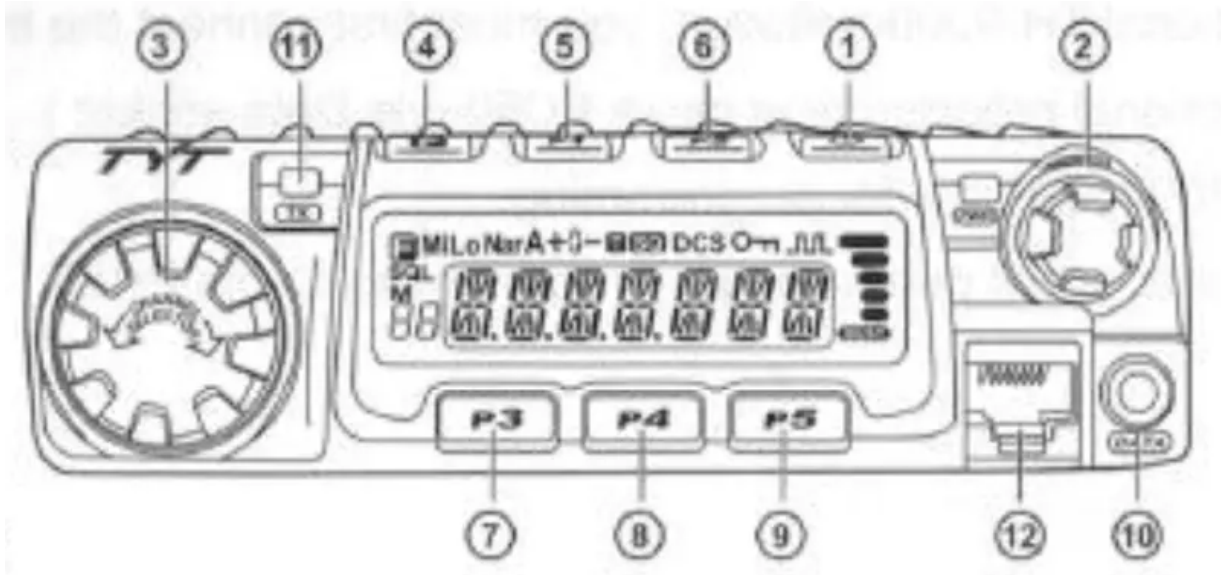


Getting Acquainted

Front panel



Basic Function


NO.	KEY	FUNCTION
1	Pow(Power)	Power on/Off
2	VOL	Adjust Volume Key
3	Main Dial	Change frequency, memory channel and scan direction etc.
4	F	Function Key
5	P1	Call key
6	P2	Squelch off
7	P3	Switch VFO/MR mode
8	P4	Step key (step: 1MHZ)
9	P5	Set CTCSS/DCS
10	Data Terminal	Data reading/writing, cloning and theft alarm functions
11	TX	lights during Transmitting
12	Mic.connector	Microphone connection port



Press  key until icon appears then press the following key.

NO.	KEY	FUNCTION
4	F	Confirms the selective functions and exit
5	P1	TX power set
6	P2	Voice compander
7	P3	Store memory channel
8	P4	Delete memory channel
9	P5	Keypad lock



Press  key and following key together to activate following function:

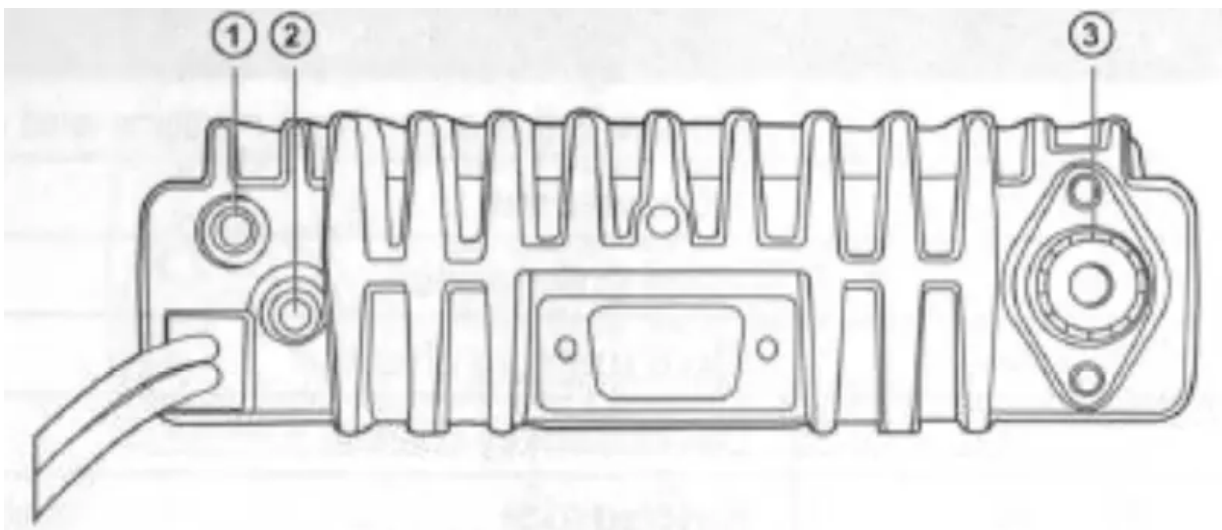
NO.	KEY	FUNCTION
5	P1	Data clone
6	P2	Power voltage display
7	P3	Scan mode
8	P4	Repeater offset set
9	P5	Auto dialer setting

Functions that require continuous pressing following key to be activated

NO.	KEY	FUNCTION
4	FUN/SET	Press and hold for 2s to enter the Setting mode

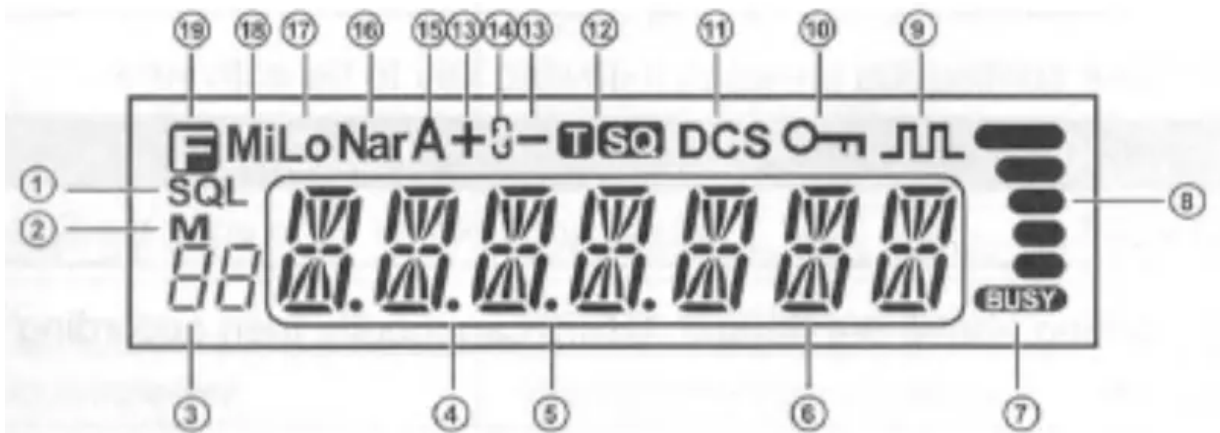
Note: P1-P5 keys setting above are default. Users can modify then according to their need by program software.









Rear panel



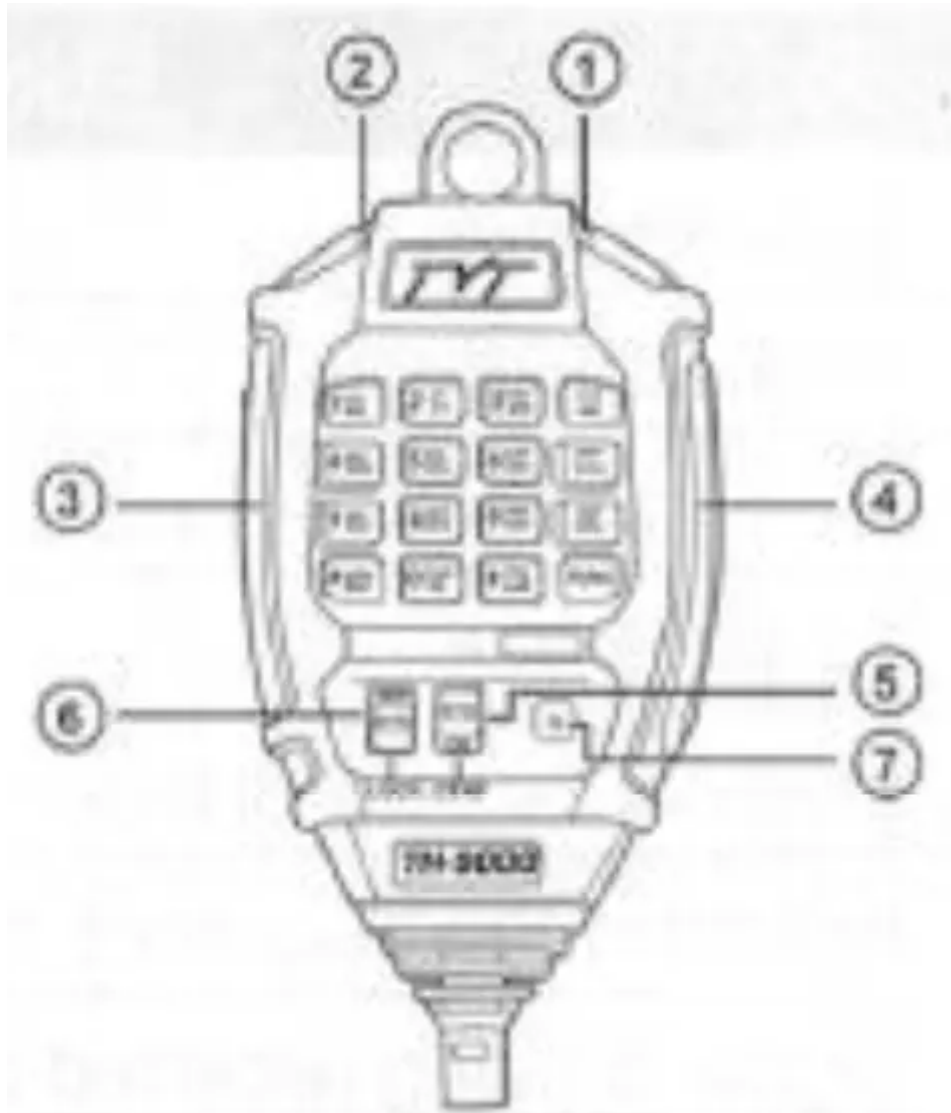
NO.	KEY	FUNCTION
1	Ext. Power Jack	Terminal for connecting optional cable for use with ignition key On/Off function. The radio will auto power on when car is driving. The radio will auto power off when car stops.
2	Ext.Speaker Terminal	Terminal for optional external speaker SP-01.
3	Antenna Connector	Connection for 50Ω antenna.

Display



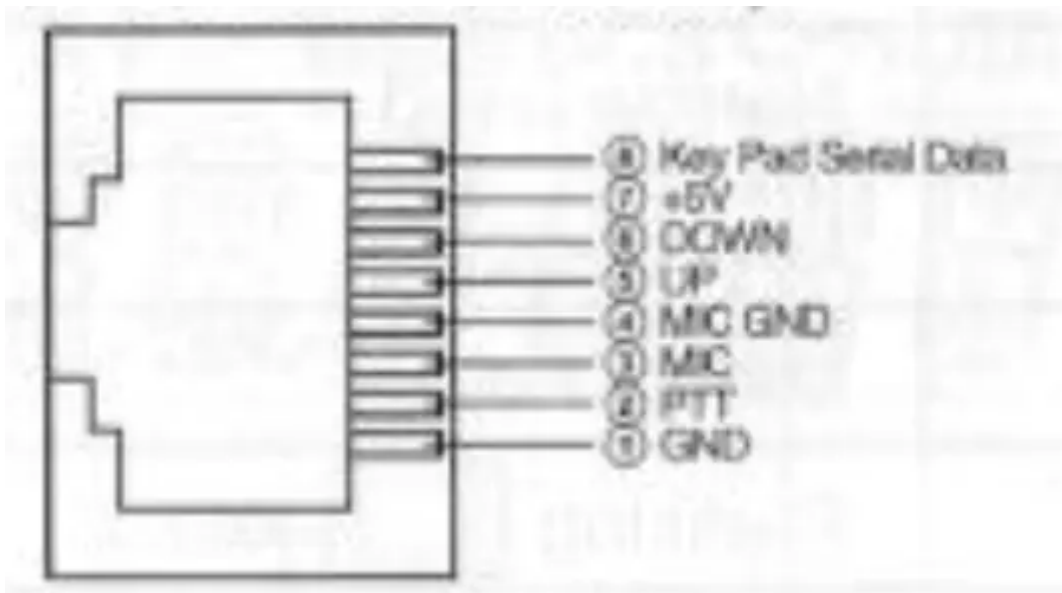
NO.	KEY	FUNCTION
1	SQL	Squelch level.
2	M	In channel mode.
3		Indicates the channel number in channel mode.
4	Decimal point	Channel skip.
5	Decimal point	Indicates the decimal point of frequency and the scanning function.
6		Indicates the frequency or memory name.
7	BUSY	Signal is being received or monitor.
8		Signal strength of receiving and transmitting.
9		Compander.
10		Keypad lock .
11	DCS	Set DCS function.
12	CSQ	Set CTCSS function.
13	+ -	Offset frequency direction.
14		Scrambler.
15	A	Auto power off.
16	Nar	Narrow band.
17	LO	Low power.
18	Mi	Middle Power.
19		Pressing  key.

Microphone





NO.	KEY	FUNCTION
1	UP	Increase frequency ,channel number or setting value.
2	DOWN	Decrease frequency, channel number or setting value.
3	PTT	Press the PTT (Push–TO–Talk) key to transmit.
4	Number Key	Input VFO frequency or DTMF dial out etc.
5	DTMF ON/ OFF	Switches between DTMF dialing or function operating.
6	LOCK Switch	Locks out the UP DownNumerical keys and Function keys.
7	MIC	Speak here during transmission.

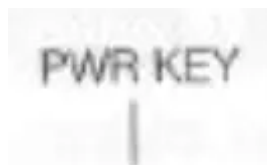
MIC Connector Diagram (in the front view of connector)



Basic Operations

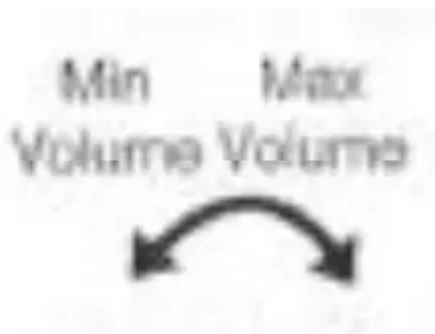
Switching The Power On/Off

According to the option selected during installation. Press the  switch or turn the ignition key to ACC (speed up) or ON (startup) position to power on radio. Press the  key for 1s or turn the ignition key to OFF position to turn off.



Adjusting The Volume

Turn the VOL knob clockwise to increase the audio level, counterclockwise to decrease.



NOTE: During communication, volume can be adjusted more accurately.

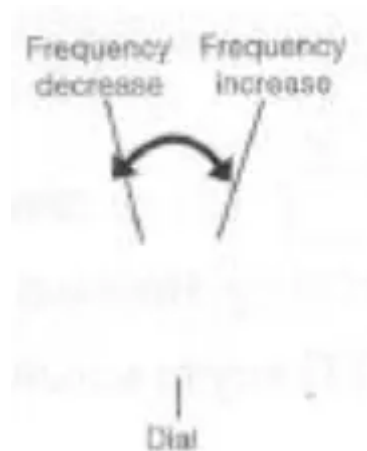


Switch Between VFO And Channel Mode

In standby, press **P3** key or Microphone's **VFO** key until appear, this indicates current channel in channel mode. Repeat above operation to switch between Frequency mode (VFO) and Channel mode.



Adjusting Frequency/Channel Through Selector Knob



1. Under frequency (VFO) mode, you can change the current frequency to the desired one through selector knob. Turn clockwise to increase frequency; turn counterclockwise to decrease. Every gear will increase or decrease one step.

Press key, the decimal point of **P4** key, the decimal point of frequency in screen will be auto-hidden. In this status, turn selector knob or Microphone [UP/DOWN] key will increase or decrease frequency quickly by 1MHz step.

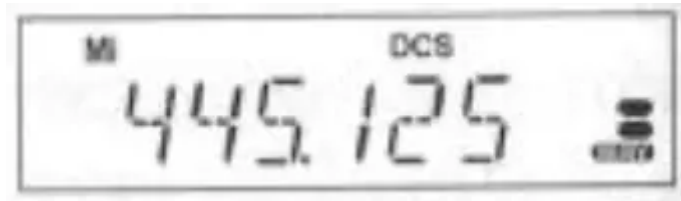
2. Under channel mode, you can change the current channel to the desired one through selector knob, clockwise turn to the forward channel, anti clockwise turn to the backward

channel. In relative working mode, Microphone's [UP/DOWN] key has same function for adjusting frequency and channel.

NOTE: 5k, 6.25k, 8.33K, 10k, 12.5k, 20k, 25k, 30k and 50k total nine step size available for this radio.

Receiving


When the channel you are operating is called, the screen shows BUSY and field intensity, in this way, you can hear the calling from transmitting party.





NOTE: If the transceiver has set at higher squelch level, it may fail to hear the calling.

When the channel you are operating is called, the screen shows BUSY and field intensity, you can't hear the calling from transmitting party, it means current channel receives matching carrier but unmatching signaling. (Refer to CTCSS/DCS encode and decode or Optional Signaling setup).

Transmitting

Press  key or press MIC's  key to monitor for a while to confirm the channel

desired is not busy. Release  or press Mic's  key to return standby status. Then press and hold [PTT] key to speak into microphone.


Please hold the microphone approximately 2.5-5.0cm from your lips, and then speak into the microphone in your normal speaking voice to get best timbre.


NOTE: Press and hold [PTT] key, LED lights RED and power intensity showed in screen indicates it is transmitting, release to receive.

Transmitting Tone-pulse

Press and hold [PTT] key, then press Microphone DOWN transmit current selected tone-pulse signal.

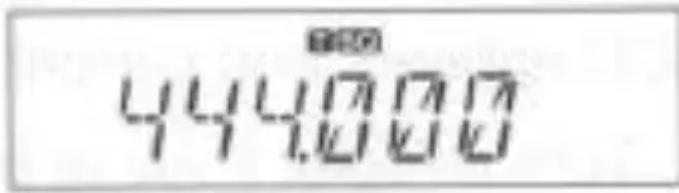
Transmitting Optional Signaling


Press and hold [PTT] key, then press Microphone UP key or press  key in front panel or

press Mic's  key to transmit pre-stored and selected DTMF/2Tone/5T one optional signaling.

Channel Edit

1. Under frequency mode(VFO),turn selector knob to select the desired frequency or input frequency by MIC's numeric keys.





2. Press  key to enter CTCSS/DOS signaling setup, turn selector knob to select the desired signaling.





3. Press  key, LCD appears , Micon and current channel number. Micon flashing means current channel is empty.



4. Turn selector knob to select the desired channel number to store.
5. Press  key, , Micon and channel number disappears and emit a prompt voice, thus the channel storage succeed.

Channel Delete

1. Under channel mode, turn selector knob to select channel which you want to delete.



2. Press  key and  key together, current channel will be deleted and emitted a prompt voice. Micon flashing means current channel is deleted.

Shortcut Operations

Squelch Off






key programmed as Squelch Off to monitor the weak signal.

1. Squelch Off: Press  key to disable squelch, press  key again to resume squelch.

Squelch level Setup

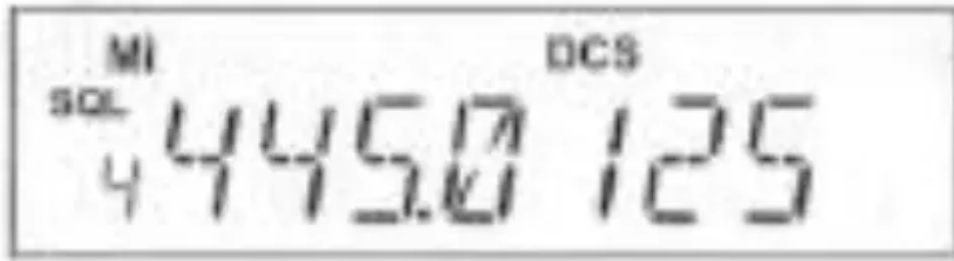
Setting the radio to a tight squelch level, you can avoid unwanted signals or noise, but you may not receive a weak signal. Therefore, it will be better for you to select the normal squelch level.




1. While standby, press  key and turn selector knob at the same time until LCD appears and current squelch level
2. Turn selector knob or press MIC [UP/DOWN] key to set desired squelch level.
3. Press any key except  and  key to exit.

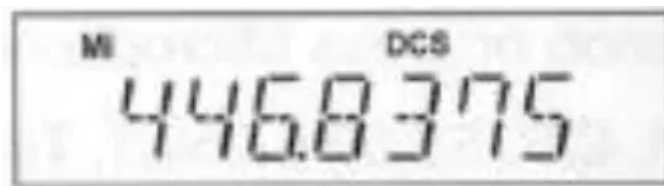
Frequency/Channel Scan

Frequency Scan

In frequency (VFO) mode, this function is designed to monitor signal of every communicative frequency point of transceiver "step size" you have set.






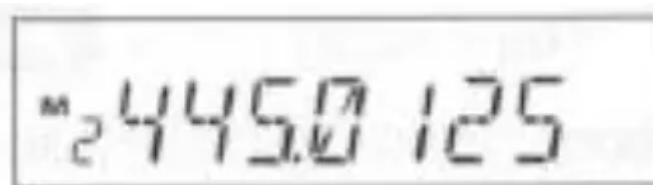
1. In VFO mode, press  for 1s to enter into frequency scan.
2. Turn selector knob or press Microphone [UP/DOWN] key to change scan direction.
3. Press any key except  and  key to exit.



Channel Scan

In channel mode, this function is designed to monitor signal in every channel.

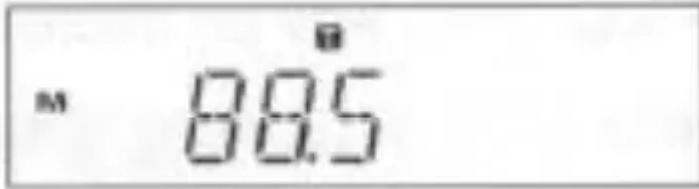
1. In channel mode, press  key for 1s to enter into channel scan
2. Turn selector knob or press Microphone [UP/DOWN] key to change scan direction.
3. Press any key except  and  key to exit.



CTCSS/DCS Encode and Decode Setup

Repeatedly press key to check whether set CTCSS/DCS encode and decode in current channel or not.

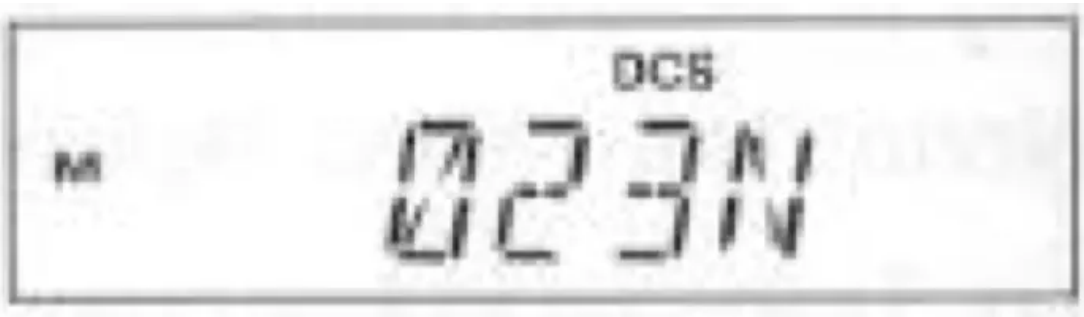
1. When LCD appears **T** icon, it means current channel with CTCSS encode, turn selector knob or press Microphone's [UP/DOWN] key to select desired CTCSS encode.



2. When LCD appears **T** and **SQ** icons, it means current channel with CTCSS encode and decode, turn selector knob or press Microphone's [UP/DOWN] to select desired CTCSS code.



3. When LCD appears DCS icon, it means current channel can be set with DCS encode and decode together, turn selector knob or press Microphone's [UP/DOWN] to select desired DCS encode and decode.



4. CTCSS: 62.5-254.1, Total 51 groups; DCS:000N-7771 total 1024 groups. N is positive code, is inverse code.

5. Press any key except ,  and  keys to return into standby status.

NOTE: Under channel mode, this operation can be temporarily used by user. Once the radio is turned off or switched to another channel, the temporary setting will be erased.

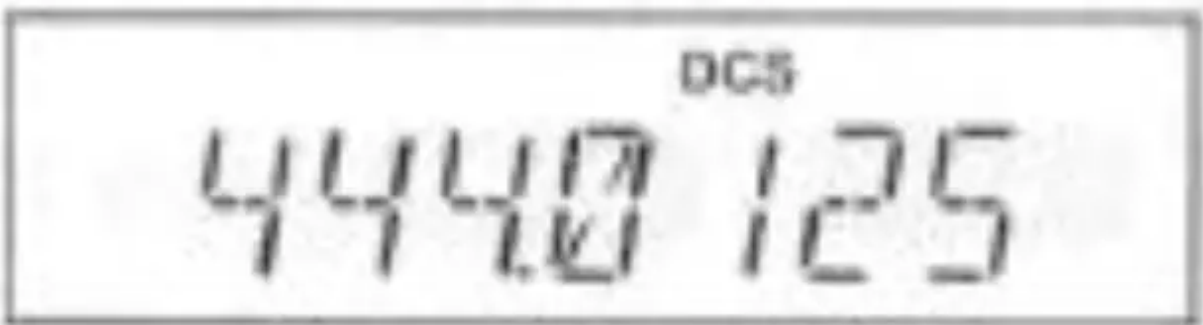
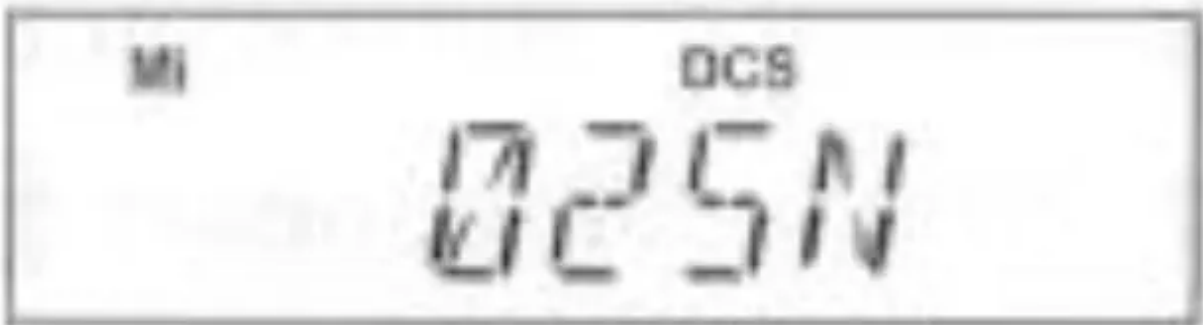
CTCSS Scan

Repeatedly press **P5** key until LCD displays **T** and **SQ** icons. Press **FUNC** key on microphone the press **4 SET SQN** key to enter into CTCSS scanning. Once finding a matching CTCSS signaling, it will stop for 15s then scan again.






DCS Scan

Repeatedly press **P5** key until LCD displays DCS icons. Press **FUNC** key on microphone the press **4 SET SQN** key 1S to enter into DCS scanning. Once finding a matching DCS signaling, it will stop for 15s then scan again.



High/Mid/Low Power Switch

Press  key until LCD display  iron, then press  key to switch between high/Mid/low power. The LCD appears

None: Transmit in high power:





Mi: Transmit in middle power

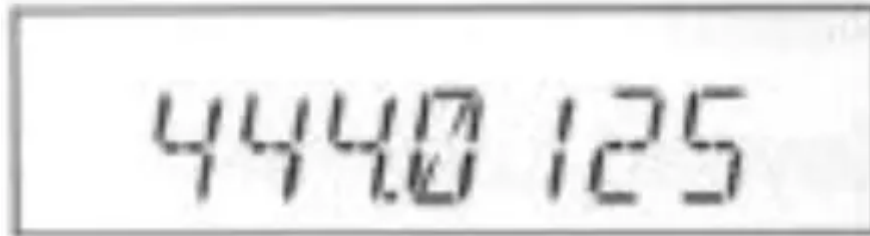
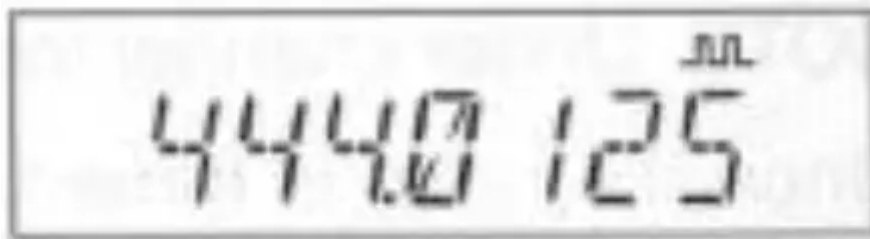
Lo: Transmit in low power



Voice Componder





Componder function will decrease the background noise and enhance 15 audio clarity, especially in long range communication.

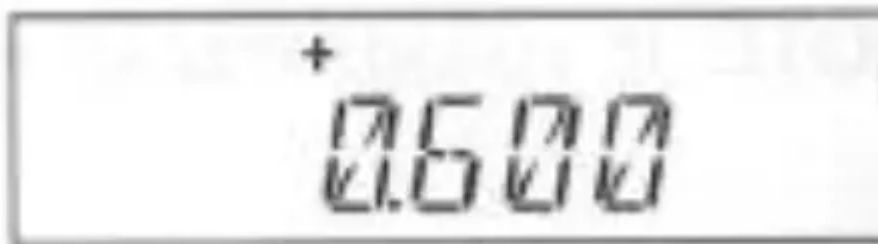
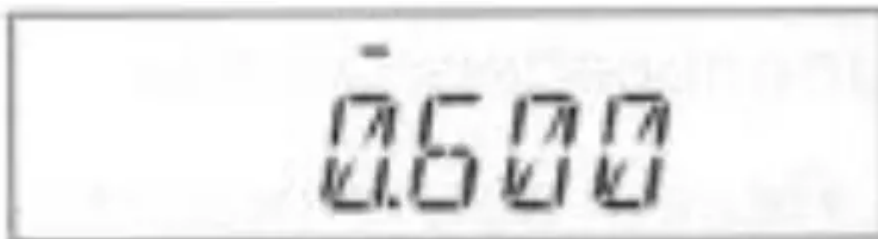
1. Press  key, then press  key to turn on compander function, repeat above operation again to turn off compander function.
2. When LCD appears  iron, enable compander in current channel.
3. When LCD doesn't display  iron, disable compander in current channel.



Offset Direction and offset frequency setup

Repeater receives a signal (UP-LINK) on one frequency and re-transmits on another frequency (DOWN-LINK). The difference between these two frequencies is called the offset frequency. If the UP-LINK frequency higher than DOWN-LINK frequency, the direction is positive. If it is lower, the shift direction is negative.

1. Press  key until the  icon displays on the LCD, then press  key, LCD displays offset direction and offset frequency.
2. Repeatedly press  key to select positive offset and negative offset.
3. When LCD displays "+" icon, it indicates positive offset, which means transmitting frequency higher than receiving frequency.
4. When LCD displays "-" icon, it indicates negative offset, which means transmitting frequency lower than receiving frequency.



5. Turn selector knob or Mic's [UP/DOWN] key to change offset frequency, offset frequency changed as per stepping.




6.

Press any key except  and  key to exit into standby.





NOTE: Under channel mode, this operation can be temporarily used by user.

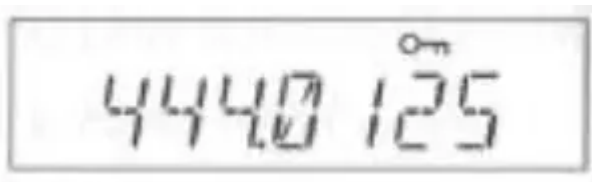
Once the radio is turned off or switched to another channel, the temporary setting will be erased.

Keypad Lockout


Avoiding unintentional operation, this function will lock main keys, all keys except ,  and  key are invalid.

1.

Press  key until the  icon displays on the LCD, then press  key until LCD displays  icon, it indicates keypad lockout function is valid.



2.

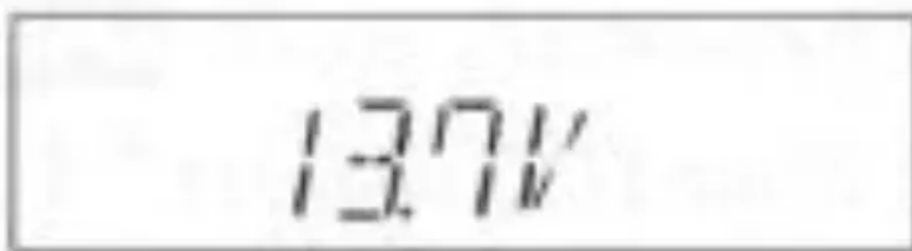
Repeat above operation,  icon disappears, it indicates keypad lockout function is invalid.

Current Voltage Enquiry

This function will display Current Battery Voltage.

1.

Press and hold  key, then press  key, LCD displays current battery








voltage.

2. Repeat above operation to return into VFO or Channel mode.

NOTE: In voltage display mode, all functions and channel or frequency selection are invalid.


Auto-Dialer Setup

This will automatically transmit pre-programmed and stored DTMF tones. And they are often used to remote control electronic devices or AUTO PATCH phone systems available on some repeater.

1. Press and hold  key to enter the auto-dialer enquiry mode, LCD displays current default data and current group displayed on left. If no data in current group, it shows "EMPTY".
2. Turn selector knob to choose group you desired. Total: 16 group. 01-16.
3.  Press  key to enter into editing of current group, press MIC's numeric keys to set your desired data.
4. The display scrolls when the 7th digit is entered. The numbers 0-9, --, A-D, * and # can be stored up to a total of 23 digits.
5.  After editing, press PTT or  key to send current group and store edited DTMF signaling.



Transmitting Edited DTFM tones in the Auto-dialer memory

1. Press and hold  key to enter into auto-dialer enquiry
2. Turn selector knob to select desired transmitting group

3.

Press PTT then UP or



key to transmit current selected DTMF tones.

Microphone Operation



You can operate the transceiver by keypad or input desired frequency or channel through the microphone (**Note:** In professional transceiver mode, other keys are invalid except PTT, [UP/

DOWN],  and ).





Keypad Lock

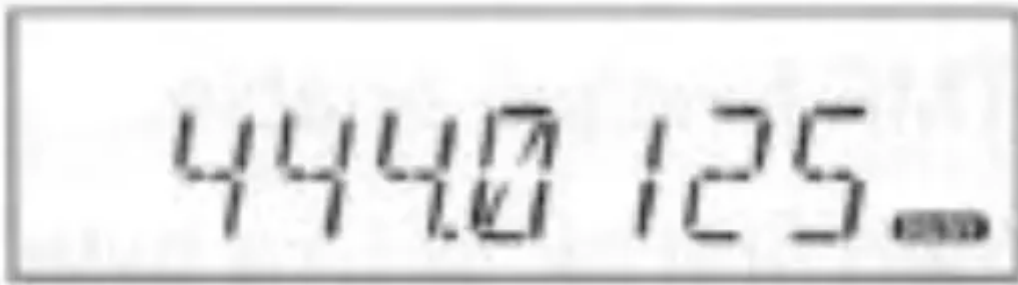
Pull down the slide switch to lock position, The lamp is turned off and all of keypads is not work except PTT switch.

Transmitting DTMF By Microphone Keypad


Slide DTMF key to DTMF position, press and hold the [PTT] key, transmitting the desired DTMF signaling by the numeric key directly. (**Note:** Slide DTMF key to DTMF position, the keyboard is invalid in standby).

Function Setup By Microphone Keypad


Squelch off: In standby, press  key, the squelch is disabled when  icon, flashed in LCD. Press  again to enable squelch and the  icon disappears.




Switches between VFO and channel mode

In standby, press  key to switch between channel mode and Frequency mode (VFO).

Short Calling



In standby, press  to transmit the selected DTMF/2 TONE/5 TONE in current channel.

Transmitting DTMF Code: In standby, press , LCD displays DTMF data and group. Press [UP/DOWN] key to select the desired transmitting DTMF group, then Press PTT to transmit.



If no DTMF data in current group, LCD displays "EMPTY", press  key again and input desired DTMF code by key pad, press PTT to transmit and store DTMF data.

Squelch Level

1.



In standby, press , then press , LCD displays "SQL" and current squelch level.

2.

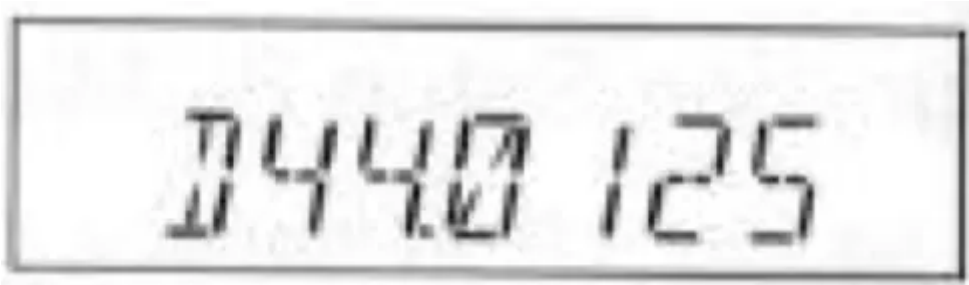
Press [UP/DOWN] to adjust the desired squelch level. (press , then press  turn selector knob also can adjust the desired squelch level.

3. Press number key to confirm and exit.

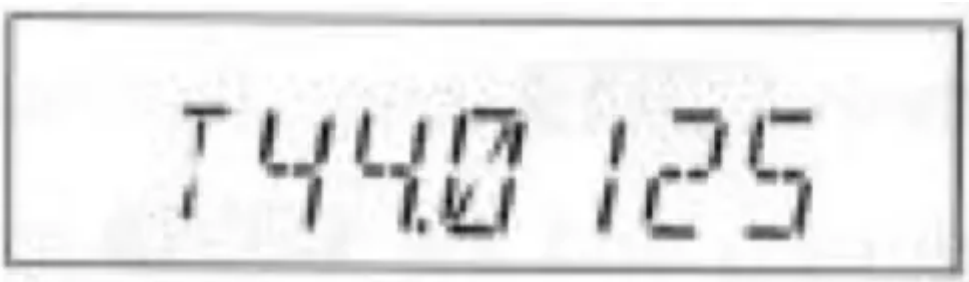
Optional signaling

In standby, press , then press  to add optional signaling, repeat above operation to set DTMF, 2 TONE or 5 TONE signaling.

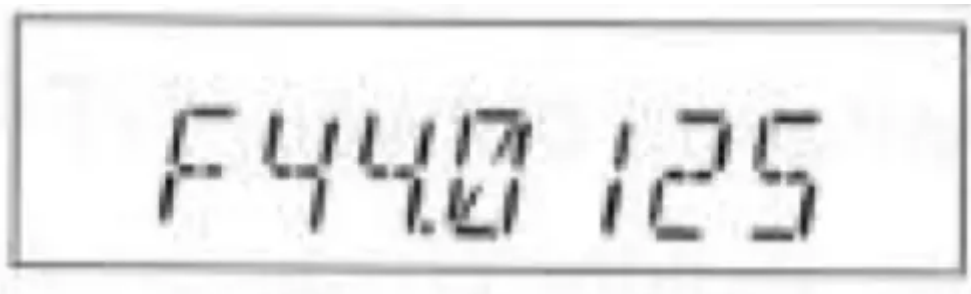
When first bit of Exa byte in frequency displays "D", it indicates DTMF function enable.



When first bit of Exa byte in frequency displays "T", it indicates 2 Tone function enable.





When first bit of Exa byte in frequency displays "F", it indicates 5 Tone function enable.



This function can be temporarily used in channel mode. Once the radio is turned off or switched to another channel, the temporary setting will be erased and back to initial settings.

Scan Skip





In Channel mode, press  then press , decimal point displayed between frequency's ten digit and unit digit, it means current channel is scan skip. Repeat above operation to set scan or scan skip in current channel.

1. Decimal point displayed between frequency's ten digit and unit digit, it means current channel is scanned skip.
2. Decimal point is not displayed between frequency's ten digit and unit digit, it means current channel is scanned.



Frequency/Channel scan



In corresponding mode, press  then press  key to enter into scanning. In scanning mode, press [UP/DOWN] to change scan direction.

Busy Channel Lockout

BCLO is to disable transmitting while RX signal is received. Once the channel is busy and you press PTT, the radio will beep as warning and get back to receiving.

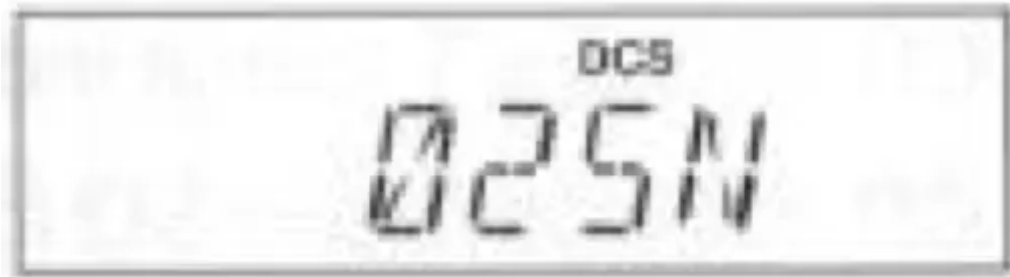
1.  , then press  to enter into Busy Channel Lockout.
 2. Press [UP/DOWN] to select the desired value.
 - BU: Enable BCLO, Carrier lockout, transmitting is inhibited when current channel receives a matching carrier; press [PTT] to emit error voice prompt.
 - RL: Enable BTLO, transmitting is inhibited when current channel receives a matching carrier but dis-matching CTCSS/DCS, press [PTT] to emit error voice prompt It can transmit in any receiving status.
 - OFF: Busy channel lockout is disabled.



3. Press number keys to confirm and exit.

NOTE: This function can be temporarily used in Channel mode. Once the radio is turned off or switched to another channel, the temporary setting will be erased and back to initial settings.

Reverse TX/RX

TX frequency turns to RX frequency & RX frequency changes to TX frequency. The signaling will also be reversed if CTCSS/DCS signaling existed in this channel.

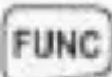



1. In standby, press  , then press  LCD displays "REV--OF".
2. Press [UP/DOWN] to select the desired value.
ON: Enable Frequency Reverse
OFF: Disable Frequency Reverse
3. Press number keys to confirm and exit.

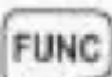

NOTE: This function can be temporarily used in Channel mode. Once the radio is turned off or switched to another channel, the temporary setting will be erased and back to initial settings.

TOT (Time-out timer)

The time-out timer limits the amount of transmitting time. When you reach the time limit which has been programmed by your dealer, your transmission will be cut off. In order to transmit again, you must release PTT button to reset the timer.

1. In standby, press  , then press  LCD displays "TOT-X".
2. Press [UP/DOWN] to select the desired value.
3. Press number keys to confirm and exit.

CTCSS/DCS Encode and Decode

1. In standby, press  , then press  to enter into CTCSS/DCS Encode and Decode.

2. Repeat above operation to set as below:

LCD displays T icon, it indicates CTCSS encode set in current channel.

LCD displays T and SQ icon, it indicates CTCSS encode and decode set in current channel.

LCD displays DCS icon, it indicates DCS encode and decode set in current channel.



3. In corresponding icon, press [UP/DOWN] to select the desired CTCSS/DCS encode and decode.

4. Press  ,  , or  to confirm and exit.

NOTE: This function can be temporarily used in Channel mode. Once the radio is turned off or switched to another channel, the temporary setting will be erased and back to initial settings.

Talk Around



By Talk Around function, you can directly communicate with other radios in your group in case the repeater is not activated or when you are out of the repeater range. The transceiver will transmit by RX frequency with its CTCSS/DCS signaling.

1. In standby, press  , then press  key, LCD displays "TALK-OFF".
2. Press [UP/DOWN] to select the desired setting
ON: Enable Talk Around
OFF: Disable Talk Around
3. Press number keys to confirm and exit.



NOTE: This function can be temporarily used in Channel mode. Once the radio is turned off or switched to another channel, the temporary setting will be erased and back to initial settings.

Voice Prompt

The prompting tone provides confirmation of entry, error status or malfunctions of the transceiver. You can enable or disable this function.

1. In standby, press  , then press  LCD displays "BEEP-XX"
2. Press [UP/DOWN] to turn on/off BEEP voice prompt.
BEEP--OFF: turn off voice prompt
BEEP--ON: turn on voice prompt
3. Press number key to exit and store.

HIGH/MID/LOW Power Selection

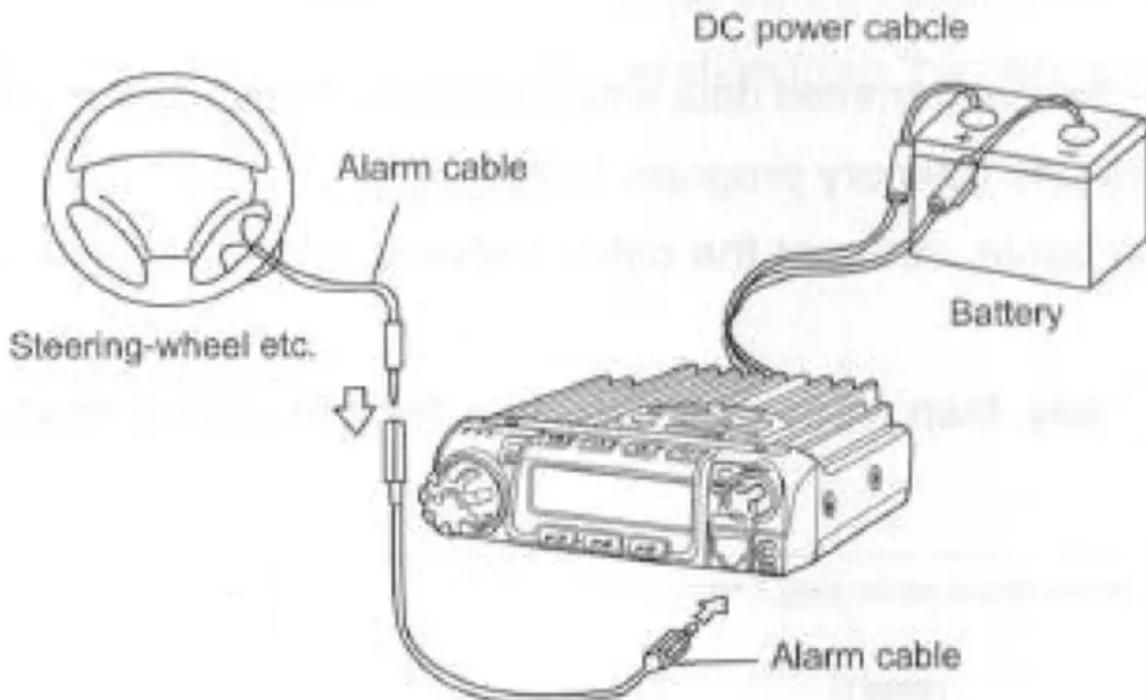
1. In standby, press , then press  LCD displays "POW-XX".
2. Press [UP/DOWN] to select the desired power.
HI: High Power
MI: Middle Power
LOW: Low Power
3. Press number keys to exit and store.

LCD Backlight



1. In standby status, press , then press  LCD displays "LAMP-XX".
2. Press [UP/DOWN] to select desired backlight brightness (1-32 levels).
3. Press number keys to confirm and exit.

Long-distance Anti-theft Alarm

This function is mainly use for simple anti-theft alarm device in vehicles. When the transceiver be removed in an improper manner, the transceiver will emit and transmit alarming and background voice to system and other transceiver of the same frequency.



Connect DC power cable with car battery.

1. Connect the optional alarm cable to the data jack on the front panel as shown. Secure the other end of the cable to an object that stays fixed in vehicle. (Note: if alarm cable is not enough long, you can choose optional alarm cable to extend).
2. 
When transceiver power off by press  key, the long-distance anti-theft alarm enable.
3. **Note:** The long-distance anti-theft alarm only available when transceiver power off.
4. When the alarm cable or is removed from the DATA jack or cut by improper sequence, the alarm function enable and will alarm as programmed. In alarming, the transceiver will stop alarm once receiving a matching signal. And alarm again when a matching signal disappeared.
5. Restart radio to cancel anti-theft alarming. Reconnect with alarm cable and turn off radio, the system will return to alarm mode.

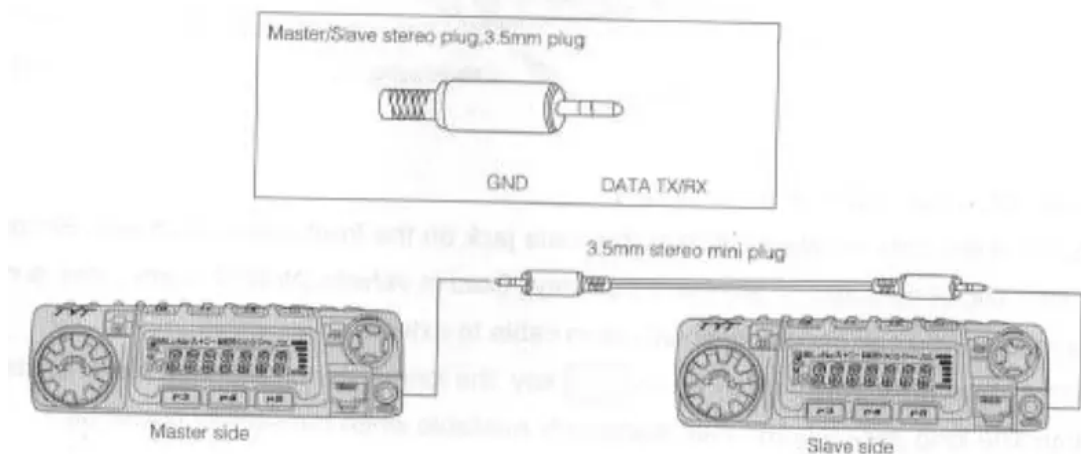
Cable Clone

This feature will copy the programmed data and parameters in the master unit to slave units. It copies the parameters and memory program settings.

1. Use optional cloning cable, connect the cable between the data jacks on both master and slave.

2.

Press and hold  key, then press  key to enter into cloning mode, LCD displays "CLONE".



3. Press master unit's [PTT] key, LCD displays "SD XXX", "XXX" indicates data volume in transmitting. Slave unit displays "LD XXX", "XXX" indicates received data volume. When the transmission is successfully finished, the master and slave unit both display "PASS".

Turn off the power, disconnect the cable and repeat step 2 to step 3 operations to clone the next slave unit.

NOTE: If the data is not successfully transmitted, turn off both units, make sure the cable connection is correct and repeat the entire operation from the beginning.

Maintenance

Default Setting after Resetting (VHF)

	TH-9000	DCS encode and decode	-
VFO frequency	145.00MHz	DCS code	023N
Memory channel 0-199	-	Output power	HI
Offset direction	-	Key-lock setting	OFF
Offset frequency	600KHz	TOT	OFF
Channel step	12.5KHz	APO	OFF
CTCSS encode and decode	-	Squelch Level	4
CTCSS frequency	88.5Hz		

Default Setting after Resetting (UHF)

	TH-9000	DCS encode and decode	-
VFO frequency	435.00MHz	DCS code	023N
Memory channel 0-199	-	Output power	HI
Offset direction	-	Key-lock setting	OFF
Offset frequency	600KHz	TOT	OFF
Channel step	12.5KHz	APO	OFF
CTCSS encode and decode	-	Squelch Level	4
CTCSS tone frequency	88.5Hz		

Troubleshooting

Problem	Possible Causes and Potential Solutions
(a) Power is on, nothing appears on Display.	+ and- polarities of power connection are reversed. Connect red lead to plus terminal and black lead to minus terminal of DC power supply.
(b) Fuse is blown.	Check and solve problem resulting in blown fuse and replace fuse with new fuse.
(c) Display is too dim.	Dimmer setting is "LAMP-L'.Please make the dimmer setting "LAMP-H".
(d) No sound comes from speaker.	Squelch is muted.Decrease squelch level. Tone or CTCSS/DCS squelch is active. Turn CTCSS or DCS squelch off.
(e) Key and Dial do not function.	Key-lock function is activated.Cancel Key-lock function.
(i) Rotating Dial will not change memory channel.	Transceiver is in CALL mode.Press the VFO or memory mode.
(g) PTT key is pressed but transmission does not occur.	Microphone connection is poor. Connect microphone properly. Antenna connection is poor. Connect antenna property.

Warning

This content is compiled from multiple sources and is provided for reference purposes only. It may not be complete or fully applicable to all situations. If you are unable to resolve your issue, please contact the product manufacturer or an authorized service provider for official support.

