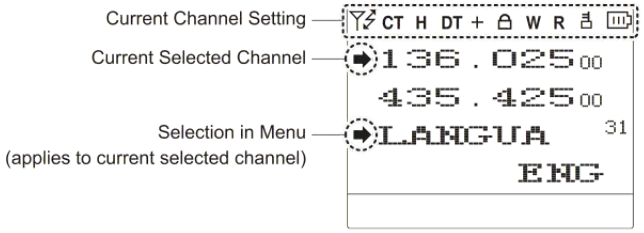
■ Hand Held MIC Keys and Description

① **"MENU"** : Function key
VFO/MR Toggle (Long Press)
② **"EXIT"** : Exit the AB channel switch, alarm function
Alarm Activate (Long Press)
③ **"UP"** : Higher frequency
④ **"DOWN"** : Lower frequency
⑤ **"*/SCAN"** : Scanning function
⑥ **"#/LOCK"** : High / Low Power Toggle
Keyboard Lock (Long Press)
⑦ **"0"** : Number 0
⑧ **"1"** : Number 1
⑨ **"2"** : Number 2
⑩ **"3"** : Number 3
⑪ **"4"** : Number 4
⑫ **"5"** : Number 5
⑬ **"6"** : Number 6
⑭ **"7"** : Number 7
⑮ **"8"** : Number 8
⑯ **"9"** : Number 9



■ Color Display and Icon Descriptions

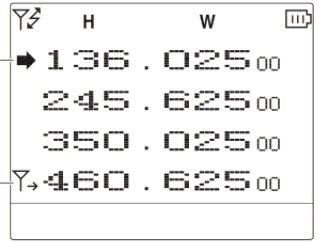
The Top Line on the LCD will show the current selected channel's settings at a glimpse:



Icon	Description	Icon	Description	Icon	Description
	Channel allowed to TX & RX	DCS	DCS Enabled (TX,RX or Both)	+	Positive Offset (Freq. Mode)
	Channel allowed to RX Only	L	Transmit Power: Low	–	Negative Offset (Freq. Mode)
	Channel allowed to TX Only	H	Transmit Power: High	±	Offset Enabled (Chan. Mode)
	Channel disabled to TX or RX	2T	2Tone Calling Enabled	N	Channel set to Narrowband
	Keypad is Locked	5T	5Tone Calling Enabled	W	Channel set to Wideband
CT	CTCSS Enabled (TX, RX or Both)	DT	DTMF Calling Enabled	R	Channel Reverse Enabled
	Battery Strength (Weak Battery Indicator)				

Main frequency indicator

Alternate 'watched' frequencies indicator



Dual, Tri or Quad Watch selected in "Menu 0: TMR".

Custom Boot Message-editable via PC Programming

Current Voltage detected from the power source

Strength Meter for the incoming signal

Numerical scale for the incoming transmission intensity

Meter for the transmit output power - (High or Low Power inidcator)

Numerical scale for microphone transmit audio level intensity

Microphone transmit audio level intensity

Antenna Basics

Your Mobile Radio Kit does not include an Antenna. It is VERY Important to NOT transmit without a antenna or dummy load attached to the mobile radio. Doing so, will cause harm to the internal components of your radio.

You will want to choose a suitable antenna for the bands you plan on transmitting and receiving on.

If you plan on transmitting on 145MHz you will want to ensure you have picked an antenna that states it is capable of working with 145MHz. If an antenna is not properly tuned for the frequency you transmit on – it can cause damage with the reflected power going back into the radio.

Pick an antenna with SWR of less than 1.5:1 to safely transmit.

Grounding Plane

Antennas require an appropriate grounding plane to properly work.

Magnetically Mounted Antennas

These antennas must be grounded to a metal surface, such as a vehicle body. Magnetic base antennas do not properly operate unless they are fully magnetically grounded first.

NMO or PL-259 Base Antennas

These antennas will normally require a base or mobile hardware kit. These kits are grounded either through: drill or clamp inserts on vehicles, magnetically mounted, or available as stationary base hardware kits. Some antennas may include a base station grounding plane kit.

Antenna Requirements

Antenna SWR Rating : 1.5:1 or less (on the radio frequencies in use.)

Antenna Impedance : 50 ohm (use 50 ohm rated coax and coax connectors).

Antenna Grounding : Ensure the antenna is mounted with a grounding plane.

⚠ *Visually Inspect Coax/Connectors for any Slits or Damage – moisture should not be allowed to penetrate fittings or your coax.*

⚠ *To maximize the life of your radio, it is important to understand antenna basics before transmitting on your radio, transmitting without an antenna, or with high SWR (Standing Wave Ration) – can void warranty support.*

⚠ *An Active SWR Meter is a great tool to have when selecting an antenna for your needs. You can monitor and confirm that your SWR is within safe levels when setting up your radio for the first time (periodically checking SWR and your antenna set-up is advised).*

Basic Shortcuts And Use

■ Pound # Key (Keypad Lock)

To enable or disable the keypad lock, press and hold the **[#/LOCK]** key for about two seconds.

A quick toggle of the # will alternate power levels from High power to Low power.

The keypad lock will lock both the main radio buttons itself and also the handheld keypad.

The PTT/MONI and Power Buttons will not be locked when enabled.

■ Star ✱ Key

A short momentary press of the key enables the reverse function (reverses the TX/RX settings according to Offset settings).

When listening to broadcast FM a momentary press will start the scanning. Scanning in broadcast FM will stop as soon as an active station is found.

To enable scanning, press and hold the **[✱/SCAN]** key for about two seconds.

■ Turning the unit ON

To turn the unit on, simply push and hold the volume knob until it turns on. If your radio powers on correctly there should be an audible tone after about one second and the display will show a message or flash the LCD depending on settings.

■ Turning the unit OFF

To turn the unit off, simply push and hold the volume knob until it turns off. The unit is now off.

■ Adjusting the volume

To turn up the volume, turn the volume knob clock-wise.

To turn the volume down, turn the volume/power knob counter-clock-wise.

⚠ *By using the monitor function (MONI button), you can more easily adjust your volume by adjusting it to the un-squelched static.*

■ Making a call

Press and hold the PTT button on the side of the handheld mic to transmit. While transmitting, speak approximately 3-5cm (1-2 inches) from the microphone. When you release the PTT your transceiver will go back to its receive mode.

■ Channel selection

There are two modes of operation: Frequency (VFO) mode, and Channel or Memory (MR) mode.

For everyday use, Channel (MR) mode is going to be a whole lot more practical than Frequency (VFO) mode. However, Frequency (VFO) mode is very handy for experimentation out in the field.

Frequency (VFO) mode is also used for programming channels into memory. For details on how to program your transceiver see Chapter 4, Programming.

Ultimately which mode you end up using will depend entirely on your use case.

◇ **Frequency (VFO) mode**

In Frequency (VFO) mode you can navigate up and down the band by using the **[UP▲]** and **[DOWN▼]** keys (or rotating the selector knob).

Each press (or rotation click) will increment or decrement your frequency according to the frequency step you've set your transceiver to (Menu Item 1: Step).

You can also input frequencies directly on your numeric keypad with kilohertz accuracy. However, the radio will floor to the nearest frequency that corresponds to your frequency step, in other words, when you input frequencies with greater than 1kHz resolution (such as 145.6875 MHz in the example below), always round your input up.

⚠ *Just because you can program in a channel does not mean you're automatically authorized to use that frequency.*

⚠ *Transmitting on frequencies you're not authorized to operate on is illegal, and in most jurisdictions a serious offence. If you get caught transmitting without a license you can and will get fined, and in worst case sent to jail.*

⚠ *However, it is legal in most jurisdictions to listen. Contact your local regulatory body for further information on what laws, rules and regulations apply to your area.*

◇ **Channel (MR) mode**

The use of Channel (MR) mode is dependent on actually having programmed in some channels to use. To find out more on how to program channels see Chapter Programming.

Once you have channels programmed and ready, you can use the **[UP▲]** and **[DOWN▼]** keys to navigate between channels (or Rotate the Selector Knob).

!If you have channels programmed with Transmit power set to Low, you can use the key to momentarily switch over to high power if you're having trouble getting through.

■ Monitor Both VFO & MR Modes

You can toggle from VFO and MR (Memory Recall) mode by either pressing the **[V/M]** button on the front of your radio, or you can toggle modes from the Handheld Mic by a long press of the **[MENU]** button.

The VFO/MR mode will only toggle on the current selected A/B/C/D line – while the other channel lines will remain on channel or memory mode as they were selected.

This allows you to monitor channel and frequency mode simultaneously.

Menu Quick Review

■ Quick Menu Settings

To set the Menu options from the Mobile body use the M Press the selector knob on the radio body (or the Menu Key on the microphone) to select and confirm the changes, while rotating the selector knob (or using the microphone arrow keys) will change your settings.

■ Menu definitions

0	TMR	Transmit Multi Receive	OFF	Turn off dual-band waiting
			ON	Turn on dual-band waiting
1	STEP	Frequency Step Size Setup	2.50K	In frequency mode, when you press up, the DOWN key changes the stepping value of the frequency
			5.00K	
			6.25K	
			10.00K	
			12.50K	
			25.00K	
2	SQL	Squelch Level	0,…,9	Squelch level
3	TXP	Transmit Power	HIGH	High power transmission
			MID	Middle power transmission
			LOW	Low power transmission

4	SCR	Scrambler	OFF	Scramble off
			1	Turn on group 1 scrambling
			2	Turn on group 2 scrambling
			3	Turn on group 3 scrambling
			4	Turn on group 4 scrambling
			5	Turn on group 5 scrambling
			6	Turn on group 6 scrambling
			7	Turn on group 7 scrambling
			8	Turn on group 8 scrambling
5	TOT	TX Time Out Timer	15,30,…600	"Numbers from 15, to 600. In 15 steps, Indicates the maximum time to press the PTT key to transmit"
6	WN	Bandwidth	WIDE	Broadband work
			NARR	Narrowband work
7	AUTOLK	Auto Keypad Lock	OFF	Turn off keyboard auto-lock
			ON	Turn on the keyboard auto-lock feature
8	LANGUA	Language	English	The menu is displayed in English
			Chinese	Menus are displayed in Chinese
9	BEEP	Keypad Voice Prompt	OFF	Turn off the action tone
			ON	Turn on the action tone
10	R-DCS	Receive - Digital Coded Squelch	OFF	No mutes
			D023N,…,D754I	The standard sequence of digital mutes

11	R-CTCS	Receive - Analog Tone Squelch	OFF	No mutes
			67.0Hz,…, 254.1Hz	"A standad Serkisben Analog Subtones, Anderstanda de Ornon-Standad Anarogmut meal shell Teped Direktlith Rotkébod"
12	T-DCS	Transmit - DCS Code	OFF	No mutes
			D023N,…,D754I	The standard sequence of digital mutes
13	T-CTCS	Transmit - CTCSS Code	OFF	No mutes
			67.0Hz,…, 254.1Hz	"a standard sequence of analog mutes, At the same time, standard or non-standard analog mutes can be typed directly through the keyboard"
14	DTMFST	Determines when DTMF codes are heard through speaker	OFF	At the time of launch, the key emits a DTMF code, and the machine does not emit the sound of the code
			DT-ST	At the launch time, the key emits the DTMF code, and the machine emits the sound of the code
			ANI-ST	At the launch time, when the code is automatically issued, the machine emits the sound of the code
			DT+ANI	During the launch, the keys are coded and automatically coded, and the machine emits the sound of the code
15	BCL	Busy Channel Lockout	OFF	The channel is occupied and the launch is also allowed
			ON	The channel is occupied to prohibit emission
16	SC-ADD	Add Scan Channel	OFF	The scan list is not included when storing channels
			ON	Added to the scan list when storing channels
17	SC-REV	Scan Resume Method	TO	Time mode scanning
			CO	Carrier mode scanning
			SE	Search by scanning

18	OPTSIG	Optional Signaling	OFF	Turn off optional signaling
			DTMF	The current optional signaling is DTMF signaling
			2TONE	The current optional signaling is 2-tone signaling
			5TONE	The current optional signaling is 5-tone signaling
19	SPMUTE	Speaker Mute Settings	QT	Mute match turn on the horn
			AND	Mute and optional signaling are matched simultaneously to turn on the horn
			OR	Mute or optional signaling with a match that turns on the horn
20	PTT-ID	PTT ID - When to send	OFF	Pressing PTT does not issue a code
			BOT	"Press PTT to issue a code (the content of the transmit code, set by the frequency writing software)"
			EOT	"Release the PTT code (the content of the transmit code, set by the writing software)"
			BOTH	Press and release the PTT key to issue a code
21	PTT-LT	PTT ID - Transmit Delay	0,1,…,30	Delay time before automatic coding (in S)
22	S-INFO	Auto Group Dialing	1,…,15	When necessary, issue this set of information codes (information codes can only be written through the write frequency software)
23	EMC-TP	Alarm Mode	ALARM	When the alarm is alarmed, the local machine emits an alarm tone
			ANI	Send an alarm code and a native identity code when you are alarmed
			BOTH	When the alarm is raised, the local alarm tone is also sent to the alarm code and the local identity code
24	EMC-CH	Alarm Channel	000,…,199	When an alarm is specified, an alarm channel is specified, and the channel in front of the channel shows ch as a valid channel

25	SIG-BP	Signal Beep	OFF	Optional signaling is not alerted when it is active
			ON	Optional signaling is alerted when valid
26	CHNAME	Channel Name Edit		In Channel mode, edit the channel name of the current channel
27	CA-MDF	Channel A Display Mode	FREQ	Zone A Is in channel mode, where the channel is displayed at frequency
			CH	In zone A, in channel mode, the channel is displayed as a channel number
			NAME	"Zone A In channel mode, the channel is displayed as the channel name (The specific name is set in the write frequency software)"
28	CB-MDF	Channel B Display Mode	FREQ	Zone B Is in channel mode, where the channel is displayed at frequency
			CH	Zone B In channel mode, the channel is displayed as a channel number
			NAME	"Zone B In channel mode, the channel is displayed as the channel name (The specific name is set in the write frequency software)"
29	DMR_TX		TRACK	Tracks the received frequency point transmission
			FIXED	Always transmit at the main frequency
30	VOX		OFF,1,2,3,…10	"OFF voice-activated launch off,1,2,3, ... 10 sensitivity level for voice control start, The higher the value, the louder the sound before it can be activated."
31	VOX-T		0,1,2,3,… 20	The delay time from the time the voice signal disappears to the time the transmission stops after the voice starts the transmission

32	ST-FC		WHITE	The upper status character shows the color setting
			RED	
			BLUE	
			GREEN	
			YELLOW	
			INDIGO	
			PURPLE	
			GRAY	
33	SFA-FC		WHITE	A Channel display area character color setting
			RED	
			BLUE	
			GREEN	
			YELLOW	
			INDIGO	
			PURPLE	
			GRAY	

34	SFB-FC		WHITE	B-channel display area character color setting
			RED	
			BLUE	
			GREEN	
			YELLOW	
			INDIGO	
			PURPLE	
			GRAY	
35	FM-FC		WHITE	Battery/radio frequency displays the character color
			RED	
			BLUE	
			GREEN	
			YELLOW	
			INDIGO	
			PURPLE	
			GRAY	

36	SIG-FC	Bottom Bar Display Foreground Color (Text)	WHITE	The bottom status bar shows the color
			RED	
			BLUE	
			GREEN	
			YELLOW	
			INDIGO	
			PURPLE	
			GRAY	
37	MENUFC	On Screen Menu Foreground Color (Text)	WHITE	Menu characters display color when the menu is set
			RED	
			BLUE	
			GREEN	
			YELLOW	
			INDIGO	
			PURPLE	
			GRAY	

38	TX-FC	Main LCD TX Color Foreground Color (Text)	WHITE	The color displayed when the currently active channel is emitted
			RED	
			BLUE	
			GREEN	
			YELLOW	
			INDIGO	
			PURPLE	
			GRAY	
39	RX-FC	Main LCD Receiving Color Foreground Color (Text)	WHITE	The color displayed when the currently active channel receives the carrier
			RED	
			BLUE	
			GREEN	
			YELLOW	
			INDIGO	
			PURPLE	
			GRAY	
40	MEM-CH	Memorize Channel	000,…,199	"When storing a channel, used to indicate the channel number to store, If the word CH- is displayed in front of a number, Indicates that the channel originally had a channel parameter"
41	DEL-CH	Delete Channel	000,…,199	"Deletes the channel parameters of the specified channel, Previously, if there is no CH- means that the channel has no parameters and the operation is invalid"

42	SFT-D	Frequency Shift Direction	OFF	In frequency mode, there is no frequency difference between the transmit frequency and the receive frequency
			+	In frequency mode, the transmit frequency is equal to the receive frequency plus the difference frequency
			-	In frequency mode, the transmit frequency is equal to the receive frequency minus the difference frequency
43	OFFSET	Frequency Shift Offset Amount	000.000	"In frequency mode, the difference between the frequency transmitted and received (Whether to control the direction of the difference by frequency difference)"
44	ANI	ANI ID Code	XXXXX	"The identity code used to observe the native settings (The identity code can only be written through the write frequency software)"
45	ANI-L	ANI Length	3,4,5	The effective length of the native identity code
46	REP-S	Repeater Activation Tone	1000	A single-frequency tone frequency emitted when the CALL key is pressed when the transmit key is transmitted to activate the repeater
			1450	
			1750	
			2100	
47	REP-M	Repeater Forwarding Mode	OFF	Turn off relay forwarding
			CARRI	Carrier forwarding is received
			CTDCS	Received dumb signaling forwarding
			TONE	Received single tone audio signal forwarding
			DTMF	"Forward when the specified DTMF code is received (the code is a native identity code)"

48	TMR-MR	TMR - Return Time Delay to Primary Channel; Sets the PTT to the last received transmission channel. Time delay selectable	OFF,1,2,3,…50	"The delay time when the main frequency returns during multi-frequency waiting"
49	STE	Squelch Tail Elimination, Requires both radios have function ON.	OFF	Turn off call end-of-call cancellation
			ON	Turn on call end-of-call cancellation
50	RP-STE	"Repeater Squelch Tail Elimination, Requires a repeater using this function."	OFF,1,2,3,…10	Eliminates the end notes produced when relayed
51	RPT-DL	Repeater squelch tail delay.	OFF,1,2,3,…10	The tail tone of the relay is detected to confirm that the transfer is valid
52	DTMF-G	DTMF Gain/Audio Level	0,1,2,3,… 60	"Set the DTMF gain, the higher the value, the stronger the DTMF signal received by the other party"
53	PONKEY	Turn on radio by connect power supply	OFF	Remember the last power outage
			ON	"Do not remember the last power off state, after powering up, you must press the power button for a long time to power on"
54	RESET	Initialize to Factory Defaults	VFO	Menu initialization
			ALL	Menu and channel initialization

Programming

Frequency Mode vs. Channel Mode

Switch between Modes by Using the V/M Front Panel Button. These two modes have different functions and are often confused.

Frequency Mode (VFO)

Used for a temporary frequency assignment, such as a test frequency or quick field programming if permitted.

Channel Mode (MR)

Used for selecting preprogrammed channels.

⚠ ***All programming must be initially done in the frequency mode (VFO) only. From there you have the option of assigning the entered data to a specific channel for access in the channel mode.***

⚠ ***Call tones, TX/RX tones, squelch, and power settings are adjustable on saved channels in channel mode.***

⚠ ***Programming channels are different from the VFO settings; the offset settings are not stored, instead you enter a TX frequency directly (e.g. 145.000 RX with an offset of (+). 600 Would be a TX frequency of 145.600).***

Other Settings

Toggle from High to Low Power

A quick press of the Microphone **[#/LOCK]** will alternate power levels from High power to Low power.

Storing an FM Radio Station and Scanning

Use PC software to store FM radio channels names, you can name the FM channel and instead of display the frequency your FM station will display the name. (software FM option (FM channels are not stored, only the channel names are)) Press the microphone **[✱/SCAN]** Key to scan the FM radio.

Keypad Lock-out

Hold the microphone **[#/LOCK]** for 2 seconds at standby to turn on/off the keypad lock-out function. (The Lock icon appears, when the radio is locked out)

PTT ID Setting

1. Use PC software to change PTT-ID code.
2. Set the Menu 18 settings on the radio to select the PTTID signal mode (2Tone, 5Tone, or DTMF).
3. Set the Menu 20 settings to select when the PTTID is transmitted.
4. Set the Menu 21 settings to program the PTTID transmit delay time.
5. When all the settings are set, when you transmit (Press the PTT) The radio will transmit the PTTID.

DTMF RX Settings

This radio has DTMF coding and decoding. Use the PC software to set the DTMF signal settings first.

DTMF TX Settings

In two-way radio systems, DTMF is most commonly used for automation systems and remote control. A common example would be in amateur radio repeaters where some repeaters are activated by sending out a DTMF sequence (usually a simple single-digit sequence).

DTMF frequencies and corresponding codes

	1209Hz	1336Hz	1477Hz	1633Hz
697Hz	1	2	3	A - **[MENU]**
770Hz	4	5	6	B - **[UP▲]**
852Hz	7	8	9	C - **[DOWN▼]**
941Hz	*	0	#	D - **[EXIT/AB]**

The product has a full implementation of DTMF, including the A, B, C and D codes. The numerical keys, as well as the **[✱/SCAN]** and **[#/LOCK]**, keys correspond to the matching DTMF codes as you would expect. The A, B, C and D codes are located in the **[MENU]**, **[UP▲]**, **[DOWN▼]** and **[EXIT/AB]** keys respectively (+).

Manually TX DTMF Tones: To manually send DTMF codes, press the key(s) while holding down the PTT key.

Automatically TX DTMF Tones: Save it to Memory and Transmit: You can also program a DTMF tone to the saved calling list (requires the PC software) to the one of the 15 Memory call banks in the radio. To transmit select the Pre-set DTMF saved setting on Menu 22 and then press the call key to send the saved DTMF TX tone.

Remote Stun

First set the DTMF Remote Stun Tone and Master Control ID in Software: When your radio receives the DTMF Remote Stun Tone Sequence (Set by software) (Requires Menu 18 and 19 to accept DTMF signaling) it will command the radio to disable transmitting abilities. The Master ID station must first identify and send the PTTID (set in software as “Master ID”) – once the Master Station identifies itself, the radio is set to receive command tones, if the Monitor Remote Stun tone is received - the radio will no longer be able to transmit. Both the master ID station and remote stun signal must be set up in software.

Remote Kill

First set the DTMF Remote Kill Tone and Master Control ID in Software: When your radio receives the DTMF Remote Kill Tone Sequence (Set by software) (Requires Menu 18 and 19 to accept DTMF signaling) it will command the radio to disable transmitting and receiving. The Master

ID station must first identify and send the PTTID (set in software as “Master ID”) – once the Master Station identifies itself, the radio is set to receive command tones, if the Monitor Remote Kill tone is received - the radio will no longer be able to transmit or receive. Both the master ID station and remote stun signal must be set up in software.

■ Remote Revive

First set the DTMF Remote Revive Tone and Master Control ID in Software: When your radio receives the DTMF Remote Revive Tone Sequence (Set by software) (Requires Menu 18 and 19 to accept DTMF signaling) it will reactivate the radio after it has been remotely stunned or killed. The Master ID station must first identify and send the PTTID (set in software as “Master ID”) – once the Master Station identifies itself, the radio is set to receive command tones, if the Monitor Remote Kill tone is received - the radio will revived from a stun/kill command. Both the master ID station and remote stun signal must be set up in software.

■ DTMF Receive Settings, Transmit Setting (Call Key)

1. Press **[MENU]** Key select 18 OPTSIG, press **[MENU]** Key select DTMF function.
2. Press **[MENU]** Key select 22 S-INFO, press **[MENU]** Key select pre-code signal group (1-15). (The DTMF Signal must be saved first in the PC software setting under DTMF settings.
3. If properly set up (on Menu 18 and 19), your radio will open the squelch when it receives the required DTMG signal.
4. Press **[CALL]** Key to send the same DTMF you have selected in Menu 22.

■ 2TONE Receive Settings, Transmit Setting (Call Key)

1. Press **[MENU]** Key select 18 OPTSIG, press **[MENU]** Key select 2TONE function.
2. Press **[MENU]** Key select 22 S-INFO, press **[MENU]** Key select pre-code signal group (1-15). (The 2Tone Signal must be saved first in the PC software setting under 2TONE settings)
3. If properly set up (on Menu 18 and 19), your radio will open the squelch when it receives the required 2TONE signal.
4. Press **[CALL]** Key to send the same 2TONE you have selected in Menu 22.

■ 5Tone Receive Settings, Transmit Setting (Call Key)

1. Press **[MENU]** Key select 18 OPTSIG, press **[MENU]** Key select 5TONE function.
2. Press **[MENU]** Key select 22 S-INFO, press **[MENU]** Key select pre-code signal group (1-15). (The 5Tone Signal must be saved first in the PC software setting under 5TONE settings)
3. If properly set up (on Menu 18, and 19), your radio will open the squelch when it receives the required 5TONE signal.
4. Press **[CALL]** Key to send the same 5TONE you have selected in Menu 22.

■ Scanning modes

The scanner is configurable to one of three ways of operation: Time, carrier or search, each of w hich is explained in further details in their respective section below.

Setting scanner mode

1. Press the **[MENU]** key to enter the menu.
2. Enter “17” on your numeric keypad to come to scanner mode.
3. Press the **[MENU]** key to select.
4. Use the **[UP▲]** and **[DOWN▼]** keys to select scanning mode.
5. Press the **[MENU]** key to confirm and save.
6. Press the **[EXIT/AB]** key to exit the menu.

Time operation:

In Time Operation (TO) mode, the scanner stops when it detects a signal, and after a factory preset time out, it resumes scanning.

Carrier operation:

In Carrier Operation (CO) mode, the scanner stops when it detects a signal, and after a factory preset time with no signal it resumes scanning.

Search operation:

In Search Operation (SE) mode, the scanner stops when it detects a signal. To resume scanning you must press and hold the key again.

Technical Specifications

GENERAL	
Specification	**Value**
Frequency Range (MHz)	VHF: 144~148MHz (220~260MHz) UHF: 430~440MHz (350~390MHz)
Memory channels	200
Frequency stability	±2.5ppm
Frequency step (kHz)	2.5K/5.0K/6.25K/10.0K/12.5K/25.0K
Squelch Setup	CARRIER / CTCSS / DCS / 5Tone / 2TONE / DTMF
Antenna impedance	50 Ohm
Operating temperature	-20°C to +60°C
Supply voltage	13.8V DC±15%:
Dimension	95(W) x 43(H) x 155(D) mm
Weight	500g
Operating Temperature	-5°F - +140°F

RECEIVER		
	Broadband	**Narrow band**
Sensitivity	≤0.25μV	≤0.35μV
Channel choice	≥70dB	≥60dB
Intermodulation	≥65dB	≥60dB
Spurious Rejection	≥70dB	≥70dB
Audio response	+1~-3dB (0.3-3KHz)	+1~-3dB (0.3~2.55KHz)
Signal to noise ratio	≥45dB	≥40dB
Audio Distortion	≤5%	
Audio output power	≥2W±10%	

TRANSMIT		
	Broadband	**Narrow band**
Output power	25W / 20W (VHF / UHF)	
Modulation Mode	16KΦF3E	11KΦF3E
Channel Power	≥70dB	≥60B
Signal to noise ratio	≥40dB	≥36dB
Parasitic harmonic	≥60dB	≥60dB
Audio response	+1--3dB (0.3-3KHz)	+1--3dB (0.3-2.55KHz)
Audio distortion	≤5%	

Mini Color screen

MOBILE RADIO

Detachable Front Panel