



User Manual



GMRS-RPT50

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Preparation

Foreword

This manual introduces the installation and instruction for repeater operation.

Safety and RF radiation introduction

Please refer to the detail introduction of "Installation requirement for meeting RF radiation safety standard" on page 1.

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No part of this manual may be copied, modified, translated, or distributed in any manner without the express written permission.

Disclaimer

All information in this manual is checked carefully to make sure it is reliable, strives to achieve accuracy and completeness of this manual, but no warranty of accuracy or reliability is given. All the specifications and designs are subject to change without notice due to continuous technology development.

■ Installation requirement for meeting RF radiation safety standard

Note:

- This repeater is only applied to occasions for extending communicating coverage and dispatching, during using, you have to acquaint entirely the possibility of RF radiation, and take measures to control the radiation to comply with relevant regulations.

To ensure compliance with the RF radiation safety standard:

- Please install our approved antenna and accessories only!

Before operating the repeater, the operator must be acquainted with the accessories and RF energy information & safety instruction on RF radiation manual to ensure compliance with RF radiation limitation.

Installation requirement

Proper installation can ensure optimum performance and reliability of the repeater. It is better to make a

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preinstallation plan, which contains requirement for installation location, input power and antenna, as well as environment conditions of working location, detailed installation and necessary tools and equipment.

Prompting: If it is the first time to install such equipment, please read the installation and notes contents carefully before installation.

■ Installation overview

The overview for installing the repeater is as following:

- Before installation, please pay special attention to the environments condition of working location, ventilation requirement, and grounding and lightning protection.
- Unpack and check devices carefully.
- Make mechanical installation for the equipment.
- Make electrical and cable connections, including following:
 - ◆ AC input cable
 - ◆ Connect coaxial feed to TX / RX antenna.
- After installation, test to verify it is installed correctly.
- Set repeater parameters according to user requirements

(such as, working frequency, CTCSS or DCS code, etc).

■ Environment condition of Installation location

The repeater can be installed at any field suitable for electrical equipment.

Working temperature range

Temperature range is from -30°C(-22°F) to +60°C(+140°F)

- This temperature is measured nearby the repeater
- For example, if the repeater is installed inside a cabinet, the temperature is measured in the cabinet.

■ Humidity

- The humidity should not exceed 95% at 50°C(122°F).

Note:

If the location environment for installing the repeater is dirty or dusty a the proper filtration system must be used to cool the air for repeater, as dirt or dust accumulated on the inner PCB and mold is hard to clear, which may result in failures like over-heating and intermittent connections, etc.

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Equipment ventilation


There is a cooling fan for the repeater convective cooling. Please comply with the following ventilation notes during installing:

- There must be a ventilation slot or opening on the front panel (air in) and rear panel or side panel (air out) of the installed cabinet. If several repeaters are installed in one cabinet, make sure there is ventilation opening around each repeater to ensure sufficient cooling.
- There must be at least 20CM opening space between ventilating opening and any wall panel or other objects.

Requirement for AC input power

The repeater is provided with a power supply with a working voltage range from 110V-240V (47-63HZ AC input power). Included is a standard AC cord for connecting to AC power.

Prompt: Grounded socket with standard 3 pins is recommended to use for connecting to the AC power.

 Caution: The repeater should be installed near the AC power socket.

The socket should be able to connect to AC power with maximum 280W power. For nominal 110/120VAC power input, the AC power should be on a 15A circuit. And for nominal 220/240VAC power input, the AC power should be on a 10A rated circuit.


■ Circuit overload

The overload on over-current protection device and power supply circuit should be taken into account. To solve such problem, the rated value for the device should be considered properly.

■ Installation method

The repeater can be installed on the rack or in the cabinet.

■ Grounding and lightning protection

 Caution: Grounding and lightning protection during installation is necessary and important. Improper lightning protection may cause permanent damage to the repeater.

Warning: One of the most important notes during installation is grounding and lightning protection. Use

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of correct grounding techniques is closely related to lightning protection, there are two parts for common grounding: Electrical Grounding and Lightning Protection

● Electrical grounding

The grounding line for transmitting current from on-site circuit or equipment is electrical grounding. Such as AC or DC power cord for on-site equipments, circuits or cable connecting on-site alarms or sensors.

● Lightning protection

Lightning protection is crucial to safety and reliable communications. RF cable, AC and/or DC power cords need be protected to avoid a lightning strike at the location.

Although grounding technology and lightning protection are not stated in this manual, there are many excellent industrial suppliers who can supply grounding and lightning protection at the installation location.


● Equipment grounding

On the repeater side, there is screw hole for connecting to the field ground. All antenna, AC & DC power cord should be lightning protected correctly to

meet above local required regulations. A lack of lightning protection may cause permanent damage to the repeater.

Mechanical installation

This chapter introduces unpacking and steps for mechanical installation. Installation method is changeable based on the selected the rack or cabinet (if any) for mounting.

 **Caution:** If you must disassemble any mould from the repeater, please make sure you comply with correct precaution for ESD (Electronic Static Discharge).

■ Unpacking the equipment

The following items are included in the packing:

- Repeater
- AC power cord
- User manual for repeater

Note: after unpacking, please check if the equipment is intact; any damage, please report the situation to the transporting company and your dealer.

Preparation

■ Remove the repeater from carton to a rack or cabinet

The repeater is packed in a carton for transportation, for installation, you need to move it out from the box to the rack or cabinet.

Note: The cabinet or rack provided for installing the repeater should be equipped with mounting rails and enough area, which conforms to EIA general specification 48.3CM (19 inches). Besides, the cabinet must have enough ventilation (please refer to Environment Condition of Working Field), and comply with minimum standard as following:

- Depth: 36.6CM (14.4 inches)
- Width: 48.3CM (19 inches)
- Height: 8.8CM (3.5 inches)

Preparation

■ LED indicators and keyboard & connectors

■ Front panel











LED indicator instruction

LED indicator	Status	Description
POW	Solid RED	Power on
	OFF	Power off or outage
T2	OFF	The transponder has no digital function indication
A	Always ON	Repeater operating in Analog Mode
D	OFF	The transponder has no digital function indication
T1	OFF	The transponder has no digital function indication
S/A	OFF	The transponder has no digital function indication
	OFF	The transponder has no digital function indication
UHF	Always ON	Repeater operating in UHF
VHF	OFF	The transponder has no VHF function indication
ST1	Always ON	Repeater working
	OFF	Repeater turn off
ST2	Always ON	Repeater sending Morse ID
	OFF	Repeater not sending Morse ID
IP	OFF	IP feature is unavailable
N	Always ON	Repeater function disabled
	OFF	Repeater in normal operating mode

Preparation

■ Keyboard / knobs / socket operation and function statement

Keypad	Instructions	Indicators
		
	Enter into main menu after press one time	Menu enter key
	Confirmation key at function setting or option	Enter key
	To receive voice landing at timeslot 1 (no function on this model)	LED-ST1 keeps on (no function on this model)
	To receive voice landing at timeslot 2 (no function on this model)	LED-ST2 keeps on (no function on this model)
	To receive voice landing at timeslot 1 & 2 (no function on this model)	LED-ST1 & ST2 keep on (no function on this model)
	RE is for repeater priority	Indicating arrow shows "RE"
	CL is for initiative call priority	Indicating arrow shows "CL"
	Programmable key	Refer to detail on programmable keys
	Programmable key	Refer to detail on programmable keys
	Work as Back key with short pressing	Back to previous menu list
	Work as channel mode switch key with long pressing	Digital / Analog / Digital & Analog mode switch
	Fast exit key	Exit quickly to home screen
SELECT	Enter into Menu and confirmation after pressing	Menu enter key & Enter Key
	In menu mode, rotate the knob to browse menu options and select items	Browse and set options key
	In standby mode, rotate the knob to select channel No.	Channel No. selecting key
VOL	Rotate the knob to adjust the volume for voice landing	Adjustment for speaker output volume
	Work as Back key with short pressing	Back to previous menu list
	Work as channel mode switch key with long pressing	Digital / Analog / Digital & Analog mode switch
MIC	Speaker microphone socket for initiative call	Speaker microphone (accessory)
	Data editing socket for the repeater	For PC cable
USB	Data editing socket for the repeater	Based on models(USB PC cable)

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■ Back panel



Parts on back panel

Marks	Items	Explanation
RX-IN	RX antenna N type	Connect single RX antenna (working without duplexer)
ON/OFF	AC power input switch	Turn on/off AC power for repeater
AC110-240V-IN	Connector for main power (AC power input)	Jack for AC power in
EXT-1	Extending port -1	Not available on analog models
EXT-2	Extending port -2	Not available on analog models
IP	Ethernet Interface	Ethernet Interface(100 Base-TX/RJ45) (Not available on analog models)
DC13.8V-IN	External DC power jack	For reserve battery providing power to repeater, battery is optional accessory (Be available based on models)
TX-OUT	TX antenna N type	Connect single TX antenna (working without duplexer)
TX/RX	TX & RX antenna N type	Connect RX & TX antenna (working with duplexer)

Note: The accessories interfaces are depended on real model and attached accessories.

Preparation

■ Electrical connection

After mechanical installation of the repeater, you need to have an electrical connection to make it work.

Connection includes the following:

- AC power cord

Power supply connection

AC power supply input connection

1. Each repeater is equipped with a 3-pin power cord for connecting to 110/120/220/240V AC power.
2. Insert the 3-pin plug to the 110/120/220/240V socket.

Caution: please don't power on at this moment, you should make sure the circuit breaker for connecting related AC power socket is disconnected.

Notes:

- ◆ The AC power supply should be easy to operate and installed nearby the repeater
- ◆ Please purchase proper antenna cable (with an impedance of 50 Ω and a properly installed Type N connector) from qualified electrical parts supplier

Grounding connection

On the side of the repeater, there are screw holes for grounding connection. Connect the repeater to the ground cable with provided screws.

RF antenna connection

If using the internal Duplexer, use a single coaxial cable which is connected to a UHF band base station antenna. If the internal duplexer is not installed, you must use the separate RX in and TX in connectors. The RX in is to a receive antenna, and the TX in is to a separate TX antenna. The must be separated by at least 20 ft vertically to function properly

■ Duplexor selection


Selection of the duplexer is crucial for repeater performance. This duplexer must be able to work continuously at minimum 50W. To have best system performance, the insertion loss should be less than 2dB. It is recommended to use band-pass and band-

Preparation

stop duplexor if the repeater is working in a high RF location.

■ Antenna selection

Selection of the antenna is crucial for repeater performance. It is necessary choose an antenna with 50Ω impedance and at least 50W capacity. You can use a gain antenna to expand the working coverage. When you choose gain antenna, please note there may be limitation for antenna gain or system EPR in some service and area. It must use 50Ω transmission line (hard wire) to connect to antenna and duplexer.

 **Note:** it is very important that all antennas must be grounded to the building ground for lightning protection.

■ Checking after installation

After mechanical installation and electrical connection, please connect to the power to check if the repeater can work correctly.

■ Powering on

● Before powering on, please check if all interfaces are


well and correctly fixed and all RF cables are firmly connected.

● Connect the AC cord to supply power to the repeater

■ Check if it is working correctly

You can check the working condition of the repeater thru following steps:

- Check the power LED and related mode indicator status on front panel.
- Cooling fan on back panel is working normally or not.
- Display on LCD is correct or not.
- Operate the repeater to see if TFT LCD instruction is changed accordingly.

 During operation, the repeater may be very hot. After turning off, wait to touch it after it is cooled completely to avoid being injured.

Software Programming


You can program the channel data and related parameter for the repeater at your computer with specialized CPS.

Preparation

■ How to use this manual

This manual introduces basic operation of our compatible Analog repeater. However, your dealer or system administrator may already preset features of this radio based on your working type and requirement. Please consult with your dealer or system administrator about the details.

For your convenience and easy familiar with this radio, the icons below are used for distinguishing operable and available features for analog mode .

 This icon indicates the function is only available in Analog mode

Identify icon for repeater operation



Indicates the repeater is in repeater mode

Content (II)

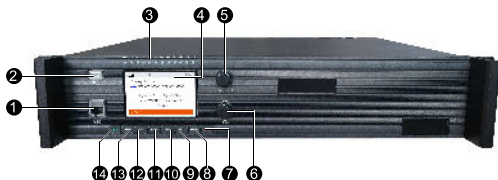
Please review the following subdirectory firstly:

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Study repeater's control setting

■ Acquaintance

■ Repeater front control panel



1. MIC

Please plug the included microphone into the front panel jack. This is for local operation and some functions.

2. USB

To plug the programming cable into the jack if required. (Depending on products model)

3. LED

To indicate the working status.

4. 3.5" TFT screen display

To display repeater working mode and relative information etc.

5. Selector (360° adjustment control knob)

Rotate the knob to change options for operating frequency or memory channel, change scan direction etc. To choose menu items push while in menu mode. Once the knob is pressed, it is used as menu and confirmation key.

6. Volume adjustment

Users rotate the knob clockwise to increase volume level; vice versa.

Short press is to work as Back or Exit key.

Long press is to switch the current channel mode.

7.

Exit quickly to home screen.

8.

Short press it to work as back key.

Long press it to switch current channel mode.

9.

Definable key.

10.

Definable key

11.

RE — To priority repeater.

Study repeater's control setting

12. **TS1/2**

TS1/TS2 (not available on analog models)

13.

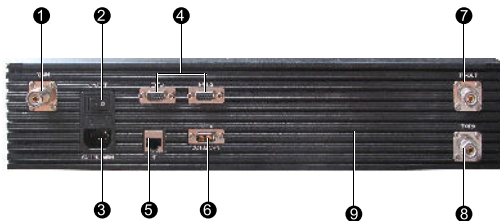
Press one time to enter into menu interface.

If to program setting or do options, it is used as confirmation key.

14.

Long press it before power ON, then power it ON, repeater will get into upgrade mode.

■ Repeater back control panel



1. RX-IN

To connect to receiving antenna. (N type)

2. ON/OFF

Turn ON or OFF the repeater power.

3. AC-110-240IN

Connect to AC power wire outlet.

4. EXT1 and EXT2

Reserved for future function .

5. IP

Ethernet interface Reserved for future

6. DC 13.8V-IN

When you connect to external power, please double check the power polarity (+Positive,-Negative) and rated power voltage value DC13.8V/± 15%. (Depends on product model)

7. TX-OUT

Connect to transmitting antenna. (N type)

8. TX/RX

Connect to RX and TX antenna. (N type)

Note: Only when the repeater with internal duplexer should this connector can be used.

Study repeater's control setting

9. Cooling fan

When repeater is operating, the cooling fan will be activated to cool down the temperature, to prevent damage to equipment.

■ Microphone



1. PTT switch

Press the button to do voice transmission from microphone.

2. Keyboard

Users can issue DTMF call, or characters through these keypads.

3. PF-A

Users can define desired function through software.

4. PF-B

Users can define desired function through software.

5. PF-C

Users can define desired function through software.

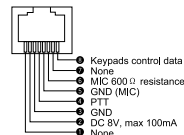
6. PF-D

Users can define desired function through software.

Microphone Jack

1. MIC

Plug the equipped microphone into the jack (on the repeater front control panel). To convenient to disconnect the repeater main board to front panel board, users can connect the microphone wire to the MIC jack.



Note:

4 functions can be set to a key on the microphone: [PF-A], [PF-B] (MICPF-B) and [PF-C](MICPF-C), [PF-D](MICPF-D). Users can define their desired function to the keys.

■ Programmable keys

Users can pre-set the programmable keys based on the length of a button press.

Study repeater's control setting

Pre-setting can be shortcuts of radio functions.

◆ Short press — Pressing and Releasing quickly
(programmable range is from 50ms-750ms)

◆ Long press — pressing and holding for programmed length(programmable range is from 500ms-5000ms)

Note: The programmable duration for a key press can be used for all radio functions / utility functions or setting, except Emergency Call feature.

Other settings and utility functions can be pre-set by programmable keys

High / Low power selection — switch transmit power level between high and low

LED Backlight ON /OFF — turn display LED backlight ON or OFF

Keypad Backlight ON /OFF — turn display keypad backlight ON or OFF

Key up — Move to "Up" under menu operation.

Key down — Move to "Down" under menu operation.

Key Menu and Back — Used as Menu back key and * key under menu operation.

Key Right — Move to "Right" under menu operation.


Key Lock ON/OFF — switch key lock between ON and OFF.

■ Access to features preset

You can access to the different repeater features through one of the following ways:

◎ Short pressing or long pressing related preset keys.
OR

◎ Using the following menu button [MENU] or press [Select] button:

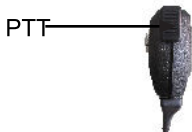
1. For accessing to Menu list, press [MENU] key or press [Select] button, then rotate [Select] button to access the menu features.
2. Press [MENU] key or press [Select] button to select the needed feature or enter into the needed submenu.
3. Press [MODE] key or press [VOL] button to return to the previous Menu or screen.
4. Press [] key, the radio returns to the home screen.

Note: If the radio is inactivity after a period of time, the radio will not automatically exit the menu and will stays in operation screen.

Study repeater's control setting

■ PTT button

There are two basic functions of PTT button:
Transmitting and Receiving.



- ⦿ Press PTT button to locally activate the transmitter.
- ⦿ Release PTT button to receive signals from other radios
- ⦿ If the Individual / Group Call or Prompt Tones is activated, the PTT Sidetone will be heard when you press or release PTT button.
- ⦿ If the Prompt Tone of Group Call is activated, you will hear the PTT Sidetone when you pressing the PTT button.

Note: You can use programming software to turn off all radio alert tones and prompt tones or just disabled partial radio alert tones and prompt tone.

■ Lock Screen Setting

When you turn on repeater, the screen displays a password prompt. You can use MIC to enter numbers

'123456' and enable password resetting.

Process

1. Enter 123456 through MIC to enable password resetting
2. Enter the password you want to set, then press [Confirm] to confirm, and remember the password
3. If you forget the password, enter 123456 to enable the password resetting

■ Repeater status indicators

The repeater adopts a 3.5" TFT colorful display and will show radio status, character input and Menu items.

The icons below appear on LCD display.

- ⦿ Receive signal strength indicator.(RSSI)
 - ∩ Indicates weak or no signal is received
 - ▬▬▬▬ The Number of signal strength bars indicates the signal strength of your repeater. Five bars indicate the strongest signal. This icon is only appeared in receiving.
- Power level
 - "L" means the repeater is set at low power
 - "H" means the repeater is set at high power
- ⦿ Ringing tones are disabled.
- 🔇 Tones are turned off.

Study repeater's control setting

◎ DC voltage

Indicates currently connected battery level.

◎ CTCSS

"QT" means CTCSS is activated

* In standby mode, "QT" appearing means CTCSS is available in receiving.

* In transmitting, "QT" appearing means CTCSS tone is sent when transmitting

* In standby or transmitting, "QT" appearing means CTCSS is available when transmitting and receiving.

◎ CDCSS

"DQT" means DCS is activated

* In standby mode, "DQT" appearing means DCS is available in receiving.

* In transmitting, "DQT" appearing means DCS is sent when transmitting

* In standby or transmitting, "DQT" appearing means DCS is available when transmitting and receiving.

Content (III)

The Options for various menu functions are described in the page below :

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View the setting of menu function and operation

■ Ancillary

This is used to set the date

Note:

◆ Some information of the radios only support to view if the radio with the optional functions.

■ Settings

If your dealer or system administrator allows you to set and check the radio basic operations and functions, you can set the following functions via menu.

◎ You can carry out the following tasks in settings under the menu:

- ◎ Parameter
- ◎ Date & Time
- ◎ Prompt Tone
- ◎ Repeater Data Setting
- ◎ Factory Reset
- ◎ W/N Band Setting
- ◎ Morse Code
- ◎ Hang Time

Parameter

If your dealer or system administrator allows you to set the radio, you can set the menu and other operation settings to set high/low power, time slot and voice landing.

High / Low power

Users can set the repeater high/low power through menu display, to enlarge the working distance.

Note:

- ◆ High power could ensure the communications over a wider coverage area
- ◆ Lower power will reduce the coverage area

Procedure:

Press the preset [High/Low] key to switch the high/ low power.

Or:

Through the menu display to set the power level, as below:

1. Press [MENU] or [Select] knob key to access the menu.

2. Rotate [Select] knob to select Settings, and press [OK] key or [Select] knob.

3. Rotate [Select] knob to select Parameter Setting, and press [OK] key or [Select] knob.

4. Rotate [Select] knob to select high lower power selection, and press [OK] key or [Select] knob.

- ◆ Rotate [Select] knob to select High power, and press [OK] key or [Select] knob.

- ◆ The display shows "saved" and returns to the previous menu.

OR

- ◆ Rotate [Select] knob to select Low power, and press [OK] key or [Select] knob.

- ◆ The display shows "saved" and returns to the previous menu.

5. Press [Back] key to return to the previous menu.

Date & Time

Users can set and check the date, time, and date format through menu display.

Procedure:

Setting the time, date and date display format.

Procedure:

1. Press [Menu] key or [Select] knob to access the menu.

2. Rotate [Select] knob to select Setting then press [OK] key or [Select] knob.

3. Rotate [Select] knob to select Date & Time then press [OK] key or [Select] knob.

4. Rotate [Select] knob to select the desired sub menu.

- Rotate [Select] knob to select Date, and press [OK] key or [Select] knob.

- The display shows year/month/day (depending on

View the setting of menu function and operation

the date format).

■ Rotate [Select] knob and then input the date with keypad.

■ The display shows Date Saved when the date is set. Please press [Back] to return to the previous menu.

OR

■ Rotate [Select] knob to select "Date Format" and press [OK] key or [Select] knob.

■ The display lists different date formats, Y/M/D, M/D/Y, D/M/Y.

■ Rotate [Select] knob to select the desired date format, and press [OK] key or [Select] knob.

■ The display shows "Date Format Saved" and returns to the previous menu.

5. Press [Back] key to return to previous menu.

Beep Tones

1.Users can turn on or off beep tones when a button is pressed through the menu.

You can set or check the prompt of following functions.

- Profiles
- Keytone
- Low Battery Alert

Keystone Setting

■ **Repeater Data Setting**

If permitted by your dealer or system administrator, users could set or check the call prompt tone via screen menu.

◎ Users can program or check the following basic functions:

- Keypad
- Backlight
- Version
- Display mode
- Channel changing switch

Keypad Lock

Users can set or check the repeater key lock mode via screen menu, avoiding accident key input.

View the setting of menu function and operation

© Users could choose the following one mode to lock their keypads.

■ ON — If there is no operation within one minute, the keypad will be locked automatically.

■ OFF — When you want to lock keypad, press [Menu], and then press [*] to lock.

Procedure:

1. Press [Menu] key or [Select] knob to access menu list.

2. Rotate [Select] to select "Settings", then press [confirm] key or [Select] knob.

3. Rotate [Select] knob to select "Basic Setting" then press [confirm] key or [Select] knob.

4. Rotate [Select] to select "Key Lock" then press [confirm] key or [Select] knob.

5. All key lock modes will be listed on screen.

6. Rotate [Select] to select a desired mode, then press [confirm] key or [Select] knob.

■ Rotate [Select] to choose "ON" then press [confirm] key or [Select] knob.

■ Screen shows "Selected mode saved"

■ And then back to previous menu.

Or

■ Rotate [Select] to select "OFF" then press [confirm] key or [Select] knob.

■ Screen shows "Selected mode saved"

■ Screen goes back to previous menu.

7. Press [Back] to return to previous menu.

Note:

◆ Press [confirm] key, and then press [*] to unlock keypads.

Backlight setting

Users could set or check the backlight mode for repeater screen, keypads and knobs via screen menu.

Backlight model and lightness

If required, you can choose the repeater screen and keypad backlight mode and lightness to suit for your working environment, and makes it better user-friendly.

■ You could choose of the following modes for backlight:

© ON — the backlight remains solid on.

© OFF — Turn off backlight. (Dim light status)

© Auto — the backlight will be off automatically when

View the setting of menu function and operation

there is no operation for more than 1 minute. And it will light when you press the key or there is signal received

Procedure:

Press definable key [backlight switch], backlight will be switched between ON and OFF.

Or to operation via menu as below:

1. Press [Menu] key or [Select] knob to access menu list.
2. Rotate [Select] to select "Settings", then press [confirm] key or [Select] knob.
3. Rotate [Select] knob to select "Basic Setting" then press [confirm] key or [Select] knob.
4. Rotate [Select] to select "Backlight setting" then press [confirm] key or [Select] knob.
5. Rotate [Select] to select a desired sub-menu, then press [confirm] key or [Select] knob.
 - Rotate [Select] to select backlight switch, and then press [confirm] key or [Select] knob.
 - Screen shows all backlight modes.
 - Rotate [Select] to select a desired backlight mode, and then press [confirm] key or [Select] knob.
 - Screen shows "Selected mode saved" and then back to previous menu.

Or

- Rotate [Select] to select backlight lightness, and then press [confirm] key or [Select] knob.
- Rotate [Select] to select a desired lightness level, and then press [confirm] key or [Select] knob.
- Screen shows "Set saved" and then back to previous menu.

Or

- Rotate [Select] to select light switch, and then press [confirm] key or [Select] knob.
- Screen display all key light modes.
- Rotate [Select] to select a desired mode, and then press [confirm] key or [Select] knob.
- Screen shows "Selected mode saved" and then back to previous menu.

Or :

- Rotate [Select] to select light lightness, and then press [confirm] key or [Select] knob.
- Rotate [Select] to select a desired lightness level, and then press [confirm] key or [Select] knob.
- Screen shows "Set saved" and then back to previous menu.

View the setting of menu function and operation

6. Press [Back] key to return to previous menu.

Version

Uses could check your current repeaters version via screen menu.

Checking Version

If needed you could check the relevant version for your current repeater.

Procedure:

1. Press [Menu] key or [Select] knob to access menu list.
2. Rotate [Select] to select "Settings", then press [confirm] key or [Select] knob.
3. Rotate [Select] knob to select "Basic Setting" then press [confirm] key or [Select] knob.
4. Rotate [Select] to select "Version" then press [confirm] key or [Select] knob.
5. The radio version data will be displayed on screen.
6. Press [Back] to return to previous menu.

Display Mode

You could set or check the home screen display mode

via screen menu.

Selecting display mode

◎ You could choose one of the following display mode:

◎ Channel No. & Name — Channel number and preset contact name will be displayed on screen.

◎ Channel No. & Freq — Channel number and frequency will be displayed on screen.

◎ Channel No. — Channel number to be displayed on screen

◎ Procedure:

1. Press [Menu] key or [Select] knob to access menu list.
2. Rotate [Select] to select "Settings", then press [confirm] key or [Select] knob.
3. Rotate [Select] knob to select "Basic Setting" then press [confirm] key or [Select] knob.
4. Rotate [Select] to select "Display mode" then press [confirm] key or [Select] knob.
5. All display modes will be listed on screen.
6. Rotate [Select] to select a desired mode, and then press [Confirm] key or [Select] knob.
7. Screen shows "Set saved" and then back to previous menu.

View the setting of menu function and operation

8. Press [Back] to return to previous menu.

Channel changing switch

Process

1. Press the [MENU] key or the [SELECT] knob to access the menu.
2. Turn the SELECT knob to Set, then press the Confirm key or press the SELECT knob.
3. Rotate the SELECT knob to basic Settings, then press the Confirm key or press the SELECT knob.
4. Turn the SELECT knob to the channel switch, then press the Confirm key or press the SELECT knob.
5. You can SELECT "On" or "Off" and then press the "Confirm" key or press the "Select" knob
6. Press [Back]. The screen returns to the upper-level menu.

To restore factory default

Users could set the factory default setting via screen menu.

Restoring factory default operation

If required, you could restore the current repeater's setting to factory default.

Procedure:

1. Press [Menu] key or [Select] knob to access menu list.
 2. Rotate [Select] to select "Settings", then press [confirm] key or [Select] knob.
 3. Rotate [Select] to select "Factory default" then press [confirm] key or [SELECT] knob.
 4. Screen shows "The operation can NOT be retrieved, are you sure to do?"
 5. Press [confirm] or [SELECT] knob to confirm to restore factory default.
 - Then screen back to previous menu.
- Or
- Press [Cancel] to cancel the current operation.
 - Screen back to previous menu.
6. Press [Back] to return to previous menu.

W/N Band Setting

You could program some common function via screen menu.

Wide / Narrow band

View the setting of menu function and operation

If required, you could preset the working band (Wide/Narrow) for radio.

Procedure:

1. Press [Menu] key or [Select] knob to access menu list.
2. Rotate [Select] to select "Settings", then press [confirm] key or [Select] knob.
3. Rotate [Select] to select "Function setting" then press [confirm] key or [Select] knob.
4. Rotate [Select] to select "Wide/Narrow band" then press [confirm] key or [Select] knob.

■ Rotate [Select] to select RX Wide/Narrow band, then press [confirm] key or [Select] knob.

■ Rotate [Select] to select RX Wide band, then press [confirm] key or [Select] knob.

Or

■ Rotate [Select] to select RX Narrow band, then press [confirm] key or [Select] knob.

■ Screen shows "Set saved", and back to previous menu.

■ Rotate [Select] to select TX Wide/Narrow band, then press [confirm] key or [Select] knob.

■ Rotate [Select] to select TX Wide band, then press

[confirm] key or [Select] knob.

Or

■ Rotate [Select] to select TX Narrow band, then press [confirm] key or [Select] knob.

■ Screen shows "Set saved" and back to previous menu.

5. Press [Back] to return to previous menu.

Signaling setting

You could preset the repeater CTCSS or CDCSS under analogue mode via screen menu, to avoid useless signal interference.

CTCSS / CDCSS

When required, you could preset the signaling type and code to prevent useless signal interference and unwanted repeater activation

Procedure:

1. Press [Menu] key or [Select] knob to access menu list.
2. Rotate [Select] to select "Settings", then press [confirm] key or [Select] knob.
3. Rotate [Select] to select "Signaling Setting" then

View the setting of menu function and operation

press [confirm] key or [Select] knob.

4. Rotate [Select] to select a required "CTCSS/ CDCSS"
then press [confirm] key or [Select] knob.

■ Rotate [Select] to select CDCSS, then press
[confirm]key or [Select] knob.

Or

■ Rotate [Select] to select CTCSS, then press
[confirm]key or [Select] knob.

5. Rotate [Select] to select TX code, then press [confirm]
key or [Select] knob.

Or

■ Rotate [Select] to select RX code, then press [confirm]
key or [Select] knob.

6. Rotate [Select] to select a desired code, then press
[confirm] key or [Select] knob.

7. Screen shows "Set saved"

8. And then back to previous menu.

9. Press [Back] to return to previous menu.

Note:

■ Repeater under analogue mode, only it will be
activated when signaling preset.

📖 Morse Code

🕒 You can set or view the following basic features:

- Send Type
- Morse Code
- Interval
- WPN
- Hang time

📄 Send Type

If in need, you can choose the Morse ID Send Type.
Process

- 1.Press the [MENU] key or the [SELECT] knob to
access the menu.
- 2.Turn the SELECT knob to Set, then press the Confirm
key or press the SELECT knob.
- 3.Turn the SELECT knob to FM Morse Code, then
press the Confirm key or press the SELECT knob.
- 4.Rotate the [SELECT] knob to Send Type, then press
the [Confirm] key or press the [SELECT] knob.
- 5.The screen displays a list of Send Type methods
OR

Turn the [SELECT] knob, SELECT Off, then press the
[Confirm] key or press the [Select] knob

View the setting of menu function and operation

- The Setting Complete character prompt is displayed.

- The screen returns to the upper-level menu.

OR

- Turn the [SELECT] knob, SELECT "launch", then press the [Confirm] key or press the [Select] knob.

- The Setting Complete character prompt is displayed.

- The screen returns to the upper-level menu.

OR

- Turn the SELECT knob, SELECT "Timer", and then press the Confirm key or press the Select knob.

- The Setting Complete character prompt is displayed.

- The screen returns to the upper-level menu.

6.Press [Back],The screen returns to the upper-level menu.

☐ Input Morse Code

You can input the Morse Code as your need

Process

1.Press the [MENU] key or the [SELECT] knob to access the menu.

2.Turn the [SELECT]knob, go to [Settings], then press the[Confirm] key or press the [SELECT] knob.

3.Turn the [SELECT]knob to FM Morse Code, then press the [Confirm] key or press the [SELECT] knob.

4.Set the Morse characters vis the microphone keypad. Use the * to switch between Letters and Numbers input , then press the [Confirm] key or press the [SELECT] knob.

5.The "Setting Complete" character prompt is displayed. The screen returns to the upper-level menu.

6.Press [Back]. The screen returns to the upper-level menu.

☐ Choose Interval

If in need, you can select the time interval for the repeater Morse ID.

Process

1.Press the [MENU] key or the [SELECT] knob to access the menu.

2.Rotate the [SELECT] knob to Set, then press the [Confirm] key or press the [SELECT] knob.

3.Rotate the [SELECT] knob to [FM Morse Code] , then press the [Confirm] key or press the [SELECT] knob

View the setting of menu function and operation

4. Rotate the [SELECT] knob to the interval, then press the [Confirm] key or press the [SELECT] knob.
5. The screen displays a list of intervals.
6. Rotate the [SELECT] knob to the [time interval] you want to set, then press the [Confirm] key or press the [SELECT] knob.
7. The "Setting Complete" character prompt is displayed. The screen returns to the upper-level menu.
8. Press [Back]. The screen returns to the upper-level menu.

☐ Choose WPM

If in need, you can select the transponder Morse Code WPM

Process

1. Press the [MENU] key or the [SELECT] knob to access the menu.
2. Turn the [SELECT] knob to [Set], then press the [Confirm] key or press the [SELECT] knob.
3. Turn the [SELECT] knob to [FM Morse Code], then press the [Confirm] key or press the [SELECT] knob
4. Rotate the [SELECT] knob to [Speed], then press the [Confirm] key or press the [SELECT] knob.

5. The screen displays a list of WPM
6. Rotate the [SELECT] knob until you want to SELECT the [WPM], then press the [Confirm] key or press the [Select] knob
7. The "Setting Complete" character prompt is displayed. The screen returns to the upper-level menu.
8. Press [Back]. The screen returns to the upper-level menu.

☐ Select Hang Time

When needed, you can select the repeater Morse ID hang time mode.

Process

1. Press the [MENU] key or the [SELECT] knob to access the menu.
2. Turn the [SELECT] knob to [Set], then press the [Confirm] key or press the [SELECT] knob
3. Turn the [SELECT] knob to [FM Morse ID], then press the [Confirm] key or press the [SELECT] knob
4. Rotate the [SELECT] knob to [Hand Time], then press the [Confirm] key or press the [SELECT] knob.
5. The screen displays a list of the Hang time
6. Rotate the [SELECT] knob until Hand time that you

View the setting of menu function and operation

want to SELECT , then press the [Confirm] key or press the [Select] knob

7.The "Setting Complete" character prompt is displayed.

The screen returns to the upper-level menu

8.The screen returns to the upper-level menu.

