CE 0700 ⚠

DR-B185HT
136.000-173.995MHz

RoHS

1 Supplied Accessories

■ SUPPLIED ACCESSORIES

Carefully unpack to make sure the following items are found in the package in addition to this manual:

• DR-B185HT
• Microphone EMS-74 (with DTMF keyboard)
• DC Power Cable with Fuse Holder

• Spare Fuses

The standard accessories may vary slightly depending on the version you have purchased. Please contact your local authorized Alinco dealer should you have any questions. Alinco and authorized dealers are not responsible for any typographical errors there may be in this manual. Standard accessories may change without notice.

Warranty Policy: Please refer to any enclosed warranty information or contact your authorized Alinco dealer / distributor for the warranty policy.

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■ In order to operate this product, a properly tuned antenna, its feedline with connectors and fixing hardware are necessary. Please consult with your dealer for details.

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■ MOBILE INSTALLATION

The radio may be installed in any position in your car, where the controls and microphone are easily accessible and it does not interfere with the safe operation of the vehicle. If your vehicle is equipped with air bags, be certain your radio will not interfere with their deployment. If you are uncertain about where to mount the unit, contact your vehicle's dealer.

1. Install the mounting bracket in the vehicle using the supplied self-tapping screws (4pcs) and flat washers (4pcs).

Car body — A
Washer (M5)
Tapping screw
(M5x20mm)
M5 Spring Washer
Mounting bracket
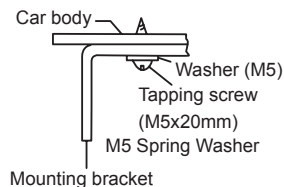
2. Position the radio , then insert and tighten the supplied hexagon SEMS screws.

▼ Double check that all screws are tightened to prevent vehicle vibration from loosening the bracket or transceiver.

Caution:
Use only the provided screws otherwise you risk damaging the circuit board, components or fall-off of the unit.

▼ Determine the appropriate angle of the transceiver, using the 3 screw hole positions on the side of the mounting bracket.

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■ DC POWER CABLE CONNECTION

✂ MOBILE OPERATION

The vehicle battery must have a nominal rating of 13.8V. Never connect the radio to a 24V battery. Be sure to use a 13.8V vehicle battery that has sufficient current capacity. If the current to the radio is insufficient, the display may darken during transmission, or transmitting output power may drop excessively.

1. Route the DC power cable supplied with the radio directly to the vehicle's battery terminals using the shortest path from the radio.

▼ Never use the cigarette lighter socket as a DC source.

▼ The entire length of the cable must be dressed so it is isolated from heat, moisture, and the engine secondary(high voltage) ignition system/cables.

2. After installing cable, in order to avoid the risk of damp, please use heat-resistant tap to tie together with fuse box. Don't forget to reinforce whole cable.

3. In order to avoid the risk of short circuit, please cut down connection with negative (-) of battery, then connect with radio.

4. Confirm the correct polarity of the connections, then attach the power cable to the battery terminals; red connects to the positive (+) terminal and black connects to the negative (-) terminal.

▼ Never remove the fuse holders from the cable.

5. Reconnect any wiring removed from the negative terminal.

6. Connect the DC power cable to the radio's power supply connector.

▼ Press the connectors firmly together until the locking tab clicks.

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✖ REPLACING FUSES

If the fuse blows, determine the cause, then correct the problem. After the problem is resolved, replace the fuse. If newly installed fuses continue to blow, disconnect the power cable and contact your dealer for assistance.

Fuse Location	Fuse Current Rating
Radio	15A
Supplied Accessory DC power cable	20A

Only use fuses of the specified type and rating, otherwise the radio could be damaged.

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■ POWER SUPPLY VOLTAGE DISPLAY

After connecting the radio to the power supply, the supply voltage can be displayed on LCD by pressing the SQL / REV key together with the [SQL / REV] key.

The display immediately changes as the voltage supply changes, It also displays voltage during transmission.

The radio will return to its normal operation when the power is turned ON/OFF or repeat above operation.

■ ACCESSORIES CONNECTIONS

EXTERNAL SPEAKER

If you plan to use an external speaker, choose a speaker with an impedance of 8Ω. The external speaker jack accepts a 3.5mm (1/8") mono (2-conductor) plug.

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■ ANTENNA CONNECTION

Before operating, install an efficient, well-tuned antenna. The success of your installation will depend on the type of antenna and its correct installation.

Use a 50Ω impedance antenna and low-loss coaxial feed-line that has a characteristic impedance of 50Ω, to match the radio input impedance. Coupling the antenna to the radio via feed-lines having an impedance other than 50Ω reduces the efficiency of the antenna system and can cause interference to nearby televisions, radio receivers and other electronic equipment.

NOTE External speaker adopt double port BTL, please care about the connection. Do not use the speaker that requires grounding.
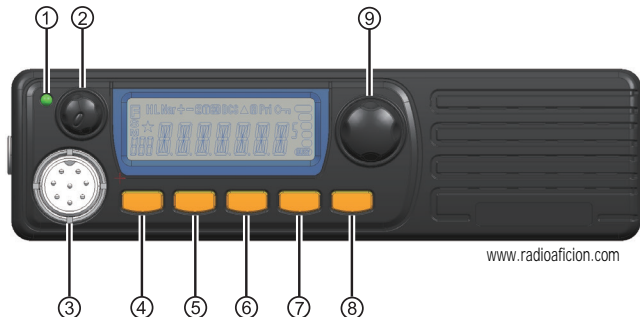
✳ MICROPHONE

For voice communications, connect a provided microphone into the socket on the front of the main unit. Turn the ring firmly on the plug until it locks. Attach the supplied microphone hanger in an appropriate location using the screws included in the screw set.

■ **FRONT PANEL**

www.radioaficion.com

■ **Basic Functions**

NO.	KEY	FUNCTION
1	RX	Lights during Receiving
2	VOL Knob / PWR(Power) key	Rotate to adjust the volume level. Press to switch the power on/off. (Press and hold to turn off the power.)
3	Mic.connector	Microphone connection port
4	FUNC/SET	Switches to function mode.
5	V/M/MW	
6	TS/DCS/LOCK	
7	CALL	Switches the CALL channel/currently displayed channel.
8	SQL / REV	Adjust Squelch level

NO.	KEY	FUNCTION
9	Push-button rotary knob	Rotate to change memory channels and various settings. Press to enter the settings.

■ **OPERATIONS BY PRESSING AND HOLDING THE FOLLOWING RESPECTIVE KEYS**

NO.	KEY	FUNCTION
2	VOL Knob / PWR(Power) key	Press to switch the power on/off. (Press and hold to turn off the power.)
4	FUNC/SET	Operation is invalid.
5	V/M/MW	
6	TS/DCS/LOCK	
7	CALL	Operation is invalid.
8	SQL / REV	Press and hold for 1 second to activate the monitoring function.
9	Push-button rotary knob	Starts group scan.

■ **PRESS [FUNC/SET] KEY UNTIL ⧅ ICON APPEARS THEN PRESS THE FOLLOWING KEY.**

NO.	KEY	FUNCTION
2	VOL Knob / PWR(Power) key	Press to switch the power on/off. (Press and hold to turn off the power.)
4	FUNC/SET	Exits from the function mode.

NO.	KEY	FUNCTION
5	V/M/MW	
6	TS/DCS/LOCK	Exits from function mode.
7	CALL	Sets transmission output.
8	SQL / REV	Sets the reverse function.
9	Push-button rotary knob	Rotate to exit from function mode. Press to set the shift function.

■ PRESS [FUNC/SET] KEY AND FOLLOWING KEY TOGETHER TO ACTIVATE FOLLOWING FUNCTION:

NO.	KEY	FUNCTION
2	VOL Knob / PWR(Power) key	Rotate to adjust the volume level. Pressing operation is invalid.
4	FUNC/SET	-
5	V/M/MW	Enters clone function mode.
6	TS/DCS/LOCK	
7	CALL	
8	SQL / REV	Switches to power supply voltage display mode.
9	Push-button rotary knob	Operation is invalid.

## ■ OPERATIONS WHEN TURNING ON THE POWER WHILE PRESSING THE FOLLOWING RESPECTIVE KEYS

NO.	KEY	FUNCTION
2	VOL Knob / PWR(Power) key	-
4	FUNC/SET	Resets the system.
5	V/M/MW	Switches operation modes.
6	TS/DCS/LOCK	Operation is invalid.
7	CALL	Operation is invalid.
8	SQL / REV	Operation is invalid.
9	Push-button rotary knob	Operation is invalid.

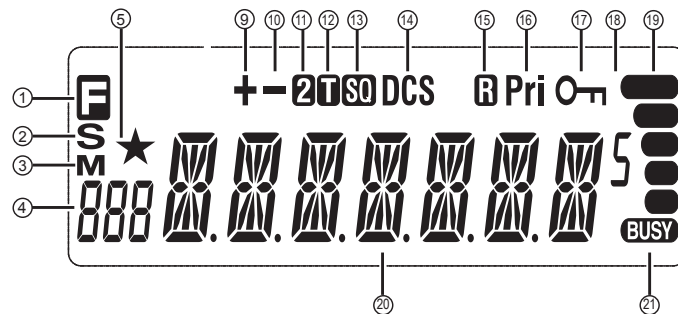**NOTE** Turn on the power while pressing FUNC/SET and CALL/HL simultaneously to reset all settings.

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■ REAR PANEL
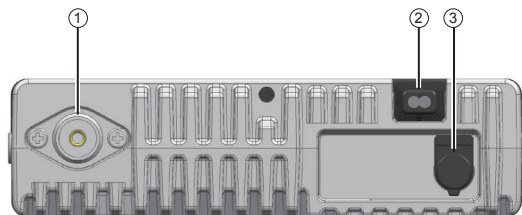
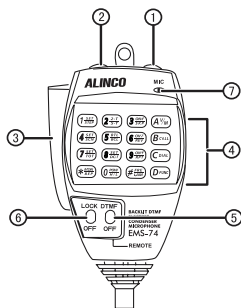| NO.	KEY	FUNCTION
1	Antenna Connector	Connect an antenna.
2	DATA terminal/ Ext.Speaker Terminal	Use for the clone function and to connect an optional external speaker.
3	Power input code	Connect 13.8 V DC power.

■ DISPLAY

NO.	KEY	FUNCTION
1	**F**	Lights up when function mode is ON.
2	**S**	Lights up when the squelch is set. Flashes while scanning.
3	**M**	
4	*888*	Menu number.
5	★	

NO.	KEY	FUNCTION
9	**+**	Lights up when the shift direction is positive.
10	**—**	Lights up when the shift direction is negative.
11	**2**	
12	**T**	Lights up when the tone and SQ are set.
13	**SQ**	Lights up when the SQ is set.
14	**DCS**	Lights up when CDCSS is set.
15	**R**	Lights up when the reverse function is set.
16	**Pri**	Lights up while performing priority scan.
17	**O⌐**	Lights up when the operation lock function is set.
18	**5**	Lights up to indicate 0.05 kHz.
19	(signal strength bars)	Signal strength of receiving and transmitting.
20	**⊟⊟⊟⊟⊟⊟**	Channel name or menu item.
21	**BUSY**	Lights up when the squelch opens.

■ MICROPHONE

MIC Connector Diagram(in the front view of connector)

Mic (Microphone) ——— ① ⑦ ——— MIC GND (Microphone Grounding)

GND (Grounding)

PTT(Push-To-Talk) ——— ② ⑧ ⑥ ——— Remote (connect to control)

Down(Decrease) ——— ③ ⑤ ——— DC 5V

④

Up(Increase)
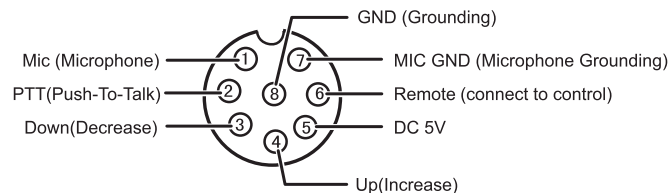
NO.	KEY	FUNCTION
1	UP	Channel number or setting value.
2	DOWN	Channel number or setting value.
3	PTT	Push-To-Talk key to transmit.
4	Numerical Keys	Other various oprations
5	DTMF ON/OFF	Switches between DTMF and function operations.
6	LOCK Switch	Locks all keys excep PTT.
7	MIC	Microphone element is located.

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■ CHANNEL DISPLAY MODE

Call up and operate frequencies or settings registered in advance. Channels set in memory mode or with a PC application will appear.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] key on the microphone to select a memory channel.

5 Basic Operations

■ SWITCHING THE POWER ON/OFF

According to the option selected during installation, press the VOL Knob / PWR(Power) key or turn the ignition key to ACC or ON position to power on. Press the VOL Knob / PWR(Power) key for 1 seconds or turn the ignition key to OFF position to turn off.

■ ADJUSTING THE VOLUME

Turn the VOL Knob / PWR(Power) key clockwise to increase the audio level, counterclockwise to decrease.

> **NOTE** Press and hold the [SQL / REV] key for 2 seconds to hear a white-noise to set the proper audio level.

■ ADJUSTING FREQUENCY/CHANNEL THROUGH THE DIAL

1. Under frequency (VFO) mode, you can change the current frequency to the desired one through push-button rotary knob; Turn clockwise to increase frequency; turn counterclockwise to decrease. Every click will increase or decrease one step. Press push-button rotary knob, the KHz order digits will be masked. In this status, turn push-button rotary knob or Microphone [UP]/[DOWN] key will increase or decrease frequency quickly by 1MHz step.

2. In channel display mode, you can change the current channel to the de-sired one through push-button rotary knob, clockwise turn to the forward channel, anticlockwise turn to the backward channel. In relative Operating mode, Microphone's [UP]/[DOWN] key has the same function for adjusting frequency and channel.

■ SQUELCH LEVEL SETTING

A squelch eliminates white-noise (the background noise when a signal is not received).

Higher level settings will keep the squelch "closed" more tightly for quieter monitoring, but weak signals will not be heard. Lower settings allow weaker signals to "open" the squelch but noise may also cause it to open.

• When the S-meter squelch is set to ON, the squelch will be adjusted.

• When the S-meter squelch is set to OFF, the S-meter squelch will be adjusted.

1. Press [SQL / REV] key. [SQL / REV] icon appears on the display and the squelch level will be shown at the position where the memory number is displayed.

   21 levels, between 0 and 20, are available. "0" is the lowest setting.

2. By rotating the main dial or by using the [UP]/[DOWN] keys on the microphone, adjust the squelch to the desired level. To return to normal use, press [PTT] or any key on the front panel; or if there are no operations within 5 seconds, the unit will store the setting and will return to its original status.

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The new squelch level will be stored in the CPU until another adjustment is done.

■ TO RECEIVE SIGNALS

1. Press the PWR key.
2. Rotate the VOL knob to set the volume to an adequate level.
3. While the SQL indicator is displayed, press the [SQL / REV] key, then keep rotating the knob until the noise disappears.
4. Select your desired frequency.

   When a signal is received at your desired frequency, [BUSY] will light up and receiving sound will be heard.

   The S-meter will swing according to the receiving signal strength.

■ MONITORING FUNCTION

This function allows you to cancel the squelch operation so that weak signals that are below the operation level can be heard.

1. Press and hold the [SQL / REV] key for 1 second or more.

   [BUSY] will appear and the squelch operation will be canceled.

2. To cancel the monitoring function, press any key on the unit except for the knob.

   The squelch operation will be activated again.

■ TO TRANSMIT SIGNALS

1. Select your desired frequency.
2. Press the [PTT] key on the microphone.

   The TX indicator lights red and the unit will be in transmission mode.

3. While pressing the [PTT] key, speak into MIC in a normal voice.

   Place the microphone about 5 cm away from your mouth when you speak.

   Release the [PTT] key to return to receiving mode.

   Pressing the [PTT] and [DOWN] keys simultaneously will transmit a tone call signal.

   When the automatic dialer is set, pressing the [PTT] and [UP] keys simultaneously will transmit the automatic dialer signal. (P.40)

   If the [PTT] key is pressed outside of the transmission frequency range, [OFF] will appear on the display. In this situation, signals cannot be transmitted.

■ CALL MODE

This is a memory mode that allows the transceiver to quickly recall the assigned memory channel by simply pressing the [CALL/H/L] key, regardless of the current status of the unit.

1. Press [CALL/H/L] key. The [C] icon appears on the display and the transceiver enters the CALL mode. In this mode, the main dial or the [UP]/[DOWN] keys cannot change the frequency or memory channels.
2. Press [CALL/H/L] key again or press [V/M/MW] key to exit CALL mode.
3. No scan functions are available in CALL mode.

   To store a desired setting in the CALL channel, follow the memory mode programming instructions and assign your selected settings to memory channel C. The call channel can be modified but cannot be eliminated or hidden.

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■ SQUELCH OFF

1. Press and hold the [SQL / REV] key for 2 seconds or press MIC's (✱⬚) key to disable squelch. Press and hold the [SQL / REV] key for 2 seconds or press MIC's (✱⬚) key again to resume squelch.

■ SCANNING FUNCTION

Use this function to automatically search for signals. 6 different scan types are available in the unit.

In parameter setting mode, choose Timer mode or Busy mode to determine the desired resuming condition. If the CTCSS(TSQ) squelch or DCS squelch is set, the audio can be heard only when the tone/code matches the incoming signal. Otherwise, scanning stops but no audio will be heard. The direction of scan, upward or downward, can be changed during the scan by rotating the main dial or pressing UP or DOWN keys in the desired direction.

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GROUP SCAN

Scan groups in memory mode or channel display mode.

Only channels stored on memory channels will be scanned. Channels 0 to 499 will be scanned.

However, C, PL/PH, PR are exceptions.

Scanning will start from channel 0, and channels will be divided into groups according to the group scan settings.

- When the group scanning step is set to 10
  10 groups (GROUP1: Channel 0 to 9, GROUP2: Channel 10 to 19, ...)
- When the group scanning step is set to 20
  25 groups (GROUP1: Channel 0 to 19, GROUP2: Channel 20 to 39, ...)

- When the group scanning step is set to 30
  17 groups (GROUP1: Channel 0 to 29, GROUP2: Channel 30 to 59, ..., GROUP17: Channel 480 to 499)
- When the group scanning step is set to 40
  13 groups (GROUP1: Channel 0 to 39, GROUP2: Channel 40 to 79, ..., GROUP13: Channel 480 to 499)
- When the group scanning step is set to 50
  10 groups (GROUP1: Channel 0 to 49, GROUP2: Channel 50 to 99, ...)

1. Press the [V/M/MW] key to enter memory mode. Or, turn off the power, then turn on the power again while pressing the [V/M/MW] key to enter channel display mode.
2. Select a channel from groups within scanning range.
3. Press and hold the push-button rotary key to start scanning.
   When scanning starts, the [S] icon will flash.
4. To cancel scanning, press any key except for [UP/DOWN].

> 🔊 NOTE If there is not channel to be scanned, a beep will sound and scanning will not start.

PRIORITY SCAN

Scan priority channels every 5 seconds in VFO mode or on the normal display of memory mode.

Priority scan is always executed in the background when the priority scan setting is set to ON.

When a priority channel receives a signal, the currently selected

frequency or channel will be switched to the priority channel and the [S] icon will flash.

Even if the frequency or channel selected before being switched has a reception channel, the signal received by the priority channel will be prioritized.

TONE SCAN

This function automatically searches for the CTCSS tone an incoming signal might carry. This feature is useful to search the encoding tone of a repeater, or to communicate with a station operating in TSQ (CTCSS squelch) mode.

1. Press [TS/DCS/LOCK] key to enter CTCSS decode setting mode.
2. Press [UP]/[DOWN] key for more than 1 second but less than 2 seconds to start scanning. It scans 39 tones in order.
3. The decimal point on the tone frequency will flash, and it stops when the matching tone is detected.
4. The scan won't resume until the operation is repeated.
5. Press any key (other than [UP]/[DOWN] keys) to exit.

MEMORY SCAN(CHANNEL SCAN)

Scans all memory channels unless Memory skip feature is selected for a given memory.

1. In memory modeor channel display mode, press [V/M/MW] key for 1 second to enter into channel scan.
2. Turn selector knob or press Microphone [UP]/[DOWN] key to change scan direction.
3. Press any key to exit.

> 🔊 **NOTE** If there is not channel to be scanned, a beep will sound and scanning will not start.

■ DCS SCAN

Repeatedly press [TS/DCS/LOCK] key until LCD displays DCS icons, then hold [TS/DCS/LOCK] key for 1 second to enter into DCS scanning. Once finding a matching DCS code, a voice will be heard and resumes scanning after 15 seconds.

■ CTCSS/DCS ENCODE AND DECODE SETUP

Many repeaters require a CTCSS tone or a DCS code encode setting as a "key" to access the system, so-called "selective-calling". Sometimes, CTCSS or DCS decode features are used on the output of a repeater so they can be used as a squelch. In this mode, regardless of the main squelch status, the audio can be heard ONLY when the matching tone/code signal is received. The combination of CTCSS squelch and DCS function is not available; only one or the other may be used for a given channel.The operation is available on VFO and memory mode. Dealer-Preprogrammed units can't operate this function manually. In the memory mode, the setting is temporary; changing the channel or turning off the radio will erase the setting.

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1. Press [TS/DCS/LOCK] key. The current setting will be displayed with T/SQ/DCS icons and relative frequency/code. Press the same key to select T/SQ/DCS setting.
2. The numbers (such as 88.5) represent the CTCSS frequency in Hz. When it is displayed with the 🅣 icon only, the unit transmits the sub-audible tone while the PTT is pressed (encode) and the repeater access is enabled (assuming the repeater is using 88.5Hz tone).
3. Press the same key again so that the 🆂🆀 icon shows up on the display. This is the CTCSS decode frequency. This enables CTCSS squelch (or Tone Squelch, TSQ).

4. Press it again so that the 3-digit number and **DCS** icon is displayed. This is the DCS code, and it enables DCS encoding and decoding.

For 2-4, rotate the push-button rotary knob or press the [UP]/[DOWN] keys to change tone or code. Press any key (Except **FUNC / PWR / TS / DCS**, **UP / DOWN** keys) to enter the setting and return to original status. The **T/SQ/DCS** icon will remain on the display to show the current selective-calling status. To exit, simply use the [TS/DCS/LOCK] key and press it until the relative status icon T/TQ/DCS disappears.

The CTCSS encoding and decoding frequencies may be set differently. The encode setting frequency automatically relates to the decode setting, but decode setting does not affect encode. The standard set of 50 different CTCSS tones are available. DCS encode/decode cannot be separated. The list of selectable tones and codes is shown on Appendix at the end of this booklet.

■ 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 [FUNC/SET] key until the ▣ icon appears on the LCD, then press push-button rotary knob, LCD displays offset direction and offset frequency.

2. Repeatedly press push-button rotary knob to select positive offset or 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 push-button rotary knob or Mic's [UP]/[DOWN] key to change offset frequency in accordance with the step setting.

6. Press any key except [FUNC/SET] and [V/M/MW] key to set and finish setting.

> **NOTE** Under channel mode, this operation can be temporarily available.
> 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, all keys except [FUNC/SET] and VOL Knob / PWR .

1. Press [FUNC/SET] key until LCD displays ▣ icon, then press [TS/DCS/LOCK] key until LCD displays ⛒ icon. Now keypad lockout function is valid.

2. Repeat above operation, ⛒ icon disappears, indicating keypad lockout function is invalid.

■ MEMORY NAME (ALPHANUMERIC TAG)

The memory channels stored in the memory-mode can be displayed with an alphanumeric tag instead of the default frequency display. Program the memory channel first.

There are 67 characters available including A-Z, 0-9.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "2".
2. Select alphanumeric tag setting by rotating the main dial or pressing the [UP]/[DOWN] keys. The display shows [A] flashing.
3. Rotate the main dial to select a character. Press the [V/M/MW] key. The character stops flashing and is entered.
4. The same flashing character appears next to it, ready for the next character to be entered. Repeat the same sequence, up to seven characters.
5. To delete all characters during programming press [CALL/H/L] key.
6. To exit after setting is done, press one of the following keys: [PTT], [FUNC/SET], [TS / DCS].

   After programming, the alphanumeric tag will be displayed on the designated channels, instead of the frequency, when in memory mode. The memory channel number and other status icons will also be displayed. If you wish to see the programmed frequency, press FUNC and it will be displayed for 5 seconds. To return to the alphanumeric display, wait 5 seconds or press any key.

   Pressing any key followed by FUNC returns to normal operation, regardless of the display status.

IMPORTANT	This function cannot be enabled without programming the memories.

■ MEMORY DISPLAY INDICATOR

Switch the frequency display and memory NAME display when a memory name is registered using the memory NAME function.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "3".

   The current setting will appear on the display.

   The default setting is "FRQ" (frequency display).

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

   The options are as follows.

   ▼ NM: Displays the memory name.

   ▼ FRQ: Displays the frequency.

NOTE	Pressing the [FUNC/SET] key when NM is selected displays the frequency for 5 seconds.

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3. Press the push-button rotary knob.

   The unit will go back to menu mode.

■ BEEP

Set whether or not to output the operation sound.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "4".

   The current setting will appear on the display.

   The default setting is "BEEPON".

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys

on the microphone to change the setting.

The options are as follows.

▼ ON: Outputs the operation sound.

▼ OFF: Does not output the operation sound.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ DIMMER SETTING

The backlight brightness of the display can be adjusted by selecting a level from 16 levels.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "5".

The current setting will appear on the display.

The default setting is [LAMP.7].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ LAMPIN: Darkest

▼ LAMP.1 to LAMP.14: Bigger numbers for brighter backlight.

▼ LAMPIN: Brightest

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ AUTOMATIC BACK LIGHT

When pressing any key on the unit, the backlight brightness becomes brightest for a few seconds. Set how many seconds you want to make the backlight brightest.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "6".

The current setting will appear on the display.

The default setting is [3] (seconds).

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ OFF:

Pressing any key on the unit does not make the backlight brightness brightest.

▼ 3:

Pressing any key on the unit makes the backlight brightness brightest for 3 seconds.

▼ 5:

Pressing any key on the unit makes the backlight brightness brightest for 5 seconds.

▼ 7:

Pressing any key on the unit makes the backlight brightness brightest for 7 seconds.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ TIME-OUT-TIMER

The TOT feature is popular in repeater systems. It prohibits the users from transmitting on the repeater after a certain period of time has elapsed. By setting this function and activating it according to the repeaters' requirement, the radio alerts the user by a beep 5 seconds prior to time-out.

When the time is expired, transmitting stops and the radio automatically returns to receiving mode. This avoids the repeater going into its TOT mode. Until the PTT is released once and pressed again, the radio will not transmit.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "7".

The current setting will appear on the display.

The default setting is [TOT .OFF].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ OFF: Does not set the time out timer.

▼ 30 (sec) to 450 (sec) (15 steps in 30 second increments):

Automatically switches to receiving mode after the set time has elapsed.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ TOT PENALTY

When the transmission is shut down in the TOT mode, this function prohibits another transmission for a selected time period.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "8".

The current setting will appear on the display.

The default setting is [TP .OFF].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ OFF: Does not set the TOT penalty time.

▼ 1 (sec) to 15 (sec) (15 steps in 1 second increments):

Sets the transmission delay time when transmission is finished by the time out timer.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ AUTO POWER OFF

This feature will automatically shut off the radio . It is useful for mobile operation to avoid draining the car battery. If there is no activity or use of the radio, it will turn off automatically after 30 minutes followed by a beep sound.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "9".

The current setting will appear on the display.

The default setting is [APO OFF].

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2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ OFF: Does not set the auto power off function.

▼ 10 (min) to 60 (min) (6 steps in 10 minute increments):

Automatically turns off the power after the set time has elapsed.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ MESSAGE DISPLAYED WHEN TRUNING ON THE POWER

Set whether or not to display the message when turning on the power.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "10".

The current setting will appear on the display.

The default setting is [MDL].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ OFF: Switches to receiving mode immediately.

▼ MDL:

Displays the device name for 2 seconds, then switches to receiving mode.

▼ MSG:

Displays the message set in the "SETTING THE MESSAGE DISPLAYED WHEN TRUNING ON THE POWER" chapter, then switches to receiving mode.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ SETTING THE MESSAGE DISPLAYED WHEN TRUNING ON THE POWER

Set the message displayed when turning on the power.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "11".

2. Refer to the operation method of the "Memory NAME" to set the message to display.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ BCLO SETTING

Transmission can be limited depending on the receiving state. When BCLO is set to ON, transmission can be initiated in the following situation.

• When any signals are not input (when [BUSY] is off)

• If the tone frequency matches and the squelch opens when the tone squelch is set

• If the code matches and the squelch opens when the DCS is set

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "12".

The current setting will appear on the display.

The default setting is [BCLO.OFF].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ ON: Sets the BCLO setting to ON.

▼ OFF: Sets the BCLO setting to OFF.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ TONE-BURST FREQUENCY

This is to access Tone-Burst repeaters which require a certain pitch of audible tone to activate "sleeping" repeaters. Usually, a repeater system does not require the tone once the repeater is activated.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "16".

The current setting will appear on the display.

The default setting is [TB .1750].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ 1750 (1750Hz), 2100 (2100Hz), 1000 (1000Hz), 1450 (1450Hz)

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ DEFAULT TONE VALUE

Set the TONE value displayed by operating the [TS/DCS/LOCK] key for the first time after turning on the power. Select one out of 39 types of standard tones.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "17".

The current setting will appear on the display.

The default setting is [T.67.0] (67.0Hz).

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ 67.0Hz to 250.3Hz (See the table below).

> 🔊 **NOTE**
> • 250.3Hz is followed by 67.0Hz.
> • 67.0Hz comes before 250.3Hz.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ DEFAULT SQ VALUE

Set the SQ value which is displayed by operating the [TS/DCS/LOCK] key for the first time after turning on the power. Select one out of 39 types of standard tones.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "18".

The current setting will appear on the display.

The default setting is [T.67.0] (67.0Hz).

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ 67.0Hz to 250.3Hz (See the table of the "DEFAULT TONE VALUE").

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DEFAULT TONE VALUE

67.0	69.3	71.9	74.4	77.0	79.7	82.5	85.4	88.5	91.5
94.8	97.4	100.0	103.5	107.2	110.9	114.8	118.8	123.0	127.3
131.8	136.5	141.3	146.2	151.4	156.7	162.2	167.9	173.8	179.9
186.2	192.8	203.5	210.7	218.1	225.7	233.6	241.8	250.3	

> **NOTE**
> • 250.3Hz is followed by 67.0Hz.
> • 67.0Hz comes before 250.3Hz.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ DEFAULT DCS VALUE

Set the DCS value which is displayed by operating the [TS/DCS/LOCK] key for the first time after turning on the power. Select one out of 104 types of standard codes.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "19".

The current setting will appear on the display.

The default setting is [T.67.0] (67.0Hz).

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ 023 to 754 (See the table below).

DEFAULT DCS CODE

023	025	026	031	032	036	043	047	051	053
054	065	071	072	073	074	114	115	116	122
125	131	132	134	143	145	152	155	156	162
165	172	174	205	212	223	225	226	243	244
245	246	251	252	255	261	263	265	266	271
274	306	311	315	325	331	332	343	346	351
356	364	365	371	411	412	413	423	431	432
445	446	452	454	455	462	464	465	466	503
506	516	523	526	532	546	565	606	612	624
627	631	632	654	662	664	703	712	723	731
732	734	743	754						

NOTE
- 754 is followed by 023.
- 023 comes before 754.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ AUTO-DIALER

This will automatically transmit pre-programmed DTMF tones.

TO PROGRAM TONES IN THE AUTO-DIALER MEMORY:

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "20".

NOTE Pressing the [FUNC/SET] and [TS/DCS/LOCK] keys simultaneously also displays the menu.

Default display is 0 on the right end of the display. Memory channel icon displays which of the ten autodial memories (0~9) is in use.

2. Use [UP]/[DOWN] keys to select the desired channel.

3. Rotate the main dial to select the first digit, then press [TS/DCS/LOCK] key to enter. The Cursor moves toward right. Repeat sequence to complete.

4. Use [-] for pause. The display scrolls when the 7th digit is entered. The numbers 0 to 9, pause, * and # can be stored up to a total of 16 digits.

5. To check the entered digits, press FUNC then rotate the main dial while [F] icon is on.

6. To delete, press [CALL/H/L] key. Press PTT, V/M, MHz or [SQL /

REV] keys to exit and return to original status.

■ DTMF TX SPEED

Set the tone output speed when outputting DTMF using the automatic dialer.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "21".

The current setting will appear on the display.

The default setting is [DTSP.50] (50ms).

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ 50 (50ms), 100 (100ms), 200 (200ms)

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ DTMF PAUSE TIME

Set the pause time when outputting DTMF using the automatic dialer.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "22".

The current setting will appear on the display.

The default setting is [DTP.500] (500ms).

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ 100 (100ms) to 2000 (2000ms) (20 steps in 100ms increments)

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3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ DTMF MONITOR

Set whether or not to output tones and tone calls output using the automatic dialer from the speaker of the unit.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "23".

The current setting will appear on the display.

The default setting is [DTM.ON].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ ON:

Outputs tones and tone calls output using the automatic dialer from the speaker of the unit.

▼ OFF:

Does not output tones and tone calls output using the automatic dialer from the speaker of the unit.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ SCAN TYPE

This is to select the scan resume condition. TIMER setting allows the radio to resume scanning after 5 seconds, regardless of the signal receiving status. BUSY setting resumes scanning when the received signal is gone. The scan mode is explained later.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "24".

The current setting will appear on the display.

The default setting is [SCAN.TMR].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ TMR: Activates the timer scan.

▼ BSY: Activates the busy scan.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ SCANNING STOP TIME -TMR

From "Switching the Scanning Type", select "Timer scan" to set the duration of time before switching to the next channel when receiving a signal.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "25".

The current setting will appear on the display.

The default setting is [ST-T.5] (5sec).

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ 3 (sec) to 10 (sec) (8 steps in 1 second increments)

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ SCANNING STOP TIME -BSY

From "Switching the Scanning Type ", select "Busy scan" to set the duration time before switching to the next channel after stopping receiving a signal.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "26".

   The current setting will appear on the display.

   The default setting is [ST-B.5] (5sec).

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

   The options are as follows.

   ▼ OFF (0sec) to 10 (10sec) (11 steps in 1 second increments)

3. Press the push-button rotary knob.

   The unit will go back to menu mode.

■ TONE SEARCH SCANNING SPEED

Set the scanning speed to search a tone frequency from the incoming tone signal.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "27".

   The current setting will appear on the display.

   The default setting is [SS-T.FA].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

   The options are as follows.

   ▼ FA: Searches fast.

▼ SLW: Searches slowly.

3. Press the push-button rotary knob.

   The unit will go back to menu mode.

■ DCS SCANNING SPEED

Set the scanning speed to search a DCS code from the incoming DCS signal.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "28".

   The current setting will appear on the display.

   The default setting is [SS-D.FA].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

   The options are as follows.

   ▼ FA: Searches fast.

   ▼ SLW: Searches slowly.

3. Press the push-button rotary knob.

   The unit will go back to menu mode.

■ PRIORITY SCAN SETTING

Set whether or not to check every 5 seconds whether the priority channel receives a signal or not.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "29".

   The current setting will appear on the display.

   The default setting is [PRISOFF].

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2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ ON:

Checks every 5 seconds whether the priority channel receives a signal or not.

▼ OFF:

Does not check whether the priority channel receives a signal or not.

> 🔊 **NOTE** If there is no priority channel, ON cannot be selected.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ MEMORY CHANNEL SCANNING SETTING

Set whether to skip programmed channels or scan only programmed channels when scanning memory channels.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "30".

The current setting will appear on the display.

The default setting is [SCHSKIP].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ SKIP: Scans skipping programmed memory channels.

▼ ONLY: Scans only programmed memory channels.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ GROUP SCANNING STEP

Set the channel step for group scanning.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "31".

The current setting will appear on the display.

The default setting is [GSTP.20].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ 10, 20, 30, 40, 50

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ BEAT SHIFT

Set whether or not to shift the frequency when the multiple of clock frequency is the receiving frequency.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "33".

The current setting will appear on the display.

The default setting is [BS OFF].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ ON:

Shifts the frequency when the multiple of clock frequency is the receiving frequency.

▼ OFF:

Does not shift the frequency even when the multiple of clock frequency is the receiving frequency.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ TUNING CONTROL

Set whether or not to allow operations for the push-button rotary knob and [UP]/[DOWN] keys on the microphone when the operation lock function is set.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "34".

The current setting will appear on the display.

The default setting is [TCTRON].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ ON:

Allows to operate the push-button rotary knob and [UP]/[DOWN] keys on the microphone when the operation lock function is set.

▼ OFF:

Does not allow to operate the push-button rotary knob and [UP]/[DOWN] keys on the microphone when the operation lock function is set.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

■ S-METER SQUELCH

Set whether to use the noise squelch or RSSI value to display the S-meter signal.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "35".

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The current setting will appear on the display.

The default setting is [S-M .OFF].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ ON:

Uses the RSSI value to display the S-meter signal.

▼ OFF:

Uses the noise squelch to display the S-meter signal.

3. Press the push-button rotary knob.

The unit will go back to menu mode.

31 ■ SQUELCH HANG TIME

Set the duration of time before switching to MUTE-CLOSE state after stopping receiving a signal when the S-meter is set to ON.

1. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to display the menu number "36".

The current setting will appear on the display.

The default setting is [S-HT.OFF].

2. Rotate the push-button rotary knob or press the [UP]/[DOWN] keys on the microphone to change the setting.

The options are as follows.

▼ OFF (0ms) to 900 (900ms) (10 steps in 100ms increments)

3. Press the push-button rotary knob.

The unit will go back to menu mode.

✻ In this chapter, operations shown with ■ is available to all units, □ is subject to dealer-programming or restrictions. Some of features may be functional in memory mode temporary, but the setting will return to the initial parameters after changing channel or turned off the unit.

DOWN UP

MIC

PTT

Numeric Keys

Lock Switch

DTMF ON/OFF
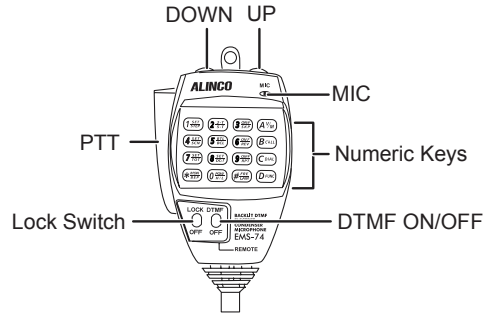
You can operate the radio by keypad or input desired frequency or channel through the EMS-74 microphone. Keypad operations may be blocked for dealer-programmed units.

■ 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 The keypad operation is suspended in DTMF position.

□ FUNCTION SETUP BY MICROPHONE KEYPAD

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

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9 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.

CONNECTION
Make a cable using 3.5 mm stereo-mini plugs as shown below. Make a master unit by setting and programming it as desired. Turn off both units. Connect the cable between the DATA jacks on both master and slave. Turn both radios on after the connection is made.

[SETTING: SLAVE SIDE]
1. Go to receive mode (VFO or Memory). Avoid using 9600bps data reception.
2. When it receives the clone data, LD*** shows up on the display.
3. When the transmission is successfully finished, the display will show [PASS].
4. Turn off the power. Disconnect the cable and repeat the sequence to clone the next slave unit.

[SETTING: MASTER SIDE]
1. Press [CALL/H/L] key with [FUNC/SET] key pressed. CLONE will be displayed and the radio enters the clone mode.
2. Press PTT. SD*** will be displayed and it starts sending the data into the slave unit.
3. [PASS] will appear on the display when the data is successfully transmitted.
4. The master radio may stay turned on for the next clone. Turn off the unit to exit from the clone mode.

   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. If you quit the operation in condition that the clone is incompleted please reset the slave unit.

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■ DEFAULT SETTING AFTER RESETTING DR-B185HT

	DR-B185HT	DCS encode and decode	-
Memory channel 0-499	-	Output power	HI
Offset direction	-	Key-lock setting	OFF
Offset frequency	600KHz	TOT	OFF
Channel step	12.5KHz	APO	OFF
CTCSS encode and decode	-	LCD color	Orange
CTCSS frequency	88.5Hz	-	-

Optional functions will be basically deativated and programmed values are erased.

■ TROUBLE SHOOTING

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 a new one.
(c) Display is too dim.	Set the LCD backlight parameter properly.
(d) No sound comes from speaker.	• Squelch level too hight. Decrease squelch level. • Selective-calling like TSQ activated. Press [Moni] key to monitor.
(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 (A ̽ M).
(g) [PTT] key is pressed but doesn't transmit.	• Microphone connection is poor. Connect microphone properly. • Antenna connection is poor. Connect antenna properly.

Please contact your dealer when a technical assistanc may be necessary.

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General	
Frequency Range	VHF: 136-173.995MHz
Number of Channels	500 channels
Channel Spacing	12.5KHz
Channel step	5KHz, 6.25KHz, 8.33KHz, 10KHz, 12.5KHz,
Operating Voltage	13.8V DC ±15%
Squelch	Carrier/CTCSS/DCS/5Tone/2Tone/DTMF
Frequency Stability	±2.5ppm
Operating Temperature	-10°C~+60°C
Dimensions(WxHxD)	164 (W) x 44 (H) x 183.6 (D)mm
Weight	about 1.5Kg

Receiver (TIA-603 standard testing)	
Sensitivity (12dB Sinad)	≤0.35μV
Adjacent Channel Selectivity	≥60dB
Intermodulation	≥60dB
Spurious Rejection	≥70dB
Audio Response	+1~-3dB(0.5 - 2.5 KHz)
Hum & Noise	≥40dB
Audio distortion	≤5%
Audio power output	>2W@10%

🔊 NOTE Specifications are subject to change without notice due to advancements in technology.

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■ 39 GROUPS CTCSS TONE FREQUENCY(HZ)

67.0	69.3	71.9	74.4	77.0	79.7	82.5	85.4	88.5	91.5
94.8	97.4	100.0	103.5	107.2	110.9	114.8	118.8	123.0	127.3
131.8	136.5	141.3	146.2	151.4	156.7	162.2	167.9	173.8	179.9
186.2	192.8	203.5	210.7	218.1	225.7	233.6	241.8	250.3	

■ GROUPS DCS CODE.

023	025	026	031	032	036	043	047	051	053
054	065	071	072	073	074	114	115	116	122
125	131	132	134	143	145	152	155	156	162
165	172	174	205	212	223	225	226	243	244
245	246	251	252	255	261	263	265	266	271
274	306	311	315	325	331	332	343	346	351
356	364	365	371	411	412	413	423	431	432
445	446	452	454	455	462	464	465	466	503
506	516	523	526	532	546	565	606	612	624
627	631	632	654	662	664	703	712	723	731
732	734	743	754						

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NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.