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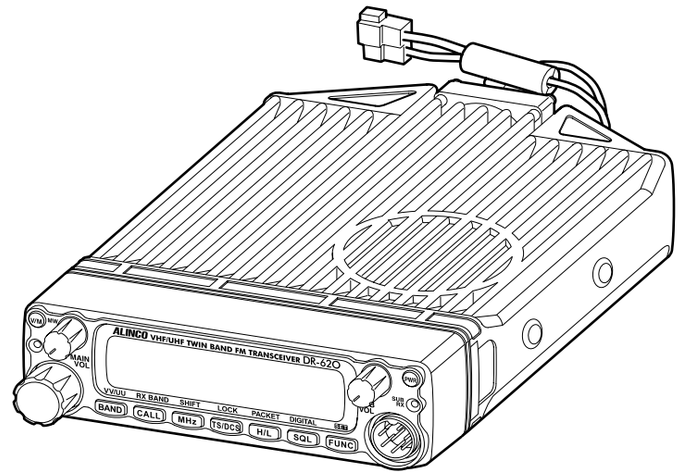
ALINCO

VHF/UHF FM TRANSCEIVER

DR-620T/E

Instruction Manual



Thank you for purchasing your new Alinco transceiver.
This instruction manual contains important safety and operating instructions. Please read this manual carefully before using the product and keep it for future reference.

ALINCO INCORPORATED

NOTICE

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 instruction manual, 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.*

Tested to Comply
With FCC Standards
FOR HOME OR OFFICE USE

Information in this document is subject to change without notice or obligation. All brand names and trademarks are the property of their respective owners. Alinco cannot be liable for pictorial or typographical inaccuracies. Some parts, options and/or accessories are unavailable in certain areas. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Conformity Information

In case the unit you have purchased is marked with a CE symbol, a copy of relative conformity certificate or document can be reviewed at http://www.alinco.com/usa.html.

Compliance Information Statement

VHF/UHF FM Transceiver DR-620T/E

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.

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Covington, OH 45318
Telephone: 937-473-2840

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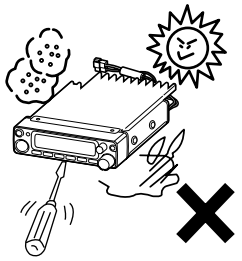
Before operating the transceiver

Attention

- Do not remove the case or touch the interior components. Tampering can cause equipment trouble.
- Do not use or keep the transceiver where it is exposed to direct sunlight, dusty places, or near sources of heat.
- Keep the transceiver away from TV's or other equipment when it interferes with reception.
- When transmitting for long periods of time at high power, the transceiver might overheat.
- Turn the power off immediately if the transceiver emits smoke or strange odors. Ensure the transceiver is safe, then bring it to the nearest Alinco service center.



Introduction

Thank you very much for purchasing this excellent Alinco transceiver. Our products are ranked among the finest in the world. This radio has been manufactured with state of the art technology and it has been tested carefully at our factory. It is designed to operate to your satisfaction for many years under normal use.

PLEASE READ THIS MANUAL COMPLETELY TO LEARN ALL THE FUNCTIONS THE PRODUCT OFFERS. WE MADE EVERY ATTEMPT TO WRITE THIS MANUAL TO BE AS COMPREHENSIVE AND EASY TO UNDERSTAND AS POSSIBLE. IT IS IMPORTANT TO NOTE THAT SOME OF THE OPERATIONS MAY BE EXPLAINED IN RELATION TO INFORMATION IN PREVIOUS CHAPTERS. BY READING JUST ONE PART OF THE MANUAL, YOU RISK NOT UNDERSTANDING THE COMPLETE EXPLANATION OF THE FUNCTION.

New and Innovative Features

Your new radio features some of the most advanced functions and reliable engineering available anywhere. The ALINCO design philosophy is focused on developing innovative usable features, including the following:

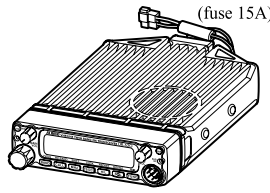
- A large, color-selectable display panel
  Very clear display of frequency, memory name etc. ensure convenient operation.
- Excellent frequency stability
  By using a temperature compensated crystal oscillator (TCXO), deviation less than +/- 2.5ppm is realized.
- V-V/U-U function
  Simultaneous reception of 2 signals within a same frequency band is possible (Excluding FM broadcasting band).
- High-quality materials are used throughout the product and a huge heat sink around the chassis ensures stable and durable operation.
- AM Air-band reception capability (T models only)
- 200 fully programmable memory channels with alphanumeric memory channel labels
- CTCSS, DCS and 5 different Tone-Bursts are standard for selective calling and repeater access worldwide.
- Applicable for APRS®/Packet communication (With the optional EJ-50U installed)*
- Theft Alarm feature
- Auto-Programming VFO for easier repeater access
- Cable-Clone function
- Power supply voltage display function
- Narrow-FM mode
- Microphone remote control function (EMS-57 microphone may be on option depending the version.)
- Front-Control unit separation

* APRS® is a trade mark of Mr. Bob Bruninga, WB4APR.

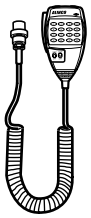
Standard Accessories

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

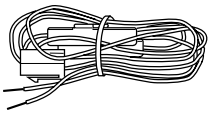
• Transceiver



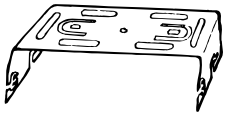
• Microphone EMS-53 or EMS-57 (with DTMF keypad)



• DC power cable with fuse holder (UA0038)



• Mobile mounting bracket. (FM0078Z)



•ACC cable (UX1290A)

• Hardware kit for bracket

Black screws (M4*8mm) 4pcs. (AE0012)

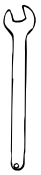
Tapping screws (M5*20mm) 4pcs. (AJ0003)

Screws (M5*20mm) 4pcs. (AA0013)

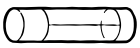
Washer (AZ0010)
S-washer (AZ0009)

Hexagonal nut (M5) 4pcs. (AN0002)

Small (spanner) wrench. (FM0079)



Spare fuses (a pair) 2pcs. (EF0005)



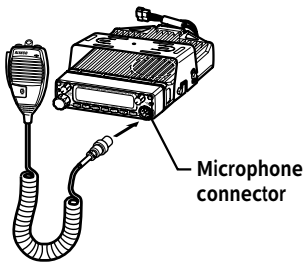
• Theft Alarm stickers 2pcs. (PR0454)
• Instruction manual (this manual)
• Warranty certificate (T version only) (PH0009A)
• EJ-50U manual & disc (with TNC version only)

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.

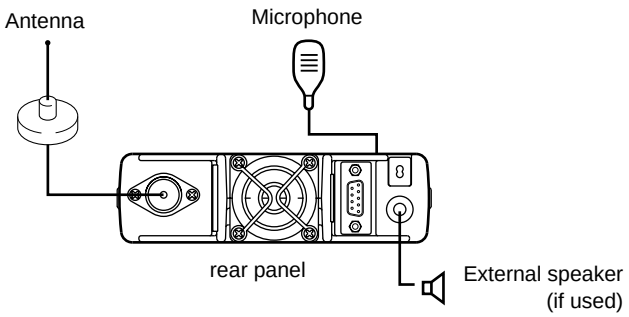
Warranty Policy:
Please refer to any enclosed warranty information or contact your authorized Alinco dealer / distributor for the warranty policy.

Initial Installation

Connect the microphone to the front panel of the transceiver.

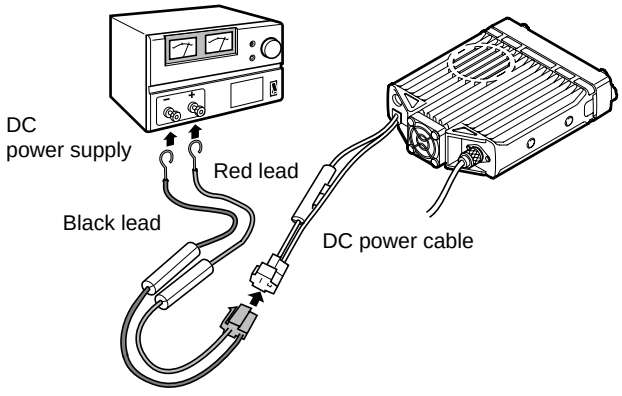


Connect antenna port to a 50 ohm antenna that covers the 2 m/70 cm bands, using good quality 50 ohm coaxial cable.



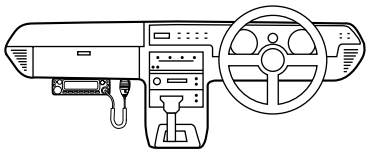
For a base station set up

The Transceiver requires a 12-13.8VDC negative grounded power source.
Use a regulated power supply capable of providing continuous current of 12A or more.
Power supplies that do not meet those specifications may cause malfunction and/or damage to the radio and will void the warranty. Alinco offers excellent communication-grade power supplies as optional accessories. Please contact your local authorized Alinco dealer.



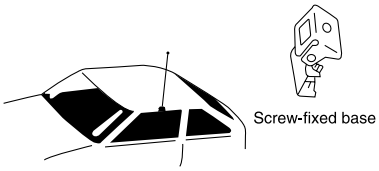
For a mobile station set up

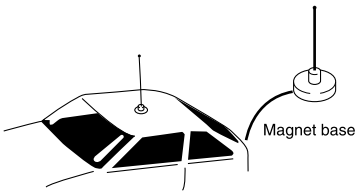
Location



The transceiver 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 or the performance of the set. 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 manufacturer. Please refer the next page for front control unit setting.

Installing a Mobile Antenna



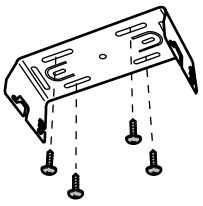


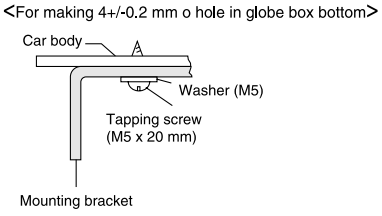
Use a 50 ohm coaxial cable to connect the antenna. Mobile antennas require an appropriate mounting base for proper installation and operation. For more information, see the documentation for your antenna.

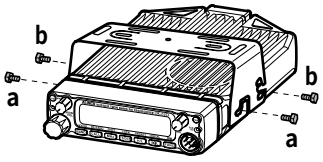
IMPORTANT: After installing your antenna, ensure that you have the best possible SWR reading. High RF environments can cause severe damage to your unit. Ensure that you are not in a high RF environment when operating the transceiver.

Installing the Transceiver

See the figure on the below.



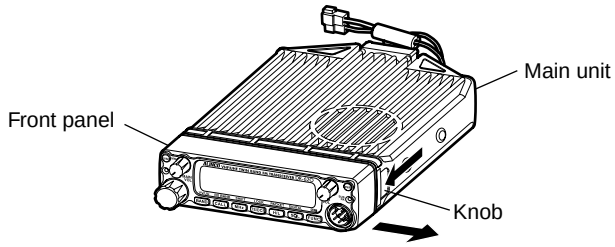




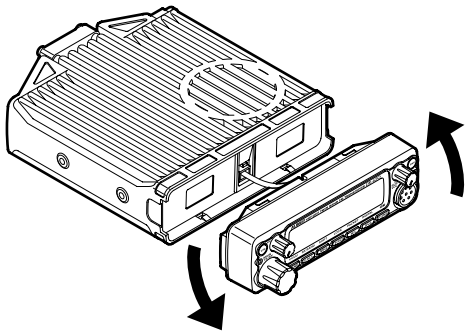
Front Panel

The main unit can be set with either side facing up.
Fix the front panel as you prefer.

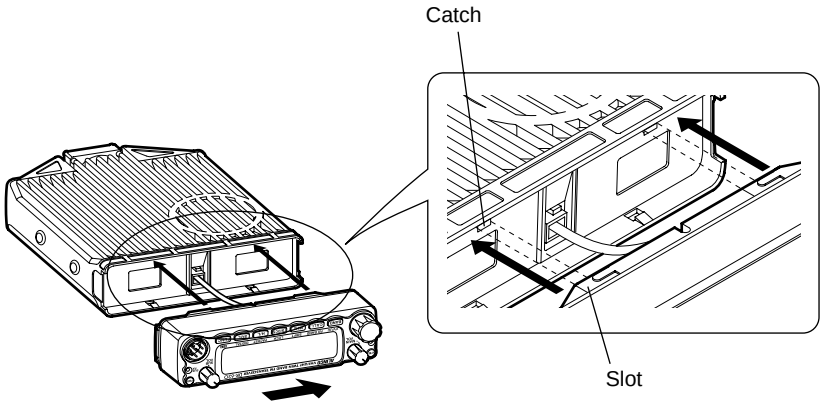
1. Slide the front panel while keeping the knob pressed.



2. Turn the front panel



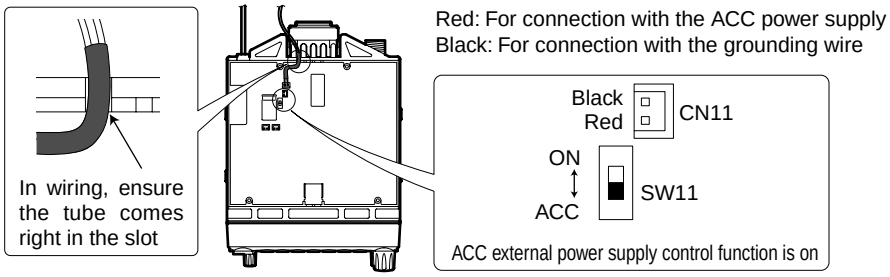
3. Match the catch in the main unit with the slot in the front panel and fit the front panel into the main unit.



4. Slide the front panel.

NOTE: By using the optional separation kit EDS-9, you can use the front panel and the main unit in a separate position. The instruction is provided in the EDS-9.

External power supply control function



WARNING: **The connection of cables may involve certain knowledge about the vehicle the unit will be installed. Consult with your car-dealer or service station for more information if necessary as we are not responsible of any damage this installation might cause to your vehicle.**

1. Be sure the vehicle has a negative-ground, 12VDC electric system before installation. Connect the provided DC cable with fuse-holder directly to the battery (red cable to the positive terminal) to minimize any possible ignition noise. Be sure the vehicle has a large capacity battery as the use of a transceiver may overload the electric system of the vehicle.

2. In addition, if the optional ignition-key ON/OFF feature is desired, use the provided ACC cable. Remove the cover by unscrewing 4 screws. Connect the ACC cable to the ACC power jack (CN11) on the rear side of the unit inside, trim the outgoing cable as shown above, select the ACC switch (SW11) to ACC position and reassemble the cover.

3. Be sure to cut the electric power supply off (by disconnecting the battery cables of the vehicle) and the ignition key is at OFF position for you and your car's safety. Connect another end of the ACC cable to the ACC terminal or ACC switch on the vehicle. Make sure all above sequence has been done properly. Set the vehicle's electric system back normal.

4. If this option is selected, the unit can be turned on/off either manually or automatically in accordance with the ignition key position.

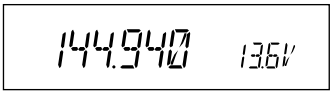
A: When the ignition key is turned to ACC or ON (start) position with the unit left turned ON, the unit will turn on automatically and turns OFF when the ignition key is turned to the OFF position.

B: To manually ON/OFF the power, leave the ignition key to ACC position and use PWR switch on the unit. If the ignition key is at OFF position the unit won't turn on. The power consumption, regardless of the ignition key position, of this feature is about 5mA. For operation without this option, use the PWR switch to turn the unit on/off always.

Power supply voltage display function

After connecting the transceiver to the power supply, the supply voltage can be confirmed by pressing the SQL key together with the FUNC key. The supply voltage to the transceiver is then seen on the display.
The transceiver will return to its normal operation when the power is switched OFF.

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

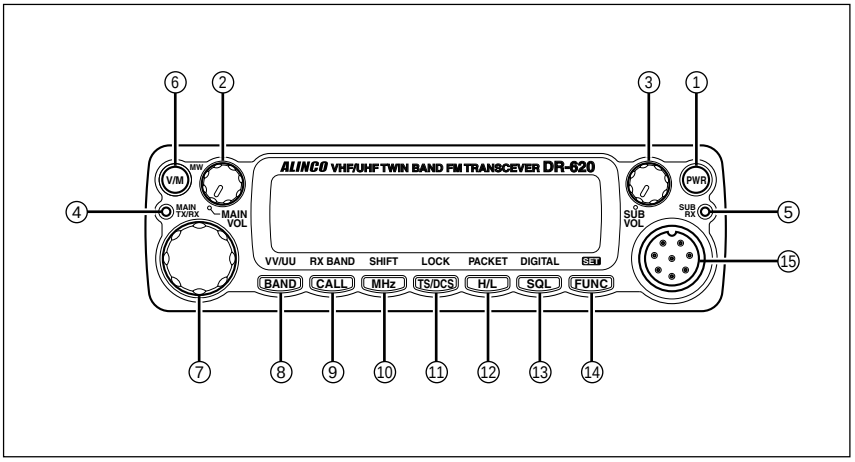


(Example) In case of 13.6V

IMPORTANT: The range of the displayed voltage is only from 7 - 16VDC. Because the displayed value is estimated, please use a voltmeter when a more precise reading is desired.

Part Names and Functions

Front Panel



•Primary Functions

No.	Key	Function
1	PWR key	Power turns ON/OFF whenever switch is pressed.
2	Main VOL knob	Adjusts the volume level on the MAIN band.
3	Sub VOL knob	Adjusts the volume level on the SUB band.
4	Main TX/RX indicator	During transmission on the MAIN, illuminates in Red, and during reception illuminates in Green.
5	Sub RX lamp	During reception on the SUB, illuminates in Green.
6	V/M/MW	Switches between VFO mode and memory mode.
7	Dial	Changes the frequency, memory channel and various settings.
8	BAND/VVUU	Switches the MAIN band to VHF or UHF.
9	CALL/RX BAND	Switches to CALL Mode.
10	MHZ/SHIFT	In VFO mode, changes frequency in 1 MHz steps.
11	TSDCS/LOCK	Sets the tone squelch and DCS setting.
12	HL/ PACKET	Switches HI/MID/LOW of transmission power.
13	SQL/DIGITAL	Sets the squelch level.
14	FUNC/SET	Sets functions.
15	Mic. Connector	Connects the provided microphone.

• Functions which can be activated while [F] appears, after pressing the FUNC Key

No.	Key	Function
6	V/M/MW	Write in to memory channel.
8	BAND/VVUU	Switches to VV/UU mode.
9	CALL/RXBAND	Switches reception bands.
10	MHZ/SHIFT	Sets the shift direction and the offset frequency.
11	TSDCS/LOCK	Sets the key lock function.
12	HL/PACKET	Accesses the packet communication mode or the geolocating communication mode.
13	SQL/DIGITAL	Accesses the digital voice communication mode.

* [F] illuminates when the FUNC key is pressed.

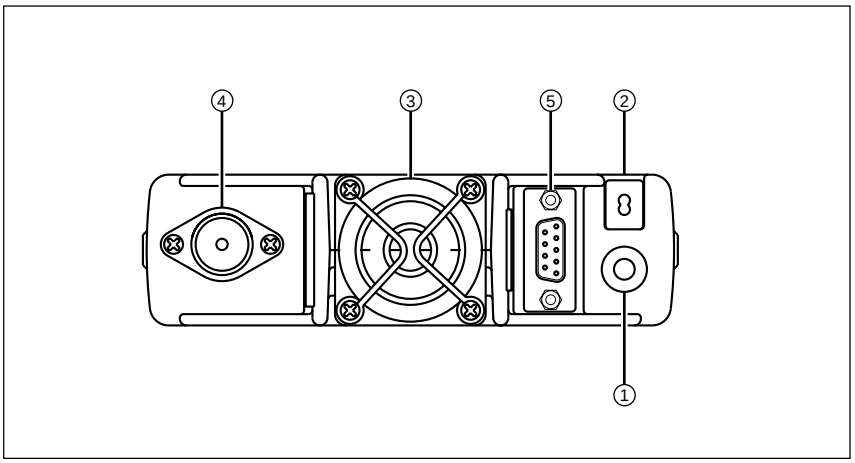
• Functions that can be activated while pressing the FUNC Key

No.	Key	Function
1	PWR	Reset to factory default settings.
5	V/M/MW	Erase the memory.
8	BAND/VVUU	Switches to the single band mode.
9	CALL/RXBAND	Accesses the clone function mode.
10	MHZ/SHIFT	Switches to wide/narrow mode reception.
11	TSDCS/LOCK	Switches to the AM reception mode.
12	HL/PACKET	Sets the channel name function.
13	SQL/D	Accesses the power supply voltage indication mode.

• Functions that require continuous pressing to be activated.

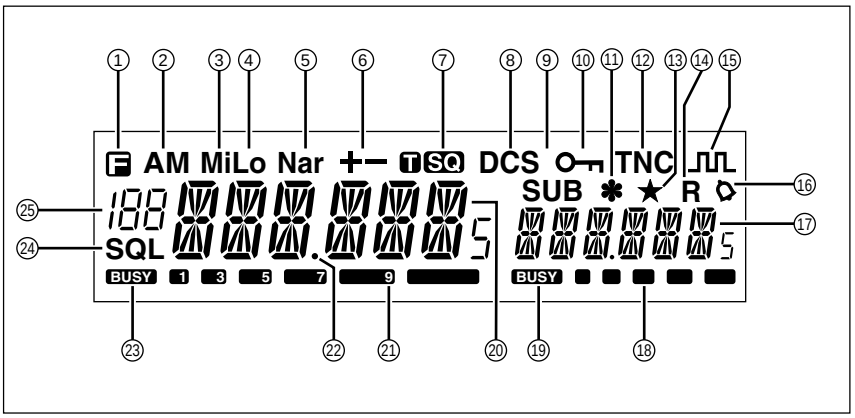
No.	Key	Function
13	SQL/DIGITAL	When pressed for 1 second, the monitor function is on. (When the shift is set, the reverse function is on.)
14	FUNC/SET	When pressed for 2 seconds, accesses the set mode.

Rear Panel



No.	Key	Function
1	External Speaker Terminal	Terminal for optional external speaker. (Also used for the clone function.)
2	Power cable	Connects to the 13.8VDC power supply.
3	Air-cooling fan	Cools the unit during transmission. (PTT activation)
4	Antenna Connector	Connect an optional antenna for 50 ohm impedance. (PL-259 or compatible)
5	D-SUB Connector (Optional)	Connects to a personal computer for packet use.

Display

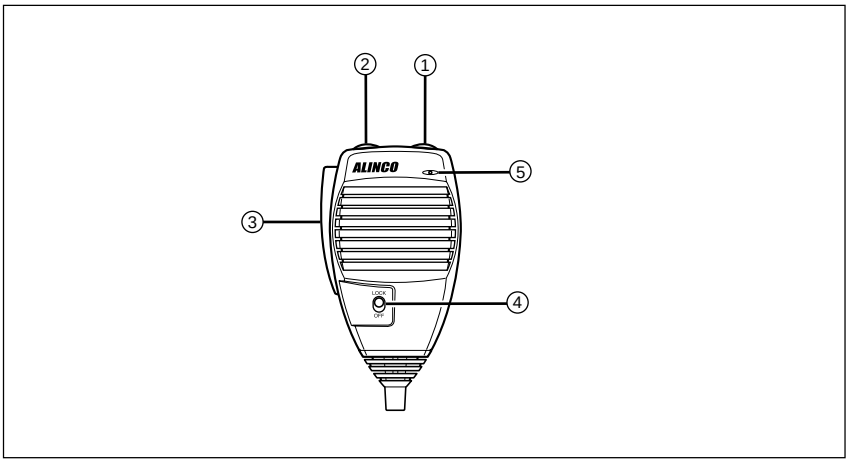


No.	Key	Function
1	F	Appears when FUNC Key is pressed.
2	AM	Appears during AM reception.
3	Mi	Appears when transmission power is set to MID.
4	Lo	Appears when transmission power is set to LOW.
5	Nar	Appears when in narrow band reception mode.
6	+/-	Appears when setting the shift.
7	TSQ	Appears when setting the tone squelch.
8	DCS	Appears when setting the DCS.
9	SUB	Appears when SUB band is on the MAIN side.*
10		Appears when setting the key lock.
11	*	Appears when setting the theft alarm function.
12	TNC	Appears when in packet mode (Optional EJ-50U required).
13	★	Appears when SUB band is in the memory mode or call mode.
14	R	Appears when the reverse function is activated.
15		Appears when in the digital voice communication mode.**
16		Appears when setting the bell (pager) function.
17		Indicates the frequency or memory name on the SUB side
18	S Meter	Indicates the relative signal strength level of transmission/ reception on the SUB side.
19	BUSY	Appears when a signal is being received on the SUB side.
20		Indicates the frequency or memory name on the MAIN side.
21	S Meter	Indicates the relative signal strength level of transmission/ reception on the MAIN side.
22	.Decimal point	Appears when changing the DCS decode settings. Disappears when setting the skip.
23	BUSY	Appears when a signal is being received on the MAIN side.
24	SQL	Appears when setting the squelch level.
25		Indicates memory numbers in the memory mode.

*SUB band is the band exclusive for reception when in V-V/U-U.

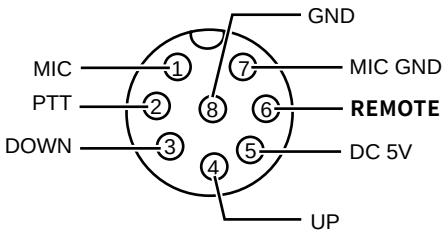
** T version only. Optional EJ-47U required.

Microphone EMS-53 (Standard)*



No.	Key	Function
1	UP	Increase the frequency, memory channel number, or setting value.
2	DOWN	Decrease the frequency, memory channel number, or setting value.
3	PTT	Press the PTT(Push-To-Talk)key to transmit.
4	DTMF	DTMF tone keys
5	DTMF / REMOTE Switch	Set to DTMF when you don't want to operate remote control functions. So that DTMF keys do not function except during transmit to send DTMF codes manually.
6	Lock Switch	Locks out the UP and DOWN keys.
7	MIC	Speak here during transmission.

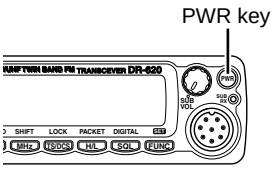
Mic. Connector Diagram (While looking in the front view of the connector)



* If the version you have purchased contained EMS-57 Multi-function microphone, please also refer page 54.

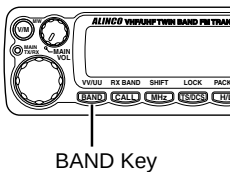
Basic Operations

Turning the unit on and off



By pressing the PWR key the power is turned on. By pressing the PWR key again, the power is turned off. Refer page 9 for external power supply control.

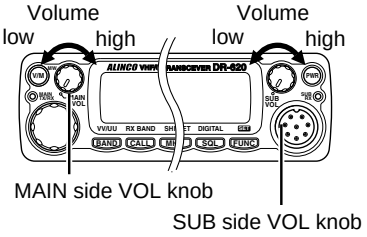
Switching the MAIN band



Repeating to press the BAND key will switch the MAIN band between VHF band and UHF band.
The MAIN band allows transmission and reception. The SUB band only allows reception. The MAIN band and the SUB band can receive simultaneously.

IMPORTANT: On the SUB side, no setting other than the frequency and S meter is indicated.

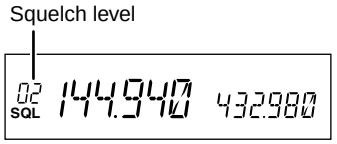
Audio Volume level setting



The volume of the MAIN band is adjusted by the VOL knob on the MAIN side, and the volume of the SUB band by the VOL knob on the SUB side.
Rotate the VOL knob clockwise to increase the audio level, counterclockwise to decrease.

Squelch level setting

Adjust threshold level of the squelch. A squelch eliminates the background noise when a signal is not received. To set squelch level on the MAIN band side,



1. Press SQL Key.
[SQL] icon appears on the display and the squelch level will be shown on it.

2. By rotating the main dial or by using the UP/DOWN keys on the microphone, adjust the squelch level to the desired level.
The new squelch level will be stored if the power is turned off.

3. When completing the setting, press PTT or any key on the front panel other than the Band key. Then the display will return to the original status; or if there are no operations for 5 seconds, the unit will automatically complete the setting and the display will return to the original status.

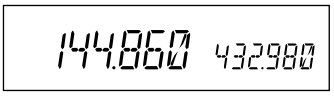
Squelch level setting on the SUB side

To set the squelch level on the SUB side, press the BAND key while [SQL] appears.

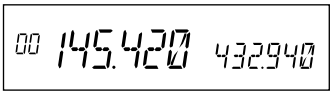
NOTE:
- 21 levels, between (00) and (20), are available for the squelch level. (Higher level settings will make the squelch more difficult to open.)
- The default level is 02.

VFO mode

VFO tuning is set as a default mode at the factory. VFO (variable frequency oscillator) allows you to change the frequency in accordance with the selected channel step as you rotate the main dial or by using the UP/DOWN keys on the microphone. VFO mode is also used to program the data to be stored in the memory channels or to change the parameter settings of the transceiver.



VFO mode



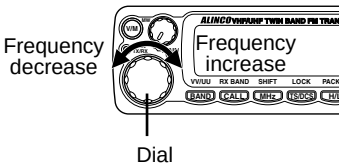
Memory mode

1. Identify the current mode by checking the display. If "M" or "C" icon is NOT displayed on it, the unit is already in the VFO mode.
If memories have not been programmed, the unit will not be switched to the memory mode.

2. Otherwise press "V/M" keys until those icons are gone.

Change frequency by the channel step

Rotate the main dial clockwise to increase the frequency, counterclockwise to decrease. The UP/DOWN keys on the microphone act in the same way.



Change frequency by 1 MHz step

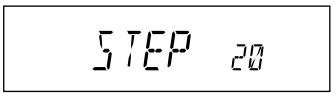
This will enable a quick change of frequency in 1 MHz steps:

1. Press MHz key. The digits after 100 kHz will disappear from the display.

2. Follow the same sequence as above to change the value.

Setting the channel step

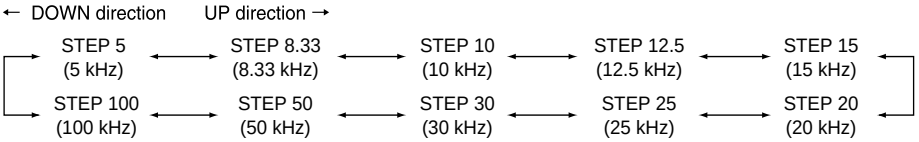
1. When the unit is in VFO mode, enter into the SET mode and select the channel step setting display. (Refer to page 32 and 33 for SET mode).



Channel step setting display (default)

2. The current channel step will be displayed.

3. You can change the channel step as below by rotating the dial.



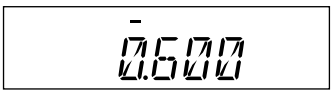
4. Pressing any key other than FUNC key or SQL key on the unit will complete the setting and the display will return to the original status.

IMPORTANT: By changing the channel step frequency, settings below 10kHz may be automatically corrected.

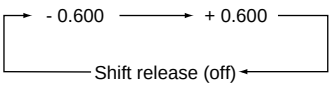
Shift Direction and Offset frequency setting

Conventional repeaters are operated in the DUPLEX mode, which receives an incoming signal on one frequency and re-transmits on another. The difference between these two frequencies is called the offset frequency. The offset is variable between 0 to 99.995MHz on this unit.

1. After pressing the FUNC key, by pressing MHz key while [F] appears on the display, the display will show the current status of offset frequency and shift direction. By repeating to press MHz key, shift direction will be changed as right.



At –600kHz



2. By rotating the dial (pressing UP/DOWN key) while shift frequency is displayed, one click will change the frequency by one channel step.

3. After pressing the FUNC key, rotating the dial will change the frequency by 1MHz depending on which direction the dial is rotated (how UP/DOWN key is pressed).

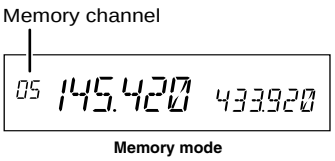
4. Pressing PTT key or V/M key will complete the setting and the display will return to the original status.

Memory Mode

This mode allows recalling and operating the preprogrammed frequency or setting. This unit provides up to 200 memory channels (80 exclusive channels each for VHF and UHF, from 00 to 79CH and 40 common channels for VHF and UHF, from 100 to 139), 1 CALL channel each for V and U (C), 1 program-scan edge memory channel each for V and U (PL) (PH) and 1 VFO automatic program setting channel (AL) (AH).

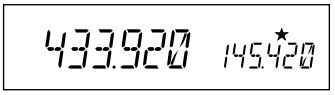
Recalling a memory channel

1. Select the memory mode by pressing V/M key. [00] appears on the display to indicate that the unit is in the memory mode.
Repeat to switch the mode between memory and VFO.



Memory mode

2. Select a memory channel.
Rotating the main dial (pressing UP/DOWN key) will increase or decrease a memory channel number by 1 channel step. For recalling a memory on the SUB band, first switch the MAIN band by the BAND key. When the SUB side is in the memory mode or CALL mode, [★] appears on the display.



In case the SUB side is in the memory mode

When recalling any memory number between 100 and 139, the display on the SUB side will disappear.

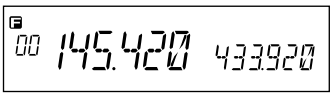
IMPORTANT: If memory channels have not been programmed, the unit will not be switched to the memory mode by pressing V/M key. Please read memory channel programming on the next page.

How to program memory

1. Select a frequency to be programmed in the VFO mode and set the parameters as appropriate. Refer the next page for programmable parameters.

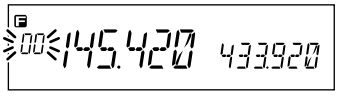
2. By pressing FUNC key, [F] and [Memory No.] icons will appear on the display.

3. Rotate the main dial (or press UP/DOWN key) to select the desired memory channel number.



4. An empty channel is shown with a flashing [Memory No.] icon.

5. By pressing V/M key while FUNC is on the display, programming will be completed with a beep sound.



During the unregistered channel

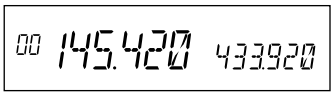
6. If a previously programmed channel is selected in the step 3, the memory channel will be overwritten by the step 5.

7. When CH-C is selected, CALL channel will also be rewritten.

IMPORTANT:
- **Program the Theft-Alarm data in CH99.**
- **For Channels from 100 to 139, VHF/UHF band can be programmed indiscriminately. (VHF/UHF mixed scanning is possible by the memory program scanning.)**

Memory channel deleting

1. Select the memory mode by pressing V/M key.

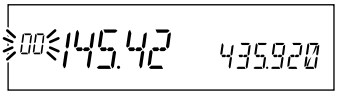


Memory Mode

2. Select the desired memory channel number by rotating the main dial.

3. The programmed memory channel has the memory number illuminated on the display.

4. By pressing M/W key together with FUNC key while [F] icon is on, a beep will sound and the memory will be deleted. At the same time, [Memory No.] icon will start flashing.



NOTE: When a LCD memory channel is flashing, the full contents of the memory are displayed in the LCD.
After pressing FUNC key again, if you press M/W key while [F] icon is on, you can restore a deleted memory. However, after changing CH or the mode, restoration will not be possible.

Programmable data in the memory channel

Memory channel including 00 – 99, 100 – 39, CALL channel and AL channel can store following:

- Frequency
- Shift frequency
- Shift direction (+ / -)
- Tone encoder frequency
- Tone decoder frequency
- Tone encoder/decoder setting
- DCS encoder code
- DCS decoder code
- DCS setting
- Skip CH setting
- Busy channel Lock Out (BCLO)
- Digital mode setting
- Digital code
- Narrow mode setting
- AM mode setting

IMPORTANT: In PL/PH/AH, only frequency can be programmed.

Channel name (Alphanumeric) registration function

The memory channels stored in the memory mode can be displayed with an alphanumeric tag instead of the default frequency display. There are 67 characters available including A-Z, 0-9.

1. In the memory mode, select a channel to be programmed.

2. Press the H/L key together with the FUNC key.

3. The display shows [A] flashing.

4. Rotate the dial to select a character to be programmed.

5. By pressing the BAND key, the character is illuminated and entered.
An identical character to the one just entered flashes on the immediate right ready to be edited.

6. Enter with the BAND key. (Repeat the same sequence)

7. Pressing the CALL key during programming will delete all characters to be programmed.

8. Pressing any key other than the BAND key and the CALL key will complete the setting and the display will return to the original status.

NOTE: In the memory mode, a designated alphanumeric tag is displayed instead of the frequency for a channel with a designated channel name (CH number is displayed unchanged). By pressing the FUNC key for 5 seconds, the frequency will be displayed.
(By pressing any key during operation, the display will return to show a channel name. But by operating a key designated for some FUNC key, the unit will enter the designated setting mode.)

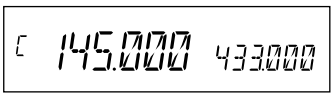
CALL mode

This is a memory mode that allows the transceiver to quickly recall the assigned memory channel by simply pressing the CALL key, regardless of the current status of the unit.
The default setting is 145.00MHz/433.00MHz, and available 1ch each on VHF and UHF band.

To recall a CALL channel

Select the desired VHF or UHF band by pressing BAND key.

1. Press CALL 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 key again or press V/M key to exit CALL mode.

3. No scan functions are available in CALL mode.

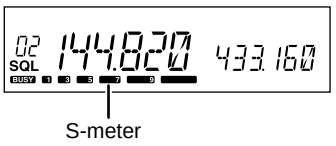
To store a desired setting in the CALL channel, follow the memory mode programming instructions and assign your selected settings to memory channel C. The call channel can be modified but cannot be eliminated or hidden.

To receive signals

1. Be sure to have the unit connected to the appropriate antenna, powered on, set the audio volume and squelch level properly on both MAIN and SUB bands.

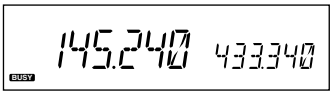
2. Select the desired band by pressing BAND key and browse frequencies or select desired frequency to listen to ongoing communications. The S-meter shows relative signal strength when the transceiver detects an incoming signal, and RX display lamp (green) turns on.

3. If the S-meter indicates an incoming signal but nothing is heard from a speaker, check audio level, squelch level, and CTCSS/DCS decoding status, which are explained elsewhere in this manual.



Monitor function

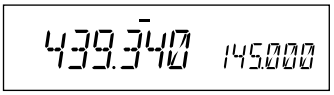
A Monitor function is available to receive weaker signals. Press and hold SQL key for more than 1 second. Regardless of the level setting of the squelch, it will be opened and the Busy icon/RX lamp turn on the display. Press any key on the front panel to exit.



IMPORTANT: Monitor function only operates on the MAIN band. Monitor function operates irrespective of Tone squelch/DCS function setting.

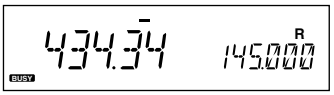
Reverse function

This function is for monitoring the transmission frequency instead of receiving frequency in repeater operation. This technique is commonly used to check if it is possible to communicate without using a repeater by monitoring the accessing, station's signal strength.



When -5.000MHz SHIFT is set

1. Keep pressing the SQL key for more than 1 second while SHIFT is set.
[R] icon illuminates on the display to indicate that the reverse function is activated and the squelch opens.



2. Pressing any key will cancel the operation.

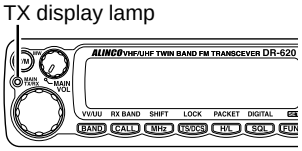
To transmit

1. Set the transmission band to the MAIN side.

2. Be sure that you are authorized to operate on the selected frequency. Check the system and monitor the frequency to make sure that you are not going to disturb any ongoing communications.

3. Press the PTT key on the microphone.
TX display lamp (red) illuminates to show the unit is transmitting.

TX display lamp



4. Speak into the microphone in a normal tone while keeping the PTT key pressed.
Hold the microphone approximately 5cm away from your mouth. Keeping this distance too close or speaking too loud may result in poor audio.

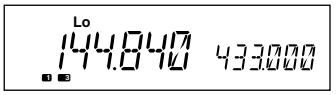
5. Releasing the PTT key will complete the transmission and the unit will be back for receiving.

NOTE: Pressing the DOWN key together with the PTT key will transmit the CALL tone signal. DR-620E will transmit the Tone Burst signal. See page 39 for details.

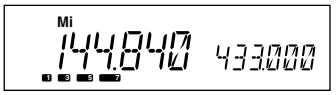
IMPORTANT: If you press the PTT key out of the transmission frequency range, [OFF] icon will appear on the display. Transmission is not possible in this while.

Switching the transmission power

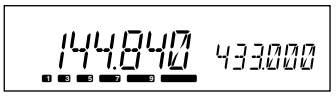
1. Press the H/L key. The transmission power switches from Hi to Mid, Mid to Lo and then Lo to Hi.
At MID power, [Mi] icon, and at LOW power, [Lo] icon illuminates. Nothing appears on the display at Hi power. The default is HI power.
RF meter shows •• when transmitting at LOW power, •••• at MID power and •••••• at HI power.



At LOW power



At MID power



At HI power

Transmission power	620T/E	
	VHF	UHF
HI	50W	35W
MID	10W	10W
LOW	5W	5W

IMPORTANT: The output power level cannot be changed during transmission.

Parameter Setting Mode

IMPORTANT: Please read the following pages thoroughly prior to the change of any parameters.
THE PARAMETERS CANNOT BE SET WITHOUT ENTERING THE SET MODE.

By entering the Parameter Setting mode, some of the radio's operating parameters can be changed to suit your application. The following is the Selectable Parameters' Menu.

NOTE: The Alphanumeric Channel Tag setting will not appear in the menu until memories have been programmed first!

A list of the setting mode

Cut and keep the following list of the setting mode for your convenience.

Parameters Setting Mode

Default display		Function
STEP	20	Channel Step setting
TIMER		Scan type switching
BEEP	2	Beep sound ON/OFF
TOT	OFF	Time-Out-Timer ON/OFF
TOTP	OFF	TOT penalty ON/OFF
APO	OFF	Auto-Power-Off ON/OFF
ALERT		Tone Burst frequency setting*
CKSFT	OFF	Clock Shift setting
BELL	OFF	Bell function setting
BCLO	OFF	Busy-Channel-Lock-Out setting
SCR	OFF	Theft Alarm ON/OFF
COLOR	1	Illumination color switching
LAMP	4	Dimmer setting
C		Call sign setting (packet)
HB	1200	Transmission speed setting (packet)
BCON	0	Beacon interval setting (packet)

↑ Press the FUNC key /UP key
↓ Press the SQL/DOWN key

*DR-620E has TB1750 Tone burst frequency as the default.

To use the parameter setting mode

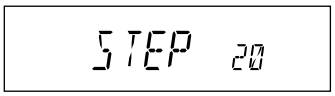
1. Press the FUNC key for more than 2 seconds to enter the parameter Setting mode.

2. Select a menu by pressing the FUNC key and the SQL key, or UP/DOWN keys on the microphone.

3. Rotate the main dial to change the setting.

4. Pressing the FUNC/SQL and UP/DOWN key will complete the setting and enters to the next menu.

5. Pressing any key other than the FUNC/SQL and UP/DOWN key will complete the setting and exits the parameter setting mode.

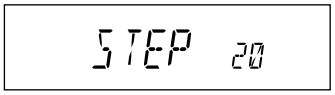


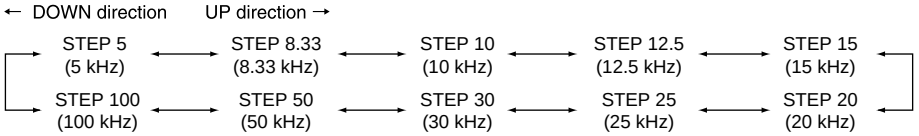
At default display

(Refer page 27 for how to enter the setting mode.)

Channel Step setting

This is to select the channel step to be used in the VFO mode. Refer to the chart below for the relation of the actual step frequency and how it is displayed.

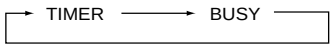




NOTE: The default is as follows.
- DR-620E [STEP 12.5]
- DR-620T [STEP 5]

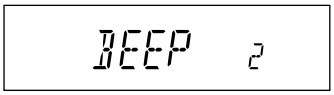
Scan Type

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.



Beep Sound

This is to change the volume of a beep sound during operation.



1. [BEEP2] icon appears on the display.

2. By rotating the dial, the display will change as below and the volume of a beep sound will be changed.