Rhein Tech Laboratories, Inc.
360 Herndon Parkway
Suite 1400
Herndon, VA 20170
http://www.rheintech.com

Client: Alinco, Inc.
Model: DJ-G7T
Standards: FCC 15.121
& IC RSS-215
Report: 2009134

Appendix J: Manual

Please see the following pages.

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Page 24 of 52

ALINCO

144/430/1200MHz TRIPLE BAND FM TRANSCEIVER

DJ-G7
Instruction Manual

Thank you for purchasing your new Alinco transceiver. Please read this manual carefully before using the product to ensure full performance, and keep this manual for future reference as it contains information on after-sales service.
In case addendum sheet(s) and corrigenda are inserted to the package of this product, please read it and keep them together with the instruction manual for your future reference.

ALINCO, INC.

The following accessories are supplied with the DJ-G7. Please confirm that nothing is missing before using the product.

DJ-G7 Transceiver
Flexible Whip Antenna EA-163
Li-ion Battery Pack EBP-73
Drop-in charger EDC-173T (120V) or EDC173E (220V)
Dry cell case EDH-35
Belt Clip EBC-23
Hand Strap
Instruction Manual (this booklet)

Accessories may vary depending on the model you have purchased. Contact your local dealer for information on specifications of standard accessories and warranty details.

NOTICE / Compliance Information Statement

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 transceiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

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

144/440/1200MHz FM amateur radio handheld transceiver DJ-G7T

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.

Manufacturer:

ALINCO, Inc.
Yodoyabashi Dai Bldg 13F, 4-4-9, Koraibashi, Chuo-ku, Osaka 541-0043 JAPAN

CE Conformity Information

Alinco, Inc. Electronics Division hereby declare on our sole responsibility that the product(s) listed below comply the essential requirements of the Directive 1999/5/EC, The council of 3/9/99 on Radio Equipment and Telecommunication Terminal Equipment and the mutual recognition of their conformity and with the provisions of Annex, after having performed the required measurements at Notified Bodies per Standards, and relative certificate(s) or document(s) can be reviewed at http://www. alinco. com/Ce/

DJ-G7E FM amateur radio handheld transceiver

144.000~145.995MHz / 430.000~439.995MHz / 1260~1299.995MHz

CE 0560 ①

This device is authorized for use in all EU and EFTA member states. An operator's license is required for this device.

Contents

1.Warning

1-1 Warning

To ensure safe operation of Alinco's products, please read "Warning" before using this product. To ensure safe operation and prevent any danger to life and property, you may find symbols shown below in this manual. Please read and understand the meaning of these symbols before starting using to use this product.

Symbols	Explanation
⚠ Danger	This symbol is intended to alert the user to an immediate danger that may cause loss of life and property if the user disregards the warning.
⚠ Alert	This symbol is intended to alert the user to a possible hazard that may cause loss of life and property if the user disregards the warning.
⚠ Caution	This symbol is intended to alert the user to a possible hazard that may cause loss of property or injury if the warning is disregarded.

Symbol	Explanation
⚠	The △ symbols inform content of what the user should be aware of danger, alert and caution. Information of what to be cautious of is specifically drawn inside the symbols.
🚫	The ○ symbols inform prohibited acts. Specific information of what is prohibited is drawn inside or nearby the symbols.
🔌	The ● symbols inform content of what the user is enforced and instructed to do. Specific information of what is instructed is drawn inside the symbols (in this case the symbol instructs the user to unplug the adapter from the wall outlet).

The manufacturer declines any responsibilities against pure economical loss due to loss of communication opportunities caused by external factors such as malfunctions, bungles, failures and/or blackouts.

⚠ Danger

■Environment and condition of use

🚫 For your safety, do not drive while handling the radio. It is recommended that you check local traffic regulations regarding the use of radio equipment while driving.
Some countries prohibit the operation of transceiver while driving.

🚫 Do not use this product in close proximity to other electronic devices, especially medical ones. It may cause malfunction and/or errors in those devices.

❗ In case a liquid leaks from the product, do not touch it. It may damage your skin. Rinse with plenty of cold water if the liquid contacted your skin.

🚫 Never operate this product in facilities where radio products are prohibited for use such as abroad aircraft, in airports, within or near the operating of business wireless stations or their relay stations, and in hospitals (do not even switch the product on).
It may disturb safe flying, proper operation of the stations, interfere with reception of radio waves and may cause malfunction and/or errors in medical devices.

🚫 Use of this product may be prohibited or illegal outside your country. Be informed in advance when you travel.

❗ The manufacturer declines any responsibilities of life and/or property due to failure of this product when used to perform important tasks like life-guarding.

🚫 Do not use multiple radios in very close proximity. It may cause malfunction, errors and/or failures in the product(s).

❗ The manufacturer and local dealers decline any responsibilities of errors and/or failures in the products when used set in any system and/or electronic device.

🚫 Do not connect the product to unspecified options and/or accessories manufactured by other manufactures. It may cause malfunction to the product.

1

■Handling this product

Be sure to reduce the audio output level to minimum before using an earphone or a   headset. Excessive audio may damage hearing.

This product is adjusted before shipped. Do not disassemble or remodel the product. It may result in fire, electric shock and/or malfunction.

Do not cover this product with a cloth. Such a situation may cause heating of the product and transforming the case may result in fire. Avoid direct sunlight and use the radio in a well-ventilated environment.

Do not splash, allow water to penetrate into, and/or wet the product. It may result in fire, electric shock and/or malfunction.

Do not operate this product in a wet place such as shower room. It may result in fire, electric shock and/or malfunction.

Do not place the product in a container carrying conductive materials, such as water or metal in close proximity to the product. If water leaks and/or metal penetrates into the product, it may result in fire, electric shock and/or malfunction.

■About chargers

Do not use any adapter other than the specified voltage. It may result in fire, electric shock and/or malfunction.

Do not plug multiple devices including the plug of the adapter into a single wall outlet. It may result in overheating and/or fire.

Do not handle, connect and/or disconnect the adapter with a wet hand. It may result in electric shock.

Securely plug the adapter into the wall outlet. If a metal obstacle comes into contact with the metal potion of the adapter, it may result in fire, electric shock and/or malfunction.

Do not use the product with dirt attached on the metal portion of the adapter. It may result in fire, electric shock and/or malfunction.

■About stabilized power supply

Do not use any stabilized power supply other than the specified voltage. It may result in fire, electric shock and/or malfunction.

Do not plug multiple devices including the plug of the stabilized power supply into a single wall outlet.

Do not handle, connect and/or disconnect the plug of the stabilized power supply with a wet hand. It may result in electric shock.

Securely plug the mains connector of the stabilized power supply into the wall outlet. If a metal obstacle comes into contact with the metal potion of the mains connector, it may result in fire, electric shock and/or malfunction.

Never process the DC cables and/or use the stabilized power supply with the fuse holder removed. It may result in fire, electric shock and/or malfunction.

■Cigar-lighter cable

Use only cigar-lighter cables specified by the manufacturer. If unspecified cables are used, the may result in fire, electric shock and/or malfunction.

Do not handle the cigar-lighter cable with a wet hand. It may result in electric shock.

■In case of emergency

In case of the following situation(s), please turn off the product and remove the batteries. In case you are using the charger, unplug the adapter from the wall outlet. If you use the product in abnormal situation(s), it may result in fire, electric shock and/or malfunction. Please contact your local dealer of this product for service and assistance. Do not try to troubleshoot the problem by yourself.

■When a strange sound, smoke and/or strange odor comes out of the product.
■When the product is dropped or the case is broken or cracked.
■When a liquid or foreign body penetrates inside.
■When a power cord is damaged (including cases when the coating is damaged and when cord is broken)

11

1

For your safety, turn off the then remove all related AC lines to the product and its accessories from the wall outlet if a thunderstorm is likely.

■Maintenance

Do not open the unit and its accessories. It may result in injury, electric shock and/or malfunction. Please contact your local dealer of this product for service and assistance.

⚠ Caution

■Environment and condition of use

Do not use the product in proximity to a TV or a radio. It may cause interference and receive interference.

Do not install in a humid, dusty or insufficiently ventilated place. It may result in fire, electric shock and/or malfunction.

Do not install in an unstable or vibrating position. It may result in injury when/if the product simply falls or falls to the ground.

Do not place the product in a place where temperature rises abnormally, such as in places unprotected from direct sunlight and/or in proximity to the vent of a heater in a car. Temperature will rise inside the product which may cause deformation and/or discoloration of the case and components that may result in fire.

Do not place the product in places where it may be exposed to oily smoke and/or steam. It may result in fire, electric shock and/or malfunction.

■About transceiver

Be cautious of the whip antenna so it does not come into contact with contact with your eyes.

Do not connect devices other than the specified ones to the jacks and ports on the product. It may result in damage to the devices.

For your safety, turn off the unit and remove the batteries, and if you are using the charger, unplug the adapter from the wall outlet when not using the product for a long period.

■About chargers

Do not pull the cord when unplugging the adapter from the wall outlet. It may result in fire, electric shock and/or malfunction. Be sure to hold the adapter when unplugging.

Do not use the adapter in proximity to heaters. It may result in fire, electric shock and/or malfunction.

■Maintenance

When maintaining the product, turn off the unit and remove the batteries, and if you are using the charger, unplug the adapter from the wall outlet for your safety.

Use a soft, clean and dry cloth to wipe off dirt and condensation from the surface of the product. Never use benzene, thinner, alcohol or detergent for cleaning.

■When using external energizer

When using the cigar-lighter outlet in a car, use the optional cigar-lighter cable (EDC-36).

Please turn off the unit when connecting and disconnecting the cables of external energizer.

Do not directly connect the unit to cars equipped with 24 volts system batteries. It may result in malfunction.

When you are switching power supplies for external energizer, there may be cases when the product responds to switching noise.

1

■About water-proof efficiency

If the water-proof caps and other parts are securely tightened, the product can be used in rain or snow without a water-proof cover. However, the manufacturer doesn't guarantee complete water-proof in environments where violent water splashes the product, such as in water sports, and where the product is in danger of being submerged regularly. Also, the manufacturer doesn't guarantee the product against salt damage when used in environments where it is splashed by salt water. Please be aware that the water-proof efficiency will be lost when used with unspecified options and/or DC jacks. Never immerse the unit under the water nor wash it with running water as the water-proof efficiency of all of products is not guaranteed because we don't test grade one by one before shipment at the factory. If you maintain the product well by wiping the product with a dry cloth when it is wet and removing the batteries to keep the inside dry, you can use it for a long period in a normal condition. In addition, please be aware that the rubber materials that are used for water-proofing may lose water-proof efficiency due to age deterioration. The manufacturer guarantees a period of 1 year for the product as well as the water-proof parts.

■About 1200MHz frequency

- You may experience fading such as hearing more noise at the 1200MHz frequency than at the 144MHz and 430MHz frequencies, though this is because the receiver signal is unstable especially when traveling and not because of a malfunction of the product.
- Adopting a temperature compensated crystal oscillator (TCXO), the stability grade of frequency of this product is very high. While communicating with transceivers that don't adopt this oscillator, there are possibilities that the frequency drifts when asking QSO especially in 1200MHz. This is due to the QRH of the other station and not due to a malfunction of the product.

■About operation frequencies and spurious

When the received frequencies are in the following relations, there may be cases when you receive non-modulated carriers. This is due to the frequency composition of the product and not due to a malfunction.

Main side frequency - 51.65MHz=Sub side frequency - (50.75 X 2) MHz
Main side frequency - (51065 x 2) MHz=Sub side frequency + 50.75MHz
Main side frequency - (51.65 x 2) MHz=Sub side frequency − 50.75MHz
(VHF bandwidth - 51.65MHz) x integral multiple=VHF bandwidth frequencies
(VHF bandwidth - 51.65MHz) x integral multiple=UHF bandwidth frequencies
(UHF bandwidth - 51.65MHz) x integral multiple=UHF bandwidth frequencies

When the received frequency is around 3 times the transmitted frequency, it causes   suppression.

When received simultaneously, if the sub band's VCO frequency is near the main band's IF frequency, the indicated frequency causes reception suppression irrespectively.

1-2 Before transmitting radio waves

There are many business radio stations operating nearby ham bands. Be cautious not to cause interference when transmitting radio waves around such radio stations. Even when amateur radio stations adhere to radio laws, there are unexpected cases of radio disturbance. When operating this product while traveling, please be very careful.

1-3 At the end

·This product is manufactured and shipped under strict management. However, if you find anything suspicious about the product, contact your local dealer as soon as possible.
·Using the large-bandwidth function of this product, there are cases when you can't receive radio waves and/or cases when you hear noise due to the inner spurious of the unit and these cases are not caused by malfunctions.
·Information in this document is subject to change without notice or obligation.
·In cases of disorderly binding and/or pages missing, we will exchange this document for a new one for no charge.

2.Features

DJ-G7 has the following main features.

1. Adopting full-duplex system that allows operating the main band and the sub band simultaneously.

2. Triple band hand transceiver that allows transmitting and receiving 1200MHz frequency as well as 144MHz and 430MHz.

3. Loading independent dials respectively to the main band and the sub band. The operation frequencies, volume and squelch level can be adjusted.

4. Adopting a large-screen full-matrix LC that allows easy operation with clear characters and easy-to-read icons.

5. Allowing receiving FM radio station programs and aeronautical radio communication corresponding to a wide range of received frequencies from 0.5 to 1300MHz.

6. Loading a bar antenna at the bottom of the unit that allows clearer reception of AM radio station programs.

7. Loading VOX function allowing asking QSO with hands free.

8. Loading 2 modes of bugging device detecting functions. In cases when a bugging device is likely to be used, the unit alerts you with an icon and beep.

9. Loading clone function that allows copying configurations and various data between the same units. Configurations and data can be edited when connected to a PC.

10. Including CTCS/DCS reverse tone squelch function as standard equipment.

11. Loading channel scope function that allows monitoring signals on the channel received and nearby.

12. Loading modulated-carrier canceller that allows squelching noise heard when there is no communication when receiving railroad radio and MCA business radio.

13. Loading a Wild Key that allows jumping to set mode function frequently used.

3.Installing Accessories

3-1 Antenna

3-1-1 Attaching the Antenna

1. Hold the antenna by its base and turn it clockwise (right).

2. When it stops, confirm that the antenna is securely connected.

MEMO
- The antenna of this product uses material that is more flexible than conventional ones.
- For connecting external antennas, this connector is also used.

3-1-2 Removing the Antenna

1. Turn the antenna counter-clockwise (left) to disconnect.

3-2 Hand Strap

1. Attach the hand strap to the hole at the back of the product as shown in the illustration.

Hand Strap

3-3 Belt Clip

3-3-1 Attaching the Belt Clip

Belt Clip

1.Fix the belt clip along the groove on the back of the product, and turn the screw clock-wise (right).
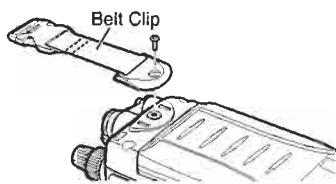
2.Confirm that the belt clip is securely attached.

*There are cases when the screw loosens. Check the screw occasionally.
*The belt clip is adjusted to use a belt with a width of 8 centimeters maximum.

3-3-2 Removing the Belt Clip

1.Turn the screw counter-clockwise (left) and remove the belt clip.

3-4 Battery Pack

For the charging procedures of Li-ion battery pack (EBP-73), please refer to "Charging Battery Packs with a Basket (P.21)" and"Charging Battery Packs with DC Jacks (P.20)".

3-4-1 Attaching the Battery Pack

1.Align the catches on the transceiver with the grooves on the battery pack, and push the battery pack in the direction of the arrow (1).

2.Slide the latch in the direction of the arrow (2).

(1) Catches (2) Groove
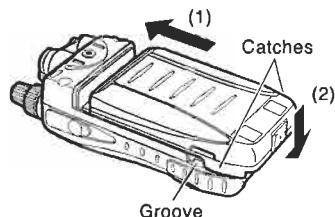
3-4-2 Removing the Battery Pack

1.Slide the latch at the bottom of the battery pack in the direction of the arrow (1), and remove the battery pack (2).
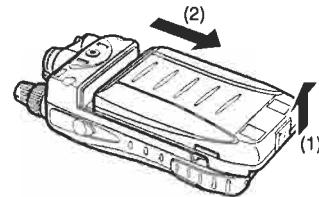
CAUTION

•The battery pack isn't fully charged when shipped. It must be charged before use.

•Charging should be conducted in a temperature range of 0°C to +40°C (+32°F to +104°F).

•Do not modify, dismantle, incinerate or immerse the battery pack in water as such actions can be dangerous.

•Never short-circuit the battery pack terminals, as this can cause damage to the equipment or lead to heating of the battery which may cause burns.

•Unnecessary prolonged charging (overcharging) can deteriorate battery performance.

•The battery pack should be stored in a dry place where temperature is in the -10°C to +45°C (-14°F to +113°F) range. Temperatures outside this range can cause the battery liquid to leak. Exposure to prolonged high humidity can cause corrosion of metal components.

•The battery pack is a consuming part. When its operating time becomes considerably short after a normal charge, please consider that the pack is exhausted and replace it with a new one.

•The battery pack is recyclable. As it can be recycled, do not waste it and take it to your local waste officials.

•Wipe off dirt and condensation from the surface of the product, battery pack and charger with a dry cotton bud.

•If you're not using the battery pack for a while, charge it once in 3 months to prevent deterioration of the batteries.

3-5 Charging Battery Packs with DC Jacks

This product uses an adjunct adapter and a DC power supply (DC 12 V, more than 1A: EEC/EN60950 standard) that allow charging the adjunct Li-ion battery pack through the transceiver. It can be charged in approximately 5 hours from the state of discharge.

1.Refer to "Battery Pack (P.18)," and attach the battery pack.

2.Connect the plug of the adapter to the DC jack of the product and plug the adapter into a wall outlet.
  *The adapter shown in the illustration may vary depending on the included adapter.

AC adapter*

AC adapter plug
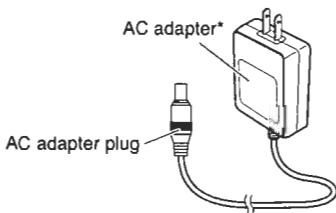
•Refer to "Battery Level Icon (P.23)" for the indication while charging.

CAUTION

•Do not transmit or receive radio waves while connecting the adjunct adapter. It may cause malfunction.

MEMO

•Please read the cautionary statement included in the optional accessories, and use the product properly and safely.
•The adjunct adapter can only be used to charge this product.
•If the voltage is unstable, the charger will not operate properly.

3-6 Charging Battery Packs with a Basket

When using the adjunct basket, the product can be charged in approximately 3 hours from the state of discharge.

1.Connect the basket to the plug of the adapter.

2.Plug the adapter into the wall outlet, and insert the transceiver into the basket.
The red indicator on the basket turns on while charging.
When charging is completed, the red indicator turns off.
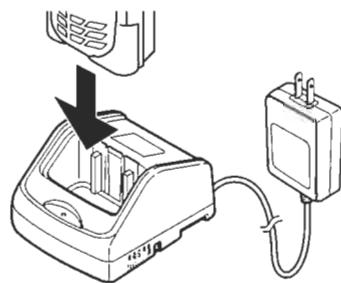
MEMO
•In case the transceiver can't be charged with the battery pack attached, charge the battery pack alone and confirm whether something is wrong.

3-7 Prevent Short-Circuiting the Battery Pack

Be extra cautious when carrying the rechargeable battery pack: short-circuiting will produce a surge in current possibly resulting in fire.

DON'T carry the battery pack with metals of any type.	Carry the battery pack inside bags wrapped with non-conductive cloths or packs.	DON'T wrap the battery pack with cloths with metal plating and DON'T enclose it directly inside a bag with metal processing.
DON'T make the terminals come into contact with metal of any type, e.g. nails, pushpins, and DON'T place the battery pack in proximity to conductive materials.		Do protect by spreading a non-conductive sheet on a flat surface.

21

3-8 Dry Cell Pack

1.Lift the catches up and remove the cover.

2.Set 4 size AA batteries in the case, and close the cover in the order of (2)→(3). Confirm that the cover is securely closed. Use alkaline dry cells. Manganese dry cells cannot be used.
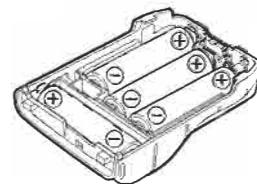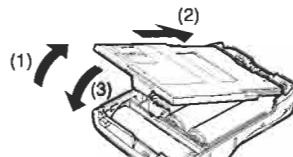
MEMO

•When using dry cells, refer to "Setting Batteries (P.75)".

CAUTION

•The dry cell case is not water-proof.
•Be careful not to mistake the polarity of +/-. It may cause electric leakage, fire and/or explosion.
•When setting the dry cells, use the same types of the same manufactures and use new ones.
•When exchanging dry cells, change all of them to new ones.
•The use of rechargeable batteries is prohibited. The manufacturer declines any responsibilities against loss and/or injury to body and/or property when rechargeable batteries are used.
•Wipe off dirt and condensation from the surface of the electrode that come into contact with the dry cells with a clean dry cloth or a cotton bud.
•When exchanged with improper types of batteries, it may cause explosion.

3-9 Battery-Level Icon

The battery-level icon indicated on the display of the transceiver shows the remaining amount of the battery. When it changes to empty, please charge the battery pack or replace the cells with new ones.
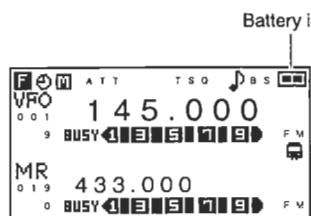
Battery icon

The battery-level is full.

The battery-level is reducing.

The battery-level is almost empty.
Exchange the battery pack or charge it.

The battery is charging.

• When the transceiver is turned off, an icon indicates "charging" on the display.
When charging is finished, it indicates "charging finished."
(In case of using a basket, "charging finished" will not be indicated on the display.)

4.Names and Operations of Parts

4-1 Names of the Transceiver and Operations

4-1-1 Top and Front
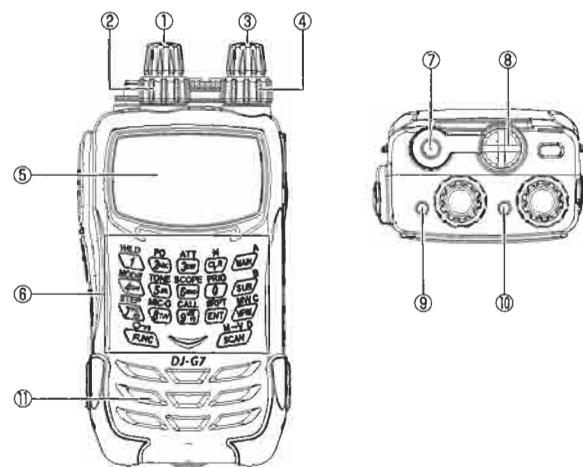
	Name	Function
①	Main Dial (upper)	Rotate the dial to select the frequency of the main band and memory channel and for changing various settings. When the dial is pressed while the **F** lamp is turned on, the Set mode is set.
②	Main Dial (lower)	Rotate the dial to change the volume of the main band and for changing various settings.
③	Sub Dial (upper)	Rotate the dial to select the frequency of the sub band and memory channel and for changing various settings. When the dial is pressed while the **F** lamp is turned on, the Set mode is set.
④	Sub Dial (lower)	Rotate the dial to change the volume of the sub band and for changing various settings.
⑤	Display	Indicates the state of the transceiver. Refer to "Indicators of Display" for details.
⑥	Keypad	Used for directly inputting frequencies and setting various settings.
⑦	Antenna Connector (SMA)	The adjunct antenna should be securely connected to the transceiver. If you plan to use an optional antenna, select one that is tuned to the operating frequency.

	Name	Function
⑧	Earphone/ Microphone terminals	Connect the specified optional external earphone/microphone to the transceiver. When the terminals aren't used, securely cover them for water-proofing.
⑨	Main TX/RX lamp	The light is green when the squelch of the main side is not muted. The light is red during transmission.
⑩	Sub RX lamp	The light is green when the squelch of the sub side is not muted.
⑪	Microphone	Speak approximately 5 centimeters from the microphone.

4

4-1-2 Sides
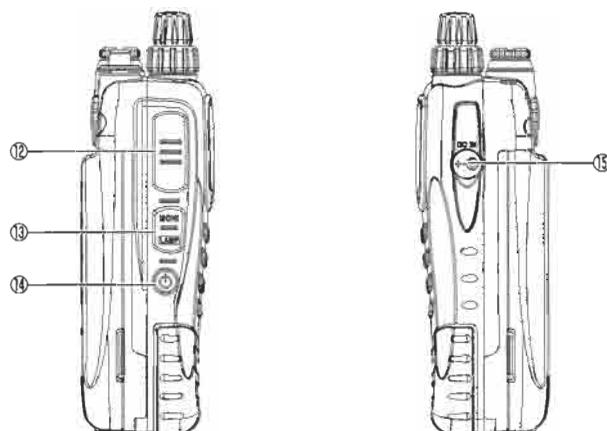
	Name	Function
⑫	PTT key	Press the PTT key to transmit, release to receive.
⑬	MONI key (LAMP) key	When the MONI key is pressed, the squelch mute function is switched off. When pressing the MONI key after pressing the ⟨FUNC⟩ key, illumination settings can be set.
⑭	Power key	Press the power key down for approximately one second to turn on/off the unit.
⑮	DC jack	This is an external power supply connecting terminal. It can be connected to adapters or can be used in cars by being connected to an optional cigar-lighter cable. Use a DC from 7.0 to 16 V and more than 3 A.

4-1-3 Keypad

4
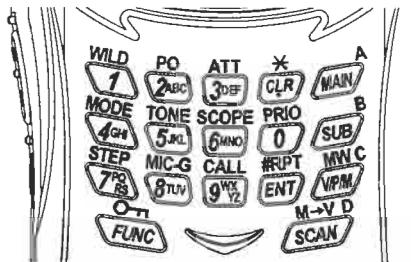
key	Function	After pressing the FUNC key	Continuously pressing keys (approximately for one second)	Operating dials while pressing keys
1	Inputs 1	Wild key	Registering and releasing Quick Memory (when Memory Mode is turned on)	-
2	Inputs 2	Transmitting power setting		
3	Inputs 3	Attenuator setting		
4	Inputs 4	Switching radio wave types		
5	Inputs 5	Tone Squelch / DCS / modulated-carrier canceller setting		
6	Inputs 6	Channel Scope setting		
7	Inputs 7	Channel Step		
8	Inputs 8	Microphone Gain setting		
9	Inputs 9	Recalling Channel Step		
0	Inputs 0	Priority function	-	
.	Inputs arithmetic points	Memory Clear (when memory mode is turned on)		
ENT	Determination of inputs Repeater shift	Repeater function		
MAIN	Switches between bands/banks	-	Switching Main Band Dual/Mono Band	Switching bands/banks
SUB	Switches between bands/banks	Switching Main Band/Sub Band frequencies	Switching Sub Band Dual/Mono Band	
V/P/M	Switches operation modes	Memory Registration / Memory Editing / Memory Name function	-	-
SCAN	Scan function	M→V function		Selecting Scan mode
FUNC	Function key	Turning off **F**	Key lock setting	Adjusting 1MHz up/down

4-2 Display (LCD)
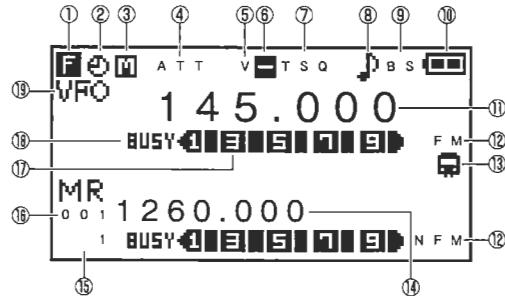
No.	Name	Function
①	**F**/**Oᴛ**/**Oᴇ**	Appears when the FUNC key is pressed and when the Key lock is activated.
②	⏱	Appears when the Auto Power Off function is activated.
③	**M**/**S**	Displays the operation band.
④	**ATT**	Appears when the Attenuator function is activated.
⑤	**V / D**	Appears when the VOX function is operating and the Auto Dialer is transmitting.
⑥	**─**/**⊞**	Displays the shift direction of frequencies.
⑦	**T / TSQ / DCS**	Appears when the Tone Squelch and DCS functions are activated.
⑧	♪	Displays when the bell function is set.
⑨	**BS**	Displays when the Battery Save function is activated.
⑩	**▭**	Displays the battery-level.
⑪	145.000	Displays the frequency of the main band.
⑫	**FM**	Displays the types of radio waves (AM, FM, NFM and WFM).
⑬	🖳	Appears when the modulated-carrier canceller function is activated.
⑭	1260.000	Displays the frequency of the sub band.
⑮	**1**	Displays the Memory Bank number.
⑯	**001**	Displays the Memory Channel number.
⑰	**◀1∎3∎5∎7∎9▶**	Displays the receiving level and the transmitting power.
⑱	**BUSY/MUTE**	Appears when the squelch is not muted.
⑲	**VFO**	Displays the state of the operation mode.

5.Basic Operation

5-1 Turning On the Power

1.The power turns on when the ⏻ key is pressed continuously (approximately for two seconds).
The same operation is carried out to turn the power off.

5-2 Adjusting the Frequencies

●Adjusting the Frequencies of the Main Band
Rotate the main dial (upper).

●Adjusting the Frequencies of the Sub Band
Rotate the sub dial (upper).
The frequencies increase when rotated clockwise and decrease when rotated counter-clockwise.

5-3 Adjusting the Audio Output (Volume)

There are 21 audio output levels (from 0 to 20).
The default setting is level 10.
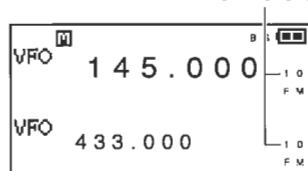
●Adjusting the Volume of the Main Band
Rotate the main dial (lower).

●Adjusting the Volume of the Sub Band
Rotate the sub dial (lower).
The audio becomes louder when rotated in clockwise and quieter when rotated counter-clockwise.

Volume level

VFO Ⓜ   B 📶
     145.000 ⌐ı o
              F M

VFO   433.000 ⌐ı o
              F M

CAUTION
•Be careful of the volume when using earphones. Confirm the volume at a low level and then raise it gradually.

MEMO
When nothing can be heard
•When the squelch is closed or the mute function is activated, the received sound can't be heard even when the level of the volume is increased. Please read "Adjusting the Squelch (P.29)" and "Mute Function (P.30)" for details.

5-4 Adjusting the Squelch

●**About Squelch**

Squelch is a function that outputs audio from speakers only when receiving a signal higher than a certain level. As it eliminates the harsh noise heard from speakers when there are no receiver signals, it makes it easier to wait for signals. Increasing the squelch level allows the reception of strong signals though weak signals can't be received.

Outputting audio by receiving signals is described as "opening the squelch" and the opposite is described as "closing the squelch." When the squelch opens depends on how strong the received signal is and is determined by the setting level of the squelch.

Such levels are allowed to be adjusted as they slightly change under conditions such as the location where the signal is received and/or the received frequencies.

There are 10 squelch levels that can be adjusted in a range from 0 to 9.

5-4-1 Operation

●**Adjusting the Squelch of the Main Band**

Press the main dial once and rotate the main dial (upper).

```
┌────────────────────────────┐
│ Ⓜ                  B S ▆▆ │
│ VFO   145.000            │
│                       F M │
│ MAIN Squelch              │
│   3                        │
└────────────────────────────┘
```
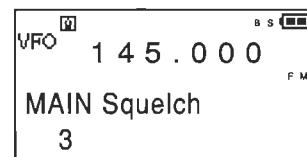
●**Adjusting the Squelch of the Sub Band**

Press the sub dial once and rotate the sub dial (upper).

```
┌────────────────────────────┐
│ SUB Squelch               │
│ 3                          │
│ VFO   433.000           │
│                       F M │
└────────────────────────────┘
```
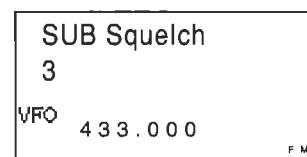
The squelch level increases when rotating the dial clockwise and decreases when rotating the dial counter-clockwise.

•When you want to open the squelch in a permanent condition, set the squelch level at 0.

•When the squelch is open, the scan functions don't operate. When you want to operate the scan functions, adjust the squelch level until no noise can be heard.

5-5 Monitor Function

The monitor function is a function that enforces to open the squelch. When the received signal is weak or when the audio is broken off, it temporarily opens the squelch regardless of the squelch level setting. This function is efficient when the "MONI Key Setting (P.95)" is set as the monitor function.

There are 2 types, PUSH and HOLD, for the monitor functions. By pressing the MONI key, **BUSY** appears on the display and the squelch opens in either case.

•In the PUSH setting, the squelch opens only while the [MONI] key is pressed.
•In the HOLD setting, the squelch stays open by pressing the [MONI] key. By pressing the [MONI] key again, the monitor function becomes released and the squelch level returns back again.
•Please read "Setting the Operation of the MONI Key (P.95)" in the setting mode for learning the steps of switching the PUSH setting to the HOLD setting and vice-versa.

MEMO
•When using the monitor function, the tone squelch and the DCS modulated-carrier canceller also becomes released temporarily.

5-6 Mute Function

This function doesn't allow outputting audio even when a signal is received and the squelch is open. This function is efficient when setting the "MONI Key Setting (P.95)" as the mute function.

The mute function has also 2 types, PUSH and HOLD. By pressing the [MONI] key, **MUTE** appears on the display and the mute function operates in either case.

MEMO
•Either the monitor function or the mute function can be chosen.

5-7 Choosing the Operation Band

The operation band should be chosen from the main band or the sub band.

1.Choose the operation band by pressing the MAIN key or the SUB key.
The frequency of the chosen band is indicated in large characters in dual band displays.
The band chosen alone is indicated in mono band displays.
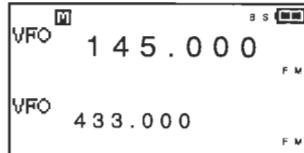
2.By pressing the MAIN key or the SUB key successively, the band moves.
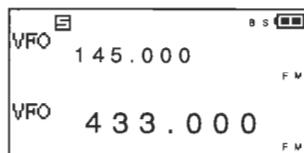
MEMO
·While pressing the MAIN key or the SUB key and rotating the dial (upper), the band moves rapidly.
· M indicates that the main band is the operation band and the 日 indicates that the sub band is the operation band.

5-7-1 Operating with the Mono Band

●To operate the main band as mono band.
1.Press the MAIN key continuously (for approximately one second).
The main band is displayed as mono band. In order to return the main band to dual band, repeat the same step.
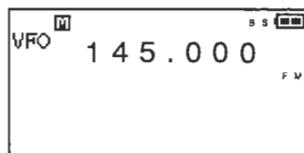
●To operate the sub band in mono band.
1.Press the SUB key continuously (for approximately one second).
The sub band is displayed as mono band. In order to return the sub band to dual band, repeat the same step.
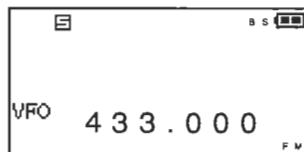
5-7-2 Switch the Frequencies of the Sub Band and the Main Band
When setting both the main band and the sub band to the amateur transmitting and receiving bands, this transceiver allows switching of the frequencies of the sub band and the main band.

1.Press the FUNC key.

2.Press the SUB key.
By following these steps, the frequencies of the sub band and the main band switches.

CAUTION
·When switching the frequency while the modulated-carrier canceller is set at the sub band, the modulated-carrier canceller becomes inefficient temporarily at the main band.

6.Operation Mode

The DJ-G7 has 3 operation modes: the VFO mode, the Preset mode and the Memory mode.

VFO mode	VFO is the abbreviation of Variable Frequency Oscillator. This mode allows choosing the frequency by rotating the dial.
Preset mode	The audio frequencies of AM radios, FM radios and channels ranging from 1 to 62 on TV are preset in the sub band. By the operation frequency limitation function, the preset mode of repeater frequency bands can be added to the main band.
Memory mode	This is an operation mode that calls frequencies registered previously. Please read "Memory Mode (P.37)" to practice memory registration.

CAUTION

•Only analog ground waves can be received in the TV audio channels. TV audio of digital ground waves can't be received.

•Switching the operation mode
Every time the [key] key is pressed, the modes switch in the order shown in the illustration.

MEMO

•The Preset mode can be deleted from the operation modes.
•The repeater operation frequency alone can be added to the main band as the Preset mode. Please read "Operation Frequency Limitation Function (P.89)" and "Preset Mode Setting (P.89) for details.
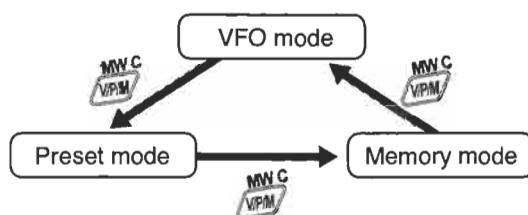
6-1 Operating the Transceiver in the VFO Mode

This is the mode that is first indicated when the transceiver is turned on first after being shipped from the factory. The frequencies can be chosen by rotating the dials.

●**Switching the Bands**
A band can be chosen by pressing the 🔲 key or the 🔲 key.

6-2 Setting the Channel Step Frequencies

Channel steps can be defined to be intervals between frequencies of amateur radio stations and/or radio and TV stations assigned by respective countries. Although this product is programmed to be equipped with standard steps, it allows changing the steps if necessary. Please refer to "Changing the Channel Steps (P.59)" for setting the channel steps.

6-3 Increasing or Decreasing the Frequency in 1MHz Steps

●**Changing the Frequencies of the Main Band**
When greatly changing the frequencies of the main band, rotate the main dial (upper) while pressing the 🔲 key to the VFO mode. The frequencies will increase or decrease in 1MHz steps.

●**Changing the Frequencies of the Sub Band**
When largely changing the frequencies of the sub band, rotate the sub dial (upper) while pressing the 🔲 key to the VFO mode. The frequencies will increase or decrease in 1MHz steps.

MEMO
•Operations of increasing or decreasing the frequencies in 1MHz steps of the sub band increases or decreases regardless of the range of respective bands.
•If the dial isn't rotated while the 🔲 key is pressed, the Key lock operates.

6-4 Directly Inputting the Frequencies

The frequencies can be directly inputted by operating the keypad.
Example 1: When imputing 145.000MHz,
input the 🔲 🔲 and 🔲 keys and press the 🔲 key.
Example 2: When imputing 0.702MHz (sub band),
input the 🔲 , 🔲 , 🔲 and 🔲 keys and press the 🔲 key, and then input thee 🔲 , 🔲 , 🔲 and 🔲 keys and press the 🔲 key.
Example 3: When imputing 1270.680MHz,
Input the 🔲 , 🔲 , 🔲 , 🔲 , 🔲 and 🔲 keys and press the 🔲 key.
When the keys are incorrectly input, press the [PTT] key or the 🔲 key and the input can be redone from the start.

33

6-5 Operating the Transceiver in the Preset Mode

1.When pressing the ⟨VFM⟩ key from the VFO mode, the reception mode will be indicated on the display and the Preset mode will be operated.

```
 ┌─────────────────────────────┐
 │VFO  🗐            B S ▣      │
 │     433.000                 │
 │                        F M  │
 │                             │
 │FM     76.100                │
 │                      W F M  │
 └─────────────────────────────┘
```
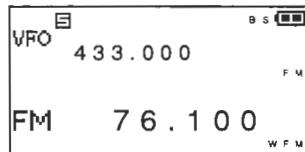
2.Choose the band that you want to listen by pressing the ⟨SUB⟩ key.
Each time the ⟨SUB⟩ key is pressed, the display switches as shown in the illustration on the right.

```
 ┌─ FM radio ──────→ TV ─┐
 │                       │
 └──────── AM radio ←────┘
```
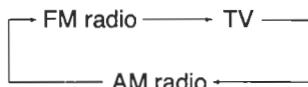
3.Choose the frequency (the channel in case of TV) by rotating the sub dial.

6-6 Reception

1.Tune the frequency in the respective operation modes. When the frequency you want to listen to is received, **BUSY** and the reception level is indicated on the display and you can listen to the received audio. At the same time, the RX light is green.

●The received frequency range is as follows;
The received frequencies on the main band;
    144MHz band : from 136.000 to 169.995MHz
    430MHz band : from 420.000 to 469.995MHz
    1200MHz band : from 1240.000 to 1299.995MHz

The received frequencies on the sub band;
    from 0.531 to 1299.995MHz

6-7 Transmitting

Transmitting can only be done on the main band.

1.Tune the frequency to the chosen operation mode.

2.When the [PTT] key is pressed, the red light is indicated and the transceiver is in the state of transmitting.

3.Speak in a normal volume approximately 5 centimeters away from the built-in microphone on the front of the transceiver while pressing the [PTT] key.

4.After releasing the [PTT] key, transmission will be finished and the transceiver will be in the state of reception.

CAUTION
•When transmitting with the operation frequencies set in V-V, U-U or 1200-1200 bands, [reception stop] will be indicated on the display and reception will stop on the sub band temporarily.
•When the [MONI] key is pressed while the [PTT] key is pressed, Call Tone signal can be transmitted.
•When talking into the microphone, if your voice is too loud or you're talking too near to the microphone, be aware that modulation may be distorted.
•As this transceiver is manufactured to be water-proof, a particular cloth material covers the built-in microphone. For this reason, the receiver may hear voices slightly differently using the built-in microphone than the voice using accessories such as external microphones. This is not due to a malfunction of the product.
•When the [PTT] key is pressed outside the transmission frequency range, [not able to transmit] will be indicated on the display and a beep will be heard. Transmission can not be practiced in this state.
•When transmitting while scanning on the sub band, scanning will stop temporarily. After the transmission is finished, scanning will start again.

MEMO
•The range of frequencies that can be transmitted is as follows;
from 140.000 to 145.995MHz
from 430.000 to 139.995MHz
from 1260.000 to 1299.995MHz

6-8 Tone Call Function

Use the Tone Call function when transmitting a tone signal in transmission, or calling the receiver.

•When pressing the [MONI] key while pressing the [PTT] key, the tone signal is transmitted.
•The default of the tone frequency is 1750Hz and can be changed by the Set mode (P.79)
•When transmitting the tone signal, the CTCSS/DCS tones will halt temporarily.

MEMO
•The Tone Call function allows accessing to the tone burst system amateur repeater used in Europe.

6-9 Repeater Function

Repeaters (automatic relay stations) are installed on the roof of buildings and on the top of mountains to allow communicating with radio stations far apart. Communication with radio stations far apart is possible even with weak transmission output via such repeaters.

By tuning the received frequencies to the repeater frequencies, the Repeater function operates automatically.

```
M          ■T    B S (■■)
VFO   439.000
                    F M
VFO   433.000
                    F M
```
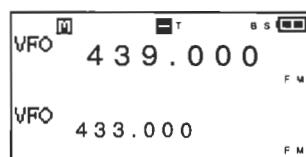
●Repeater Frequency Table

Band	Frequencies	Tone	Shift
430MHz	439.000~439.995	88.5Hz	-5MHz
1200MHz	1290.000~1292.995	88.5Hz	-20MHz

MEMO
•Press the 🔘 key to confirm whether you can receive signals without using the Receiver function. While pressing the 🔘 key, the Repeater function releases temporarily, and the Reverse operation activates. releases temporarily, and the Reverse operation activates.

7.Memory Mode

The Memory mode is a mode used to call frequently used frequencies and settings registered previously.
"Banks" are places where frequencies are categorized and registered so they can be easily called and "channels" are frequencies that are registered.

7-1 The Types of Memories and How to Use Them

DJ-G7 has the following 7 banks.

General Memory Bank	This is a normal bank that recalls frequencies using the Memory mode. 1,000 channels can be registered. When frequencies frequently used are registered, recalling them is easy.
Bank for Program Scan	This bank is used for the Program Scan function that searches signals within a range of restrictive frequencies. 50 couples of frequency ranges (upper point and lower point) can be registered.
Bank for Dual	This bank allows recalling of the main band and the sub band simultaneously. 100 couples can be registered in the dual band.
Bank for Priority	This bank is used for the Priority function (priority reception). Frequencies of 100 channels can be registered.
Bank for Call Channels	The Call channels can be registered in this bank.
Bank for Search Pass Memory	When frequencies that you do not want to stop when scanning are registered, such frequencies will be passed at the time of VFO scan and program scan. Frequencies of 100 channels can be registered. This bank is convenient when you want to register noise signals that can be heard all the time.
Transmitter Detecting Function Bank	This is a special bank that recalls frequencies when using the Transmitter Detecting function. Frequencies of 100 channels can be registered.
Bugging Device Detecting Function Bank	Frequencies frequently used in bugging devices are registered in this bank. You can't register nor delete the memories. Memory Skip can only be changed.

❗ CAUTION
•The same frequencies can't be registered redundantly in the bank for search pass memory. If you try to register, an error beep will be heard.

7-2 Registering the Memory Channels

The steps of registering memories in DJ-G7 are as follows;

1.Set to the frequencies and tone squelches you want to register in VFO mode.

The followings can be registered in the memory channels;
•Frequencies
•Tone frequencies
•DCS codes
•Modulated-carrier frequencies
•Radio wave type (reception mode)
•Tone squelch/reverse tone squelch/DCS/modulated-carrier canceller
•Memory names
•Skip settings
•Shift settings

2.Press the 🔘 key.

3.Rotate the dials and select the banks and channels that you want to register.
When registering with the main band, select the banks and the memory channels with the main dial.
When registering with the sub band, select the banks and the memory channels with the sub dial.
When a memory channel is already registered, MR will be indicated on the display.

•When changing the types of banks, rotate the dial (lower), and when changing the memory channels, rotate the dial (upper).

·Banks

The relationship with the banks and the memories is as follows;

0~9	Banks for normal memories.
PRG	Bank for Program Scan.
DUAL	Bank for dual. The main band and the sub band is coupled and registered in one memory.
PRIO	Bank for priority.
CALL	Bank for Call Channel.
PASS	Bank for Search Pass Memory.
TSF	Bank for Transmitter Detecting function.
BUG	Bank for Bugging Device Detecting function (this bank can't be edited).

Select the banks according to the uses.

·Memory Channels

The memory channels that can be registered according to the types of banks are as follows;

0~9	From 000 to 099
PRG	From 0A to 49B
DUAL	From 000 to 099
PRIO	From 000 to 099
CALL	44MHz band call channel: VHF
	430MHz band call channel: UHF
	1200MHz band call channel: 1.2
PASS	From 000 to 099
TSF	From 000 to 099

4.Register by pressing the ⟨V/PM⟩ key.

The operation mode will return to the former mode after registering.

MEMO

•Overwrite to the memory channels registered in data on the default setting can't be done.

•When deleting or editing the memory channels, cancel or release temporarily the "Write Protect (Memory Protection) Function (P.89)" before performing such actions.

•By downloading our free software from our website (http://www.alinco.co.jp) and using our optional PC connecting cable (ERW-7), spontaneous memory channels (within 1,000 channels) x 50 banks at maximum can be sectioned freely. This operation can't be done with a simple button operation on the transceiver.

CAUTION

•Only when two bands are indicated simultaneously, "Dual Bank" can be selected.

•Banks for Program Scan Channels register two frequencies such as ○○A and ○○ B.

For example: When 145.020MHz is registered on 0A and 146.100MHz is registered on 0B;

When practicing Program Scan, scan in a range of 145.020MHz on 0A and 146.100MHz on 0B.

Example: When registering 145.000MHz from the main band on Bank 1 in the 002 channel.

1.Operate the main band side to the VFO mode and tune to 145.000MHz.

2.Press the key.

3.Rotate the main dial (lower) and set the bank to "1".

4.Rotate the main dial (upper) and set the memory channel to "002".

5.Press the key and the registration is done.

●**Illustration of Memory Registration**

Indicated when registered   Registered frequency

M

MR

B S

Memory channel ——— 0 0 2   1 4 5 . 0 0 0
Number of bank ——— 1   F M
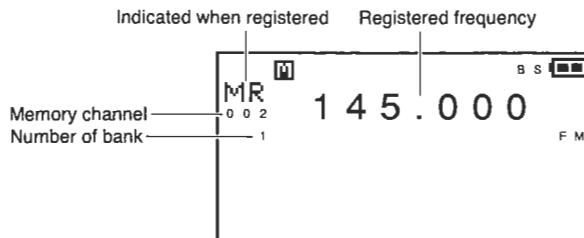
MEMO

- Expanding the memory can't be done.
- The memory channels that are registered can be indicated in alphabets, symbols, numeric, hiragana, katakana and Chinese characters instead of frequencies. Please read "Memory Name Function (P.46)" for details.
- Recalling the memory channels can be done either by dial operations or keypad input.

7-3 Recalling Memory Channels

1. Press the [VPM] key and set the Memory mode.

2. Press either the [MAIN] key or the [SUB] key to select the memory bank that you want to recall.

3. Rotate the dial and select the memory channel.

CAUTION

- When recalling data in the bank for dual, switching between the main band and the sub band can't be done.
- Frequencies outside the range of the main band can't be indicated on the main band with the memory channel registered in the sub band. Please read the range of frequencies of the main band in "Reception (P.34)".

Example: When recalling 145.000MHz registered in 002 channel in bank 1 in the main band.

1. Set the main band to the operation band, and set the Memory mode by pressing the key.
2. Press the key and set it to bank "1".
3. Rotate the dial (upper) and set the channel to "002". The memory channel registered in the memory will be indicated.

7-4 Deleting Memory Channels

1.Set the "Write Protect (Memory Protection) Function (P.91)" to "invalid" or "released temporarily".

2.Press the 🔲 key and set the Memory mode.

3.Select the memory channel that you want to delete.

4.Press the 🔲 key and the **F** is lighted on the display.

5.When the 🔲 key is pressed, an indication for confirmation will be shown as the illustration in the right.

```
 Ⓜ                       B S ▣
MR    145.000
0 0 2
    1                        F M
CLEAR → ENT key
Cancel → Other
```
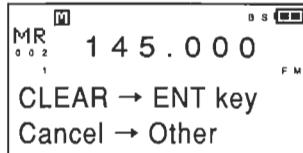
6.When the 🔲 key is pressed, the channel memorized will be deleted. If any other key is pressed, the operation will be cancelled.

CAUTION
- Data once deleted can't be recovered. Please be careful not to delete necessary data by mistake.
- After deleting data, set the "Write Protect (Memory Protection) Function (P.91)" back to valid in order not to delete important data.
- If you practice "All Reset (P.103)", all data will be deleted.

MEMO
- When turning the transceiver on again while the Write Protect is set to "released temporarily", it will automatically be set to "valid".

7-5 Moving the Memory Channels

The memory channels in the registered banks (from 0 to 9) can be moved to other banks (from 0 to 9).

1.Press the 🔲 key and set the Memory mode.

2.Set the memory channel that you want to move it to.

3.Press the 🔲 key.

4.Press the 🔲 key.

5.Rotate the dial and select the bank and the memory channel you want to move it to.
If you select a memory channel that is already registered, MR will be indicated on the display.

6.Press the 🔲 key.
The memory channel moves.

MEMO
- When you overwrite and register the memory channels, set the "Write Protect (Memory Protection) Function (P.91)" to "invalid" or "released temporarily".
- When pressing the [PTT] and the 🔲 keys, moving the memory channels will be cancelled.

7-6 Registering Memories for the Transmitter Detecting Function

1.Set to the frequency that you want to register in the VFO mode.

2.Press the 🔲 key.

3.Rotate the dial (lower) and select the bank for the Transmitter Detecting function.
Select the bank that is indicated "TSF" on the left of the display.
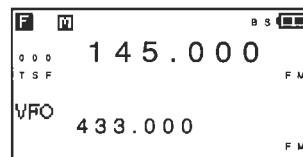
4.Rotate the dial (upper) and select the memory channel.

5.Press the 🔲 key.
The memory will be registered.

```
F  M                    B S ▣
0 0 0    1 4 5 . 0 0 0
T S F                        F M

VFO    4 3 3 . 0 0 0
                             F M
```

43

7-7 Registering the Call Channel

Channels recalled most frequently for asking QSO, repeater frequencies and club channels can be registered in the call channel.

1.Set to the frequencies you want to register to the VFO mode.

2.Press the ⌨FUNC key.

3.Rotate the dial (lower) and set it to the call bank you want to register it into.
Channels will be selected automatically by setting the frequency bands.

4.Press the ⌨VPM key.
Register it in the memory channel, and the mode will return to the former one.

MEMO
- When you overwrite and register the memory channels, set the "Write Protect (Memory Protection) Function (P.91)" to "invalid" or "released temporarily".
- The frequencies that can be registered in the call channel are limited to amateur radio station band frequencies.
- The Call Channel can be edited but can't be deleted.

7-8 Quick Memory

This function is used to quickly recall memory channels most used in the Memory mode. The Quick Memory can be registered from keys from ⌨1 to ⌨9 .

7-8-1 Registering the Quick Memory

1.Press the ⌨VPM key and set the Memory mode.

2.Select the memory channels you want to register in the Quick mode.

3.Press any keys on the keypad from ⌨1 to ⌨9 continuously (for approximately one second).
To release the Quick Memory, practice steps **1.** and **3.** as shown above.

MEMO
- When editing the memory channels registered in the Quick Memory, the edited changes will be reflected in the Quick Memory.

7-8-2 Recalling the Quick Memory

1.Press any key from 7 to 9 on the keypad.

2.Press the V/PM key.

MEMO   •The Quick Memory can be recalled from any operation mode.

7-9 Memory Skip Function

The Memory Skip function is a function that skips memory channels without receiving them while memory scanning. As scanning necessarily stops at broadcastings and memory channels that transmit modulated-carriers, efficient scanning can be practiced when the channels are set in such a way.

1.Press the V/PM key and set to the Memory mode.

2.Select memory channels that you want to skip.

3.Press the CLR key.
M R changes to **SKIP** on the left side of the display, and the Memory Skip function will be set.
Select the object memory channel and practice the steps above to release the Memory Skip function.
M R will change to **SKIP** and the Memory Skip function will be released.

7-10 Memory Name Function

The memory channels that have been registered in the Memory mode can be named using up to 8 characters including numbers, alphabets, hiragana, katakana, Chinese characters and symbols. When call signs and broadcasting stations are named, memory channels will be easy to read.

●**Registering a memory name**

1.Press the [MW C / V/P·M] key and set the Memory mode.

2.Press the [O⁻ₙ / FUNC] key and confirm that the 🄵 Icon is lighted.

3.Press the [MW C / V/P·M] key several times and set the Memory Name mode.
"Editing the memory name" will be indicated on the display.

4.**Input the characters or numbers using the keypad.**
Respective characters or numbers are allotted on the keypad.
Please refer to the "Character and Numbers Allotted on the Keypad (from P.47 to P.49)" for details.

5.**When rotating the dial (lower), the cursor for inputting characters can be moved.**

6.**For deleting characters, you can delete them one by one by pressing the [✶ / CLR] key.**
For deleting all characters, press the [SUB ᴮ] key.

●**Inputting memory names**

Characters and numbers are allotted on the keypad shown in the tables from P.47 to P.49.
By pressing the keys on the keypad, the characters will be indicated in order.
After pressing the keys on the keypad, by rotating the dial (upper) the characters will be indicated in order and by rotating the dial continuously, Chinese characters will be indicated.

Input example: When inputting "DJ-G7!"

1.Press the [ATT / 3·DEF] key and rotate the dial (upper) and set it to "D".

2.Press the [TONE / 5·JKL] key and rotate the dial (upper) and set it to "J".

3.Press the [A / MAIN] key and rotate the dial (upper) and set it to "-".

4.Press the [MODE / 4·GHI] key and rotate the dial (upper) and set it to "G".

5.Press the [STEP / 7·PQ] key and rotate the dial (upper) and set it to "7".

6.Press the [MAIN] key and rotate the dial and set it to "!".

7.The setting will finish by pressing either the [FUNC] key or the [PTT] key.

Registered channel name

```
 M                    B S [===]
D J - G 7 !
1 - 0 0 2
```

Memory channel
Number of bank
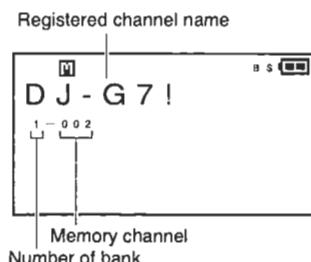
MEMO

•Only when pressing the [MONI] key, the frequency set to the memory name will be indicated.

●**Characters allotted to the keypad.**

WILD 1	1 あいうえお ぁぃぅぇぉ アイウエオ ァィゥェォ
PO 2ABC	2 ABC abc かきくけこ がぎぐげご カキクケコ ガギグゲゴ
ATT 3DEF	3 DEF def さしすせそ ざじずぜぞ サシスセソ ザジズゼゾ
MODE 4GHI	4 GHI ghi たちつてと っ だぢづでど タチツテト ッ ダヂヅデド
TONE 5JKL	5 JKL jkl なにぬねの ナニヌネノ
SCOPE 6MNO	6 MNO mno はひふへほ ばびぶべぼ ぱぴぷぺぽ ハヒフヘホ バビブベボ パピプペポ
STEP 7PQRS	7 PQRS pqrs まみむめも マミムメモ
MIC-G 8TUV	8 TUV tuv やゆよ ゃゅょ ヤユヨ ャュョ
CALL 9WXYZ	9 WXYZ wxyz らりるれろ ラリルレロ
PRIO 0	0 わゎゐゑをん ワヮヰヱヲン ヴヵヶ
MAIN	、。，．・：；？！゛゜´｀¨＾￣＿ヽヾゝ ゞ〃仝々〆〇ー―‐／＼～∥｜…‥''"" （）〔〕［］｛｝〈〉《》「」『』【】＋－ ±×÷＝≠＜＞≦≧∞∴♂♀°′″℃￥＄￠ £％＃＆＊＠§☆★○●◎◇◆□■△▲▽▼ ※〒→←↑↓＝∈∋⊆⊇⊂⊃∪∩∧∨¬⇒⇔ ∀∃∠⊥⌒∂∇≡≒≪≫√∽∝∵∫∬Å‰♯ ♭♪†‡¶○

47

● **Characters allotted to the keypad (Chinese characters).**

WILD 1	あ： い： う： え： お：	愛　圧 井　以　伊　位　移　育　一　茨 宇 英　永　衛　円　媛　園　遠 押　横　岡　屋　音　温
PO 2ABC	か： き： く： け： こ： 	化　火　何　河　歌　画　賀　回　海　開　解　柿　拡　確 学　隔　潟　割　完　感　乾　間　関　菅　岩　強 気　去　喜　基　器　帰　岐　輝　機　久　宮　強　逆　急　救 去　京　区　教　橋　玉　金　禁 九　区　空　熊　群 下　形　型　庫　桁　見　県　言　限　原　現　減　源 小　古　固　降　糊　五　語　護　口　広　甲　行　向　江 香　高　航　降　号　国　刻　黒　根
ATT 3DEF	さ： し： す： せ： そ：	左　佐　災　細　在　西　坂　崎　埼　作　削　索　察　札 沢　澤　三　山 子　士　止　四　市　思　紙　示　字　自　児　時　滋　鹿 式　七　実　手　取　種　秋　松　周　重　終　集　宿　出 受　充　瞬　消　照　除　上　常　城　縄　信　神　森　新 水　世　瀬　数 世　瀬　青　制　盛　静　石　設　川　先　仙　河　船　線 全　前 相　送　総　操　束　則　側　測　続　村
MODE 4GHI	た： ち： つ： て： と： 	他　待　隊　滞　大　太　台　第　滝　脱　単　探　端 知　池　中　沖　庁　町　鳥　長　朝　張　聴 津　通 定　停　鉄　天　転　田　電 戸　都　度　土　灯　当　東　島　湯　盗　同　藤　道　動 栃　特　読
TONE 5JKL	な： に： ぬ： の：	奈　那　内 二　日　認 沼 濃　能
SCOPE 6MNO	は： ひ： ふ： へ： ほ：	波　覇　馬　売　舶　八　発　坂　抜　半　阪　飯 尾　百　表　秒　浜 夫　阜　府　富　福　部　武　幅　復　分　文　聞 兵　並　編 保　方　放　芳　防　北　幌　本

●**Characters allotted to the keypad (Chinese characters).**

STEP `7°`	ま：毎　迄　万 む：無 め：名　明　面 も：木　目
MIC-G `8ᵀᵁⱽ`	や：谷　野 ゆ：右　有　優 よ：葉　陽
CALL `9°`	ら：絡　楽 り：裏　梨　了　良 る：留　類 れ：連 ろ：路　六　録
PRIO `0`	わ：和

MEMO

・When the Memory Name mode is set, the channel name will be indicated in preference in the Memory mode.

7

49

8.Functions Allotted to the Keypad

The functions printed on the top of respective keys are allotted to respective keys on DJ-G7. Press the key and light **F** on the display and press the keys to set the allotted functions.

8-1 Shortcut Function

Spontaneous menus in the set modes can be allotted to the [MONI] key and the key.

1.Light the on the display by pressing the F key.

2.Recall the allotted functions by pressing either the [MONI] key or the key.

3.The operations after following the above steps are practiced according to the operations allotted by the set modes.
Please refer to "Setting the Shortcut Function (P. 97) to register the functions.

8-2 Transmitting Output Setting

Set the level of the transmitting output. When the level of the output is low, the area where the radio waves reach will be limited, though by controlling the electric power consumption, the batteries will be long-lasting.

1.Press the key and light F on the display.

2.By pressing the key, [Transmitting output] will be indicated.
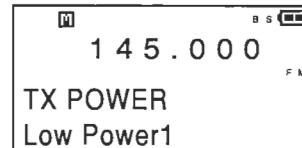
3.Rotate the dial (upper) and select the transmitting output from four levels.
[Transmitting output] will increase in the order of [Low power 1]→[Low power 2]→[Middle power]→[High power]. Two levels, which are [Low power]↔[High power] can be selected in the 1200MHz band.

ᴹ	B S 🔋
145.000	F M
TX POWER	
Low Power1	

8-3 Attenuator Function

This function is used when the received signal is affected by other strong signals. When the attenuator is set, the intensity of the targeted signal will be weak but other signals that affect the signal you target will become weak at the same time. This will allow you to listen to the targeted signal clearly. The attenuation amount is divided in 4 levels and the maximum is 15dB.

1. Press the 🔑FUNC key and **F** will be lighted on the display.

2. When the 3DEF/ATT key is pressed, [Attenuator] will be displayed.

```
 M  A T T          B S 🔋
   1 4 5 . 0 0 0
                    F M
ATT
 3
```

3. Rotate the dial (upper) and turn the attenuator off or select the intensity in a range from 1 to 4.
The attenuation amount can be selected in the order from "1" (low) to "4" (high).

❗ CAUTION • The Attenuator function functions in both the main band and the sub band.
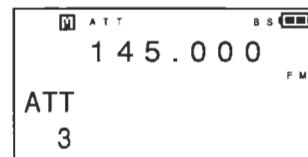
8-4 Radio Wave Type Switching Setting

The radio wave type you want to receive is switched manually.

1. Set to the frequency you want to receive previously.

2. Press the 🔑FUNC key and **F** will be indicated on the display.

3. By pressing the 4GHI/MODE key, [Type of radio waves] will be indicated.

4. Rotate the dial (upper) and switch the types of radio waves. When switching on the sub band, press the 4GHI/MODE key and switch the respective radio waves from [Auto]. By pressing the 4GHI/MODE key again, the types of radio waves will return to [Auto].
The types of radio waves will switch as shown in the illustration.

```
 ┌→AM ←→narrow FM←→FM ←┐
 └─────────────────────┘
```
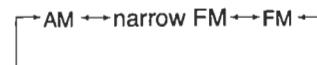
❗ CAUTION • Switching to the AM and WFM modes can't be done in the main band.
  • Switching to the AM, FM and the narrow FM modes can't be done in the sub band. Switching also can't be done vice versa.

8-5 Tone Squelch Function/DCS Function/Modulated-Carrier Canceller Function Settings

There are two ways for awaiting particular stations such as club members and local stations, which are using the Tone Squelch (CTCSS) function and the DCS function.

When you transmit adding previously set tone signals, these functions allow receiving signals by opening the squelch only when the tone signals of your station and the tone signals of another party's station correspond with each other.

When receiving in dual bands, the tone squelch function or the DCS function will only be valid in one band. The modulated-carrier canceller function can be set in the sub band.

CAUTION •The tone squelch function and the DCS function can't be used at the same time.

1.Press the [FUNC] key and [F] will be lighted on the display.

2.Every time the [TONE 5x] key is pressed, the functions switches in the order of tone→ reverse tone squelch→DCS→modulated-carrier canceller→setting release (normal mode).

•The indication of the modulated-carrier canceller will be indicated only on the sub band.

8-5-1 Tone Squelch Function

There are three types of the tone squelch functions;

Tone [T]:
    This function can be set only on encoders. It can be used to access to the repeater function. You can't practice stand-by reception by selecting a particular station.

Tone Squelch [TSQ]:
    By using the encoder/decoder functions, you can practice receive option.

Reverse Tone Squelch [SQ]:
    This is a setting for the decoder function and the squelch closes only when there are tones. It is used to listen to taxi radio.

1.Press the [FUNC] key and light [F] on the display.

2.Press the [TONE 5x] key several times and select "Tone," "Tone Squelch" and "Reverse Tone Squelch".

```
┌──────────────────────────┐
│ M        T      B S ▢    │
│   1 4 5 . 0 0 0          │
│                    F M   │
│ CTCSS ENC.               │
│ 88. 5Hz                  │
└──────────────────────────┘
```
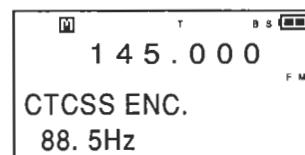
3.Rotate the dial (upper) and select the tone frequencies from the below 39.

(measure: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	

<Synopsis of tone frequencies>

When pressing the [PTT] key or the 🔒FUNC key, the setting will end.
When the frequency corresponds, the [TSQ] indication becomes retroflex.

4.To release the Tone Squelch function, press the 🔒FUNC key and light the F on the display. Press the ⑤TONE key several times, and select [Release setting] and the Tone Squelch function will be released after pressing the 🔒FUNC key.

🛇 CAUTION •Also when using the tone squelch, adjust it appropriately to the normal squelch level. If the squelch is kept open, it will take time to operate the tone squelch.

8-5-2 DCS Function

This is a function that practices receive option in a similar way as the Tone Squelch function. 104 types of DCS codes can be selected.

1.Press the 🔒FUNC key and the F is lit on the display.

2.Press the ⑤TONE key several times and select [DCS].

Ⓜ	D C S	B S 🔋
	1 4 5 . 0 0 0	F M
DCS		
023		
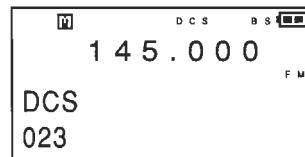
3.Rotate the dial (upper) and select the DCS code.
The DCS codes can be selected from the following 104 types.

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

By pressing the [PTT] key or the key, the setting will be finished.

4.Press the key and light 🅵 on the display to release the DCS setting function. Press the key several times and select [Setting release], and then press the key and the DCS function will be released.

MEMO

- The frequencies that can be set for the DCS function are as follows in both the main band and the sub band;
    From 136.000 to 169.995MHz
    From 420.000 to 469.995MHz
- Please refer to "DCS Type Settings (P.88)" for setting the squelch operation while operating the DCS function.

8-5-3 Modulated-Carrier Canceller Function

This is a function that closes squelch discriminating modulated-carriers heard when there are no audio signals.

1.Set to the frequencies where modulated-carriers can be heard.

2.Press the key and light the 🅵 on the display.

3.Press the key several times and select "Modulated-carrier canceller".
🚆 and JR will be indicated on the right side of the display and numbers from 300 to 3,000 will be indicated as well.

```
TRAIN
300
                    🚆
  352.5375
                   F M
```
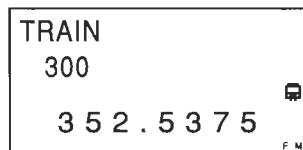
4.Rotate the dial (upper) and adjust it to close the squelch.

5.Press the 🔲 key several times and select the menu indicated [Setting released] on the display and press the 🔲 key to release the Modulated-Carrier Canceller function.
The Modulated-Carrier Canceller function will be released.

> ⊘ •The Modulated-Carrier Canceller function is a function only valid
> **CAUTION** when receiving radio waves. This function will not operate when transmitting.

8-6 Channel Scope Function

The Channel Scope function is a function that indicates the levels of the receiving conditions of channels around the frequency you are receiving that is indicated on the display. It can be used on the VFO/Memory modes and condition of the use of multiple channels can be understood with one look.

Normal times

VFO ᴹ	B S 🔳
1 4 5 . 0 0 0	
BUSY◀▮▮▮▮▮▮▮▮▶	F M
VFO	
4 3 3 . 0 0 0	
BUSY◀▮▮▮▮	F M
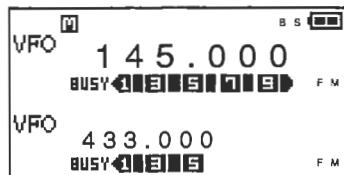
The received signal level of the indicated frequencies is indicated in the lateral direction.

Times when using the Channel Scope function

VFO ᴹ	B S 🔳
1 4 5 . 0 0 0	
▼	
▄▄▄▄▄▄▄▄	F M
VFO	
4 3 3 . 0 0 0	
▄▄▄▄▄▄▄	F M
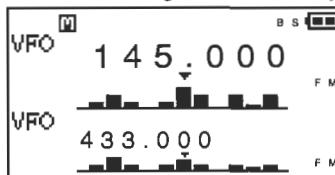
The received signal level of 11 waves is indicated in the longitudinal direction with the center channel (indicated frequency) (▼ is lighted) positioned in the center.

●The Mechanism of the Channel Scope Function

Indicates the scope of the received levels of the neighboring channels. (Audios are not outputted at this time)	→	Set it to the center channel (indicated frequency) and when there is a signal, an audio is outputted.

•If there is no signal at the center channel, the Channel Scope function automatically scans 11 waves and continues to renew the indication of the scope.
•When there is a signal at the center channel, you can receive radio waves according to the setting of the Scan Type (P.92).

8

•When setting the Timer Scan, the Channel Scope function renews the neighboring channels indicated at the timing of the settings while receiving the center channel, and the received audio of the center channel will break up for a moment. When setting the Busy Scan, the indications of the neighboring channels will not change if the center channel is received.

•When setting the Time Assignment Scan, the scope indication will renew in a given time regardless of whether there are signals at the center channel.

●**About Channel Scope Operation When Setting the Tone Squelch and the DCS. (Receiving the center channel in the normal mode)**
When the Tone Squelch or the DCS is set, it stops when there is a signal at the center channel, and if the tone corresponds, received audios can be heard.

●**Types of Channel Scopes**
(1) According to the mode when starting, the types can be divided into the VFO Channel Scope and the Memory Scope.
(2) The dual band and the mono band;
When operating the mono band on the main band side, the received audio will not break up regardless of the settings of the scan.

8-6-1 VFO Channel Scope

This function indicates the received signal level according to the Channel Steps with the center channel in the center.

1.Set to the band indicating the scope in the VFO mode.

2.Press the ⟨FUNC⟩ key and light 🄵 on the display.

3.Press the [SCOPE] key.
The VFO Channel Scope will be indicated.

4.Rotate the dial and select the center channel.
The center channel goes up and down by one channel and by one step. According to this movement, the scope indication drifts on the left or right sides one at a time.

●**How to Look at the VFO Scope Indications**
Example: When the Channel Scope is 20kHz on the main band.

The levels will be shown as seen in a s-meter.

0 1 3 5 7 9

VFO 145.000

144.900MHz ——— 145.100MHz
144.920MHz ——— 145.080MHz
144.940MHz ——— 145.060MHz

144.960MHz | | 145.040MHz
144.980MHz | 145.020MHz

145.000MHz(Center)
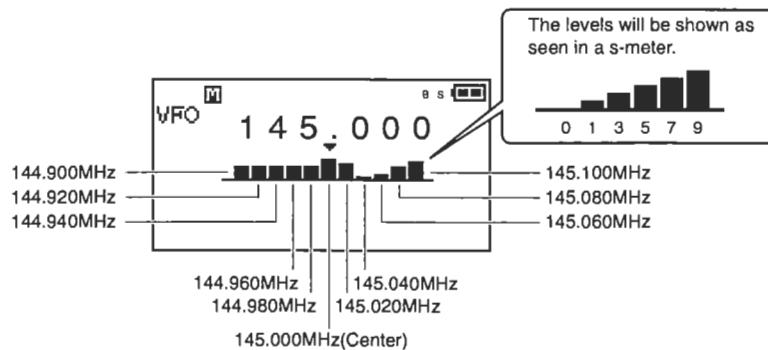
8-6-2 Memory Channel Scope

This function indicates the received levels of the frequencies of the neighboring registered memories with the frequencies of the indicated memories in the center.

CAUTION
•Unoccupied memories are not intended for the Memory Channel Scope function.
•When the scope intended memory has not even one channel, the Memory Channel Scope function will not start.

1.Select the bank that you want to indicate a scope in the memory mode.

2.Press the 〔FUNC〕 key and light 🇫 on the display.

3.Press the SCOPE key.
The Memory Channel Scope function starts. It will indicate the scope of the received levels of the registered memories neighboring the center channel while receiving the indicated memory (the center channel).

4.Rotate the dial and select the center channel
The center channel will go up and down and move to the next scope intended memory.
According to this movement, the scope indication drifts on the left or right sides one at a time.

MEMO

•You can transmit by pressing the [PTT] key even while you are using the Channel Scope. The Channel Scope breaks off temporarily when transmitting. The transmitting output will be indicated in the lateral direction on the scope indication part. When the transmission is finished, the Channel Scope will start again.

•Press the ⬚ key and light **F** , and when pressing the ⬚ key, the receiving operations of the center channel will change as follows;

Normal mode: When receiving at the center channel, audio outputs and the received time will be in accordance with the received time "Scan Type Settings (P.92)". When starting the Channel Scope, the transceiver will return to normal mode every time.

Indication mode: The levels will be indicated for the center channel and other channels as well, and no audio will be output even when a signal is received.

•By pressing the ⬚ or the ⬚ keys, the operation bands will switch. As the operation band moves while operating the Channel Scope, you can use the Channel Scope simultaneously when operating the dual band and operating the main and the sub band.

8

8-7 Changing the Channel Steps

Channel steps can be defined to be intervals between frequencies of amateur radio stations and/or radio and TV stations assigned by respective countries. The default frequencies of the channel steps can be changed. The measures of the channel steps that can change the settings are as follows.

●**Channel steps that can be selected**
Auto * 5kHz, 6.25kHz, 8.33kHz, 10kHz, 12.5kHz, 15kHz, 20kHz, 25kHz, 30kHz, 50kHz, 100kHz, 125kHz, 150kHz, 200kHz, 500kHz and 1MHz
*"Auto" can't be selected on the main band.

●**Switching the sub band**
By pressing the 🔘 key, 13 bands can be selected in order as follows.

Default frequency	Range of frequencies	Reception mode
1.620	(From 0.531 to 1.620)MHz *	AM
51.000	(From 1.625 to 75.995)MHz	AM/FM
76.000	(From 76.000 to 107.750)MHz	WFM
118.000	(From 108.000 to 143.990)MHz	AM/FM
145.000	(From 144.000 to 145.980)MHz	FM
156.000	(From 146.000 to 173.990)MHz	FN
175.750	(From 175.750 to 221.750)MHz	WFM
422.200	(From 221.800 to 429.9875)MHz	AM/FM
433.000	(From 430.000 to 439.980)MHz	FM
445.000	(From 440.000 to 475.7375)MHz	FM
475.750	(From 470.000 to 769.750)MHz	WFM
770.000	(From 770.000 to 1259.950)MHz	FM/WFM
1295.000	(From 1260.000 to 1299.980)MHz	FM

*The channel step can't be changed only on 9kHz.

The default setting of the sub band is "auto". It is not necessary to change the "auto" setting in normal cases though when receiving frequencies that can't be set by "auto", change the channel steps.

1.Set to the band that you want to change the channel step.

2.Press the ⟨🔆FUNC⟩ **key and light** 🅵 **on the display.**

3.When pressing the ⟨7STEP⟩ **key, "Channel step" will be indicated.**
It will be indicated as shown in the illustration on the right.

4.Rotate the dial (upper) and select the channel step. When rotating the sub band, press the ⟨7STEP⟩ **key and select each channel step from "auto".**

In the case of the main band
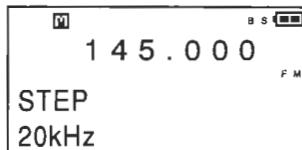
```
 Ⓜ              B S ▭
    1 4 5 . 0 0 0
                      F M
STEP
20kHz
```

In the case of the sub band

```
STEP            B S ▭
AUTO

    4 3 3 . 0 0 0  F M
```
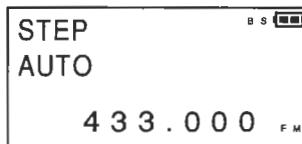
8-8 Microphone Gain Setting

The microphone gain when transmitting can be adjusted in four steps. The microphone gain can be finely adjusted according to the volume of the operator and to the distance from your mouth to the microphone.

1.Press the ⟨🔆FUNC⟩ **key and light** 🅵 **on the display.**

2.When the ⟨8TUVMIC-G⟩ **key is pressed, "Microphone gain" will be indicated.**

3.Adjust the microphone gain by rotating the dial (upper).
The microphone gain can be adjusted from 1 (quiet)↔(loud).

8-9 Recalling the Call Channels

This function allows recalling call channels that have been previously registered. It can be set from any operation mode.

1.Press the ⟨🔆FUNC⟩ **key and light** 🅵 **on the display.**

2.Select a call channel by rotating the dial (upper) while pressing the ⟨9WXYZCALL⟩ **key.**
When releasing the ⟨9WXYZCALL⟩ key, the frequencies move to the call channels.

•Recalling the call channels is only valid on the main band.

8-10 Priority Function

This is a function that allows efficiently receiving channels when awaiting two channels alternately. Every time you receive a channel for five seconds (*1) in the VFO mode, the priority channel is received for 0.5 seconds and you can check whether there is a signal or not. It is convenient to use channels that you frequently listen to as the main channels and channels that you want to check as the priority channels.

The main band and the sub band can be operated independently.

1.Press the 🔘 key and light 🅵 on the display.

2.Select the priority channel while pressing the 🔘 key and rotating the dial (upper).

3.When releasing the 🔘 key, the Priority function operates.
When the priority channel is received, a beep can be heard. Continuously receive until the signal can't be heard.

4.The Priority function will stop by pressing either the [PTT], 🔘 , 🔘 or the 🔘 keys.
•When not even one memory is registered in the priority channel, the Priority function doesn't operate.
•When the Priority function is operating, scanning can't be done.
•As the priority channel is received once in five seconds (*1), the audio breaks up on the main channel in such intervals. This is likely to happen to signals that constantly transmit radio waves such as broadcastings and is not due to malfunction of this transceiver.

*1 The intervals that are difficult to receive on the priority channel side can be changed by the "Priority Awaiting Time Setting (P.93)" in the Set mode.

*2 The time stopped when receiving radio waves on the priority channels side can be changed by the "Priority Stop Time Setting (P.93)" in the Set mode.

8-11 Copying the Memory Channels to the VFO Mode

Copy the frequencies of the memory channels to the VFO mode. When you want to ask QSO by drifting the frequencies slightly from the memory channel, it will be convenient when editing the memory channels.

1.Select the memory channels to the VFO mode in the Memory mode.

2.Press the ⟨FUNC⟩ **key and light** **F** **on the display.**

3.By pressing the ⟨SCAN⟩ **key, the frequencies of the memory channels can be copied to the VFO mode.**
After copying the memory channels, the transceiver will switch to the VFO mode.

8

9.Convenient Functions

9-1 Keylock Function

This function is used to prevent accidentally operating the keys and/or dials when using the transceiver or when taking it along.
There are two ways to lock the keys and dials; the quick lock that allows locking easily and the normal lock that makes releasing the lock difficult.

9-1-1 How to Lock Keys

●**Quick Lock**

Press the 🔘 key continuously, and switch the Keylock function on or off.
When the Keylock function is operated, the 🔲 icon appears on the display.

```
On    M              B S ▣
VFO    1 4 5 . 0 0 0
                          F M
VFO    4 3 3 . 0 0 0
                          F M
```
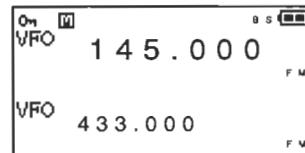
●**Normal Lock**

Press the dial on the left side three times while pressing the 🔘 key to switch the Keylock function on or off.
When the Keylock function is operated, the 🔲 icon appears on the display.

```
On    M              B S ▣
VFO    1 4 5 . 0 0 0
                          F M
VFO    4 3 3 . 0 0 0
                          F M
```
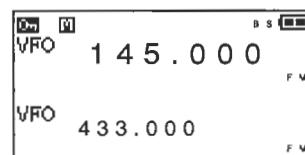
❗ CAUTION
·Follow the same steps to operate the Keylock function to release it. You can't release the Keylock function without following the same steps.
·When not rotating the dial while pressing the 🔘 key continuously for approximately one second, the mono band switches to the dual band and the dual band switches to the mono band.

9-1-2 Operations That Can be Done While Operating the Keylock Function

Adjusting volume: The volume can be adjusted by rotating the dial on the lower side.
Adjusting squelch: Squelch can be adjusted by rotating by pressing and rotating the dial.
Please refer to the settings of the keys that can be done while operating the Keylock function in "Keylock Mode Settings (p.94)".

9

9-2 Scan Function

This is a function that receives radio waves by switching frequencies automatically and searches signals that are transmitted.

VFO-Scan	Scans by the previously set Channel Steps in all frequencies in the band in the VFO mode.
Preset-Scan	Scans all frequencies in the band in the Preset mode.
Memory-Scan	Scans only the frequencies registered in the memory in the Memory mode.
Program-Scan	Sets the range of the highest frequency and lowest frequency to be scanned and scans in that range.

●The common operation while scanning

- When pressing either the [PTT], 🔘, 🔘 or the 🔘 key, the scan stops.
- While rotating the dial when scanning, the direction of the scan can be changed.
- When operating the Monitor function while scanning, scanning temporarily stops during that period. When the Monitor function is released, scanning starts again.
- The starting direction of scanning is decided by the direction scanned last. (However, in the case of Program-Scan, scanning starts from the registered ○ ○A to ○○ B)
- The conditions of scanning again can be set. Please read "Scan Type Settings (P.92)" to learn how to set them.

9-3 VFO-Scan

1.Press the 🔘 key and set the VFO mode.

2.Rotate the dial (upper) while pressing the 🔘 key and select the "VFO Scan".

3.Scanning will start when the 🔘 key is released.
The dots of the indicated frequency will blink when scanning.

4.When either the [PTT], 🔘, 🔘 or the 🔘 key are pressed, scanning will stop.

VFO	▥		B S 🔋
	1 4 5 . 0 0 0		F M
VFO SCAN			
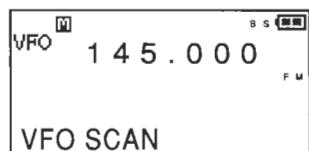
9-4 Preset-Scan

1.Press the [VPM] key and set the Preset mode.

2.Select the band by pressing either the [SUB] or the [MAIN] key.

3.Scanning will start when the [SCAN] key is pressed.
The dots of the indicated frequency will blink when scanning.

目	B S ▭
FM	7 6.4 0 0
	W F M
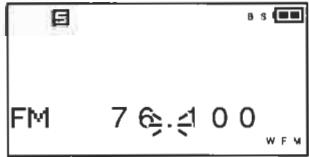
•The Preset mode of Repeater frequencies can be added by "Operation Frequency Limited Function (P.89)" on the main band.

9-5 Memory-Scan

You can scan a particular band or all bands while operating in the Memory mode.
There are three types of Memory-Scans as follows.

Mono bank scan	You can scan only one bank that you've selected
Group scan	You can scan banks combined previously
Full bank scan	All banks from 0 to 9 are targeted to be scanned

MEMO
•Banks besides the ones for normal memory channels can't be scanned.
•When expanding banks by operating the optional software, scanning all banks between 0 and 49 can be scanned.

1.Press the [VPM] key and set the Memory mode.

2.Rotate the dial (upper) while pressing the [SCAN] key, and select the type of scanning.
The types of Memory-Scan are as follows;
•Mono bank scan
•Group scan
•Full bank scan
When the mono bank scan is selected, the bank that is used will be scanned.

MR 002	M B S ▭
	1 4 5 . 0 0 0
	1 F M
Single Bank SCAN	
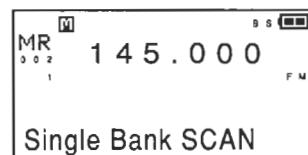
3.When the [SCAN] key is released, scanning will start.

4.When pressing either the [PTT], [FUNC], [VPM] or the [SCAN] key, scanning will stop.

9-6 Program-Scan

This function is used to scan a range when setting the highest frequency and the lowest frequency to be scanned. The highest frequency and the lowest frequency that are set are called program channels. This transceiver allows registering 50 couples of program channels. If you don't register data in the bank for Program-Scan previously, you can't practice the following operations.

1.Press the [MW/C VPM] key and set the VFO mode.

2.Rotate the dial (upper) while pressing the [M→V SCAN] key and select "Program-Scan".

3.When the [M→V D SCAN] key is released, scanning will start.
The dots of the indicated frequency will blink when scanning.

```
┌──────────────────────────┐
│ M                 B S ▣   │
│VFO                        │
│ ↑ A   1 4 5 . 0 0 0       │
│P R G               F M     │
│                           │
│ Prg-SCAN  0               │
└──────────────────────────┘
```

4.When pressing either the [PTT], [FUNC], [MW/C VPM] or the [M→V D SCAN] key, scanning will stop.

9-7 Tone-Scan

This function automatically distinguishes the tone frequencies included in the received radio waves.

1.Set the tone frequency to the channel you want to check in the VFO mode.

2.Rotate the dial (upper) while pressing the [M→V D SCAN] key and select "Tone-Scan".

3.When the [M→V D SCAN] key is released, scanning will start.
Scanning will start and the tone frequencies will be indicated on the display in order. When the tone is detected, a beep will be heard, and TSQ and the tone frequency will be indicated and the scan will stop. If the tone frequencies are not included in the received radio waves, the transceiver will not stop scanning.

```
┌──────────────────────────┐
│ M                 B S ▣   │
│VFO   1 4 5 . 0 0 0        │
│                    F M     │
│                           │
│ TONE SCAN                 │
└──────────────────────────┘
```

```
┌──────────────────────────┐
│ M            ▤ T S Q ▥  B S ▣ │
│ 88.5Hz                    │
│ BUSY               F M     │
└──────────────────────────┘
```

4.When pressing either the [PTT], [FUNC] , [MW/C VPM] or the [M→V D SCAN] key, scanning will stop.

66

9-8 DCS-Scan

This function distinguishes DCS code included in the received radio waves.

1.Set the DCS code to the channel you want to check in the VFO mode.

2.Rotate the dial (upper) while pressing the $\overset{M\rightarrow V\ D}{\underset{SCAN}{}}$ key and select "DCS-Scan".

```
            M                      B S [===]
 VFO    1 4 5 . 0 0 0
                                        F M

 DCS SCAN
```

3.When the $\overset{M\rightarrow V\ D}{\underset{SCAN}{}}$ key is released, scanning will start.
Scanning will start and the DCS codes will be indicated on the display in order. When the DCS code is detected, a beep will be heard, and ▐D C S▌ and the DCS code will be indicated and the scan will stop. If the DCS codes are not included in the received radio waves, the transceiver will not stop scanning.
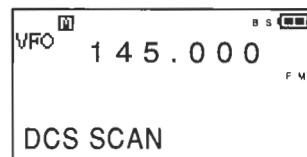
4.When pressing either the [PTT], $\overset{O\pi}{\underset{FUNC}{}}$, $\overset{MW\ C}{\underset{VPM}{}}$ or the $\overset{M\rightarrow V\ D}{\underset{SCAN}{}}$ key, scanning will stop.

9-9 Sweep-Scan

9

Sweep-Scan is a function that indicates the received levels while operating scan during channel scope operation. Even if you move to the next channel, the received level of the previous channel will remain on the display. There are three types of Sweep-Scan, the Band Scan, the Programmed Scan and the Memory Scan, the same as the normal scan function.

1.Press the $\overset{M\rightarrow V\ D}{\underset{SCAN}{}}$ key while operating channel scope.
Sweep-Scan starts. The transceiver sweep scans in every channel step. While the Sweep-Scan function is operating, digital points blink and when the transceiver receives a signal at an indicated frequency, it receives the radio wave according to the condition of the resumed scanning.

2.When pressing the [PTT], $\overset{O\pi}{\underset{FUNC}{}}$, $\overset{MW\ C}{\underset{VPM}{}}$ and the $\overset{M\rightarrow V\ D}{\underset{SCAN}{}}$ keys, the transceiver will return to channel scope.

● **How to look at the level of Sweep-Scan**

Example: Sweep scanning in the up direction (when the channel step is 20kHz)
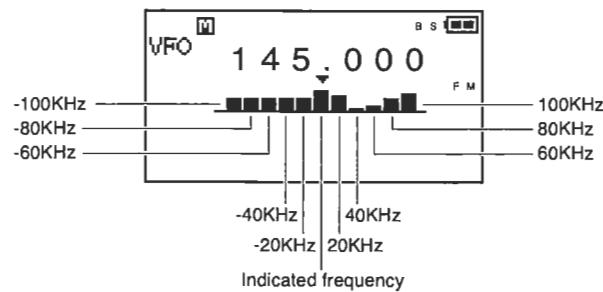
The levels of the frequencies will be indicated from the right side in every one step while sweep scanning, and the levels will move to the left in order. When the levels of the frequencies moves downwards, the levels will be indicated vice versa. While scanning, the ▼ icon will not move.

9-10 Transmitter Detecting Function

This is a function that receives a particular transmitter and presumes relatively the distance to the transmitter by the strength of the signal and detects it. The stronger the signal of the transmitter is, a beep will sound in a shorter interval (the sound heard correlates to the largeness of the S-meter). Use this function for fox hunting.

CAUTION
•This function operates simultaneously with the Memory mode. When using this function, it is necessary to register the memory channel for the Transmitter Detecting function previously in the Memory mode. Please refer to "Registering the Memory Channels (P.38)".

1.Press the [VFO/MW C] key and switch to the Memory mode.

2.When pressing either the [MAIN A] or [SUB B] key and selecting the memory channel for the Transmitter Detecting function, the Transmitter Detecting function operates.
The Transmitter Detecting function will be set (the receive indicator won't light).

When setting this function, the received signals can't be heard.
When this function is set, the detecting sound will automatically start to sound.
However, when the tone squelch and/or the DCS are set, the detecting sound will sound only when the frequencies or the codes correspond.

MEMO
•When the transmitter is at a close distance or when the signal of the transmitter is strong, use this function with the Attenuator function on.
•You can hear the received signal by pressing the [MONI] key (the received indicator will light at this time). When a microphone is attached to the transmitter, you can hear sounds around the transmitter by pressing the [MONI] key.
•Please refer to "Transmitter Detecting Sound Setting (P.88)" when using the dual band.
•The Transmitter Detecting function will operate independently of the normal squelch function.
•When the transceiver is connected to the commercially available directional antenna, it will be easy to presume the direction.

9

10.Set Mode

You can use this transceiver more easily by changing various functions according to uses. You can arrange the following items in the Set mode. The contents of the items are called "menus" and the setting items under the menus are called "sub menus".

Screen display ———— Menu
— Language
— Illumination
— Dimmer —— Sub menu
— Screen contrast
— Font size
— Font Bold

Power & Batt.
— Auto-power-o?
— BS ratio
— Battery type

Sound
— Beep sound Lv.
— Pager
— End-beep

Transmitter
— VOX
— TOT
— TOT penalty
— BCLO
— Tone-burst

Repeater
— Repeater set
— Repeater shift
— Encoding tone

DTMF
— Auto-dialer
— Wait timing
— First-digit time
— Burst/pause

Receiver
— AM antenna
— Clk noise shift
— Tone SQ pri
— DCS operation
— TSF operation
— Receiver range
— Preset mode

Memory
— Bank-link
— Overwrite

Scanning
— Scan mode
— Scan skip
— Pri interval
— Pri duration

Bug detector
— Activate
— Detect mode
— Sensitivity

Key assignment
— Key lock mode
— Moni key mode
— Moni operation
— Moniactive on
— Mainband dial
— Dial ring
— Wild key assign
— Lamp key assign
— Band transition
— Set mode exit

●**How to set the Set mode**

1.**Press the key and light F on the display.**

2.**When pressing the dial, the transceiver is set to Set mode.**

3.Rotate the dial (upper), and select the menu of the set mode.

4.When pressing the dial, the sub menu will be indicated.

```
┌─────────────────────────┐
│ 🅼              B S 🔋  │
│     1 4 5 . 0 0 0        │
│                    F M  │
│   〈SCREEN DISPLAY〉     │
└─────────────────────────┘
```

5.Rotate the dial (upper) and select the sub menu and rotate the dial (lower) and change the setting.

6.By pressing the [MONI] key, the display will return to the menu select indication of the Set mode.

7.By pressing the [PTT] key, the set mode will be fixed and the procedures will be completed.
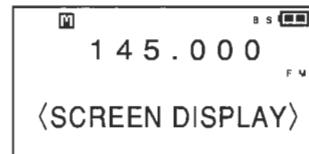
10-1 Screen Display

Display indications and the illumination setting are explained in this article.

1.Select "Screen display" from the menu of the Set mode.

2.By pressing the dial, the sub menu of "Screen display" will appear.

10-1-1 Language
The language indication can be set either to Japanese or to English.

1.Rotate the dial and select "language/日本語"

"language/日本語" will be indicated on the display as shown on the right.

```
┌─────────────────────────┐
│ 🅼              B S 🔋  │
│     1 4 5 . 0 0 0        │
│                    F M  │
│   language／言語        │
│   English               │
└─────────────────────────┘
```

2.Rotate the dial (lower) and select "日本語"↔"English".

10
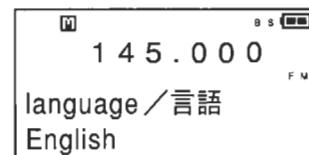
10-1-2 Illumination

The settings of turning the lights of the display and the keys on and off, and time length of the illumination can be set. The default is five seconds.

1.Rotate the dial (upper) and select "Illumination".
"Illumination" and "5 Seconds" will be indicated on the display as shown on the right.

```
 M                     B S ▭
        145.000
                          F M
Illumination
5sec.
```
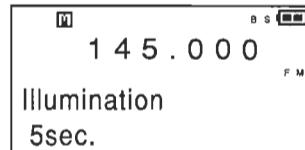
2.Rotate the dial (lower) and select the time length of the illumination.
By rotating the dial, the illumination time will switch as shown in the illustration.

```
┌─Permanent─┬─ All Lights ─┬─ Lights ┬── 5 ──┬── 10 ──┬── 15 ──┬── 20 ──┬── 25 ──┬── 30 ──┐
│    On     │     Off      │   Off   │Seconds│Seconds│Seconds│Seconds│Seconds│Seconds│
└───────────┴──────────────┴─────────┴───────┴───────┴───────┴───────┴───────┴───────┘
```

Always Lit	The illumination will be permanently on.
All Lights Off	The illumination and the TX/RX lamps will be off.
Lights Off	The illumination will be off.
From 5 to 30 Seconds	By operating the dial, the illumination will blink for a certain time.

10-1-3 Dimmer

The brightness of the illumination of the display and the keys can be set in 5 steps. The default is 3.

1.Rotate the dial (upper) and select "Dimmer".
"Dimmer" will be indicated on the display as shown on the right.

```
 M                     B S ▭
        145.000
                          F M
Dimmer
3
```
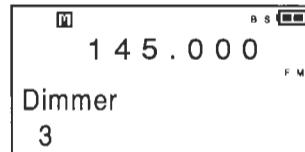
2.Rotate the dial (lower) and select the brightness in a range from 1 to 5.

10-1-4 Screen contrast

The depth of the color of the display can be adjusted. The default is 8.

1.Rotate the dial (upper) and select "Screen contrast".
"Screen contrast" will be indicated on the display as shown on the right.

```
 M                     B S ▭
        145.000
                          F M
Screen contrast
8
```
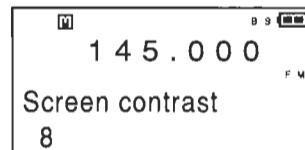
2.Rotate the dial (lower) and select the depth of the color of the display in a range from 1 to 10.

10

10-1-5 Font Size

You can switch the font size of the band that is not operated in dual indication.

1.Rotate the dial (upper) and select "Font size".

"Font size"will be indicated on the display as shown on the right.

2.Rotate the dial (lower) and select "Small"↔"Large".

```
┌────────────────────────────┐
│ M                  R S ▤    │
│        1 4 5 . 0 0 0        │
│                       F M   │
│ Font size                   │
│ Small                       │
└────────────────────────────┘
```
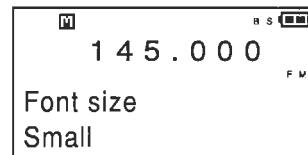
10-1-6 Font Bold

You can change the fonts of numbers if necessary.

1.Rotate the upper dial and select "Font bold".

2.Rotate the lower dial and select the font boldness of numbers.

When rotating the dial, the fonts change as shown in the illustration.

```
  ┌→ Boldface ↔    Boldface on      ↔    Lean type on    ↔ Lean type ┐
  │              the operated band     the operated band              │
  └─────────────────────────────────────────────────────────────────┘
```
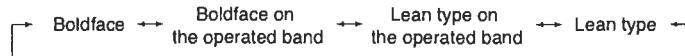
Boldface	All numbers will be indicated in boldface.
Boldface on the operated band	The numbers will be indicated in boldface on the operated band and the numbers will be indicated in lean type on the non-operated band.
Lean type on the operated band	The numbers will be indicated in lean type on the operated band and the numbers will be indicated in boldface on the non-operated band.
Lean type	All numbers will be indicated in lean type.

10-2 Power & Batt.

Power supply settings are explained in this article.

1.Select "Power & Batt" from the menu of the Set mode.

2.By pressing the dial, the sub menu of "Power & Batt" will appear.

10

10-2-1 Auto-Power-Off

A beep will sound when a certain period of time is set or if a non-operated condition continues and the power supply will automatically turn off.

1.Rotate the dial (upper) and select "Auto-power-off".
"Auto-power-off" will be indicated on the display as shown on the right.

```
⏱Ⓜ                    B S 🔋
      1 4 5 . 0 0 0
                       F M
Auto-power-off
30 min
```
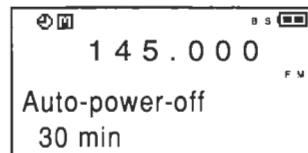
2.Rotate the dial (lower) and select the time when the power supply turns off.
When rotating the dial, the Auto-power-off switches as shown in the illustration.

```
┌─► Released ◄─► 30 minutes ◄─► 1 hour ◄─► 2 hours ◄─► 3 hours ◄─► 5 hours ◄─► 8 hours ◄┐
└────────────────────────────────────────────────────────────────────────────────────┘
```
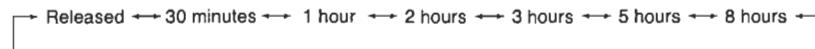
To turn on the power supply again when the power supply turns off, press the power switch again.

MEMO •The APO (auto-power-off) time will not be extended only when receiving signals, but when practicing key operations, the count will be reset and the timer will operate again.

10-2-2 BS ratio

This function controls the power consumption and ensures optimal freshness of the batteries by turning the transceiver internal power on or off for a short interval.

1.Rotate the dial (upper) and select "BS ratio".
"BS ratio" will be indicated on the display as shown on the right.

```
Ⓜ                     B S 🔋
      1 4 5 . 0 0 0
                       F M
BS ratio
0. 2 : 0. 8
```
ON時間　バッテリーセーブ時間
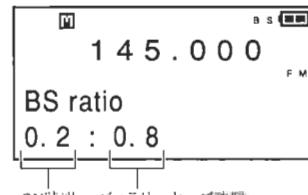
2.Rotate the dial (lower) and select the time the transceiver is on and the time for battery saving.
When the BS ratio is on, **BS** will blink on the display. By rotating the dial, the BS ratio will switch as shown in the illustration.

```
┌──► OFF ◄────────────► 0.2 seconds: 0.2 seconds ◄──────────► 0.2 seconds: 0.4 seconds ◄─┐
└──► 0.2 seconds: 1.8 seconds ◄──────► 0.2 seconds: 1.2 seconds ◄──────► 0.2 seconds: 0.8 seconds (default) ◄──┘
```
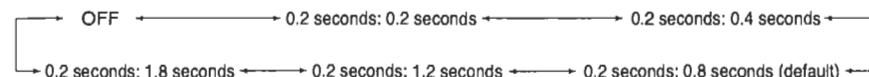
•When shipped from the factory, the BS ratio is set to 0.2 seconds: 0.8 seconds. It is not necessary to turn this function off in normal situations, but turn the BS ratio off when receiving packet telecommunication of amateur ham radio or data communication such as ACARS in aeronautical radio.
•The BS ratio doesn't operate while receiving signals or when scanning.
•If you set the period of the battery save time to be long, the beginning of the audio may break up when receiving signals.

10-2-3 Battery Type
This setting is practiced to indicate a proper battery-level icon.

1.Rotate the dial (upper) and select "Battery type".
"Battery type" will be indicated on the display as shown on the right.

```
 M                    B S ▨
      1 4 5 . 0 0 0
                              F M
Battery type
Battery pack
```
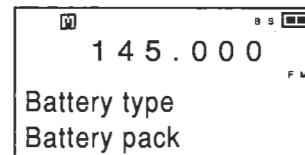
2.Rotate the dial (lower) and select "Battery Pack"↔"Dry Cells".

CAUTION •If this setting is mistaken, the battery-level (the remaining amount) will not be properly indicated though this will not be a problem for practical use.

10-3 Sound

Settings concerning sounds are explained in this article.

1.Select "Sound" from the menu of the Set mode.

**2.By pressing the dial, the sub menu of "Sound" will appear.**

10-3-1 Beep Sound LV.
The sound heard when operating keys is called a "beep". Setting the volume of the beep is explained in this article. The default is 2.

1.Rotate the dial (upper) and select "Beep sound lv".
"Beep sound lv" will be indicated on the display as shown on the right.

```
 M                    B S ▨
      1 4 5 . 0 0 0
                              F M
Beep sound Lv.
2
```
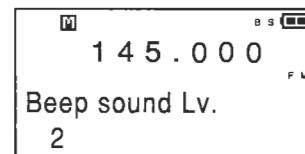
2.Rotate the dial (lower) and select the volume in a range from "OFF" to from "1" to "4".
When "OFF" is selected, the beep will not sound.

! •When the beep is set off, the alarm of the Bell function and the end-
CAUTION beep will not sound.

10-3-2 Pager
This function informs you with a sound of a bell when a signal is received.

1.Rotate the dial (upper) and select "Pager".
"Pager" will be indicated on the display as
shown on the right.

```
[M]                    B S [===]
     1 4 5 . 0 0 0
                          F M
Pager
OFF
```
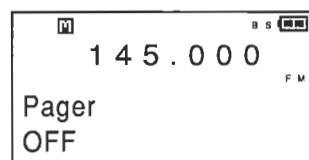
2.Rotate the dial (lower) and select from either the "invalid", "when received on the main band", "when received on the sub band" or "when received on either bands".
When the pager is set, ♪ blinks on the display.
When the transceiver receives a signal, ♪ blinks and a bell sounds. ♪ blinks until the next operation is practiced. Therefore, this function can be used as "incoming confirmation" which informs you that you received a signal in absentia.

Invalid	The bell will not sound.
When received on the main band	The bell will sound when a signal is received on the main band.
When received on the sub band	The bell will sound when a signal is received on the sub band.
When received on either bands	The bell will sound when a signal is received on either band.

10-3-3 End-Beep
This function informs you of the end of transmission in an easy-to-understand manner by sounding a short beep that can be heard a "peep" after transmitting.

1.Rotate the dial (upper) and select "End-beep".
"End-beep" will be indicated on the display as
shown on the right.

```
[M]                    B S [===]
     1 4 5 . 0 0 0
                          F M
End-beep
OFF
```
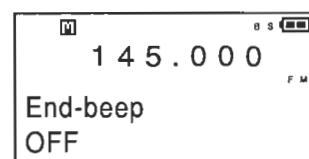
2.Rotate the dial (lower) and select from "OFF"↔"ON".

10-4 Transmitter

The operation settings concerning transmission of this transceiver are explained in this article.

1.Select "Transmitter" from the menu in the Set mode.

2.By pressing the dial, the sub menu of "Transmitter" will appear.

10-4-1 VOX

This function switches from transmission when your voice enters the microphone to reception when no voice enters the microphone and allows communication with your hands free.

1.Rotate the dial (upper) and select "VOX".
"VOX" will be indicated on the display as shown on the right.

⊞		B S ▣▣
	1 4 5 . 0 0 0	
		F M
VOX		
OFF		
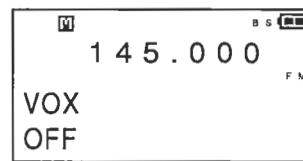
2.Rotate the dial (lower) and select the options of the VOX.

┌─→ OFF ←→ Built-in microphone ←→ External microphone ←┐

●Setting the VOX sensitivity
Adjust the VOX sensitivity level. The default is 3.

1.Press the dial two times when the VOX function is operated.
The sensitivity of the "VOX Setting" will be indicated on the display as shown on the right.

⊞	v	B S ▣▣
	1 4 5 . 0 0 0	
		F M
VOX LEVEL		
3		
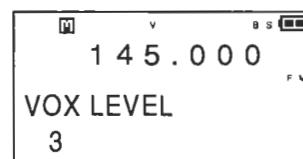
2.Rotate the dial (upper) and adjust the volume of your voice when transmitting.
The VOX sensitivity can be set from 1 (low) to 7 (high). When the VOX sensitivity is set to 0, the VOX function can be stopped.

10

CAUTION
- When the sensitivity is raised too high, there may be cases when small voices and/or sounds nearby are transmitted.
- When the VOX is set, you can't transmit even by pressing the [PTT] key.
- Even if you adjust the sensitivity, there may be cases when the transceiver transmits when sounds nearby are loud.
- When the VOX is set, you can't transmit tone calls, DTMF and/or auto-dialers.
- Reception in the sub band will stop while operating the VOX function.

10-4-2 TOT

This function automatically stops transmission when transmission is continued longer than a certain period of time.

●TOT Setting
1. **Rotate the dial (upper) and select "TOT."**
"TOT" will be indicated on the display as shown on the right.

```
M                    B S (■■)
        1 4 5 . 0 0 0
                         F M
TOT
OFF
```
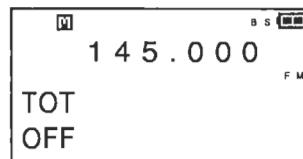
2. **Rotate the dial (lower) and select the TOT in every 30 seconds in a range of "invalid"↔from "30 seconds" to "450 seconds".**
When the dial is rotated, TOT will switch as shown in the illustration.

```
┌→ Invalid ←→ 30 ←→ 60 ←→ 90 ←→ ····· ←→ 450 ←┐   (measure: seconds)
└──────────────────────────────────────────────┘
```

MEMO
- Immediately before the time exceeds the set continuous transmission time, a beep will be sound and the transceiver will be in a state of reception. At this time, you can't transmit again if not pressing the [PTT] key.
- When the TOT penalty time is set, you can't transmit by pressing the [PTT] key within the time set. Please refer to "TOT Penalty (P. 79)" for setting the TOT penalty time.

10

10-4-3 TOT Penalty

This function sets the TOT penalty time that forbids transmission for a certain period of time after transmission is stopped forcibly by the TOT. The default is invalid.

1.Rotate the dial (upper) and select "TOT penalty".
"TOT penalty" will be indicated on the display as shown on the right.

```
┌─────────────────────────┐
│ ⊠                 B S ▣  │
│       1 4 5 . 0 0 0      │
│                      F M │
│ TOT penalty             │
│ OFF                     │
└─────────────────────────┘
```

2.Rotate the dial (lower) and select the time of TOT penalty in a range of "invalid"↔ from "1 second" to "15 seconds".
Transmission is prohibited during the time of TOT penalty.
When pressing the [PTT] key during the time of TOT penalty, a beep will sound. This function stops transmission within the time of the set TOT penalty after the transmission automatically stops when TOT is set.

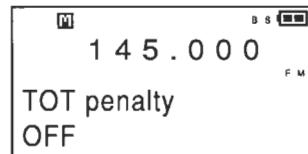### 10-4-4 BCLO

This function is used only on the main band that restricts transmission operation. It prevents from interfering with other station's QSO when transmitting from your station.

1.Rotate the dial (upper) and select "BCLO".
"BCLO" will be indicated on the display as shown on the right.

```
┌─────────────────────────┐
│ ⊠                 B S ▣  │
│       1 4 5 . 0 0 0      │
│                      F M │
│ BCLO                    │
│ OFF                     │
└─────────────────────────┘
```
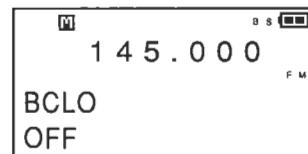
2.Rotate the dial and select "on"↔"off".
When the Busy Channel Lockout function is on, transmission will be allowed only in the following cases (1), (2) and (3), and you can't transmit under any conditions besides these cases.
(1)When a signal is not ? (In the condition that **BUSY** is switched off.)
(2)When the tone corresponds and the squelch is open in the state of the tone squelch is set.
(3)When the code corresponds and the squelch is open in the state of the DCS is set.

10-4-5 Tone-Burst

1.Rotate the dial (upper) and select "Tone-burst".
"Tone-burst" will be indicated on the display as shown on the right.

```
┌─────────────────────────┐
│ ⊠                 B S ▣  │
│       1 4 5 . 0 0 0      │
│                      F M │
│ Tone-burst              │
│ CALL                    │
└─────────────────────────┘
```

10
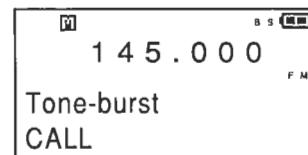
2.Rotate the dial (lower) and select the tone frequency.
By rotating the dial, the tone frequencies switches as shown in the illustration.

Invalid ←→ CALL ←→ 1000 ←→ 1450 ←→ 1750 ←→ 2100 (measure: Hz)

10-5 Repeater

The repeater access settings are explained in this article.

1.Select "Repeater" from the menu of the Set mode.

2.By pressing the dial, the sub menu of "Repeater" will appear.

●Shift direction and offset frequencies
The repeater normally retransmits a signal received in a certain frequency to another frequency. The difference between these two frequencies is called the offset frequency.
The set range of the offset frequencies is from 0 to 999.995MHz.
When pressing the [PTT] key, drifting the received frequency to the transmitting frequency from up to down is called shift and such a direction is called the shift direction.

10-5-1 Repeater Set

You can set whether the repeater access setting automatically operates or not.
There are two modes in this transceiver;
•Auto repeater: When the repeater ? the operated frequency, the transceiver demands necessary settings to automatically access.
•Quick repeater: You can operate easily the previous settings regardless of the frequency bands.

1.Rotate the dial (upper) and select "Repeater".
"Repeater" will be indicated on the display as shown on the right.

```
 M                    B S ▆
        4 3 9 . 0 0 0
                           F M
Repeater set
Auto
```
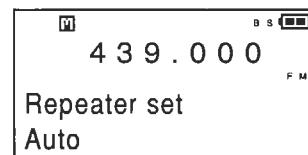
2.Rotate the dial (lower) and select "Auto repeater"↔"Quick repeater".

❗
CAUTION
•In the case of operating when releasing the Auto repeater settings, please be aware of the band plan so you don't practice simplex operation on the repeater band.

80

●**Operation when setting the Quick repeater**
1.**Select the operation frequency.**

2.**Press the** 🔘 **key and light** 🄵 **on the display.**

3.**Press the** (ENT) **key.**
The Quick repeater operates.
When pressing the (ENT) key while operating the Quick repeater, the transceiver will reverse operation.
By repeating the above 1. and 2., you can release the Quick repeater settings.

> **MEMO**
> •The shift direction and the shift width will operate in the setting value of the "Repeater Shift" written in the next subhead.
> •Please read "Encoding tone (P.82)" for setting the tone frequencies of the Quick repeater.

10-5-2 Repeater Shift

When setting the Quick repeater, setting the shift direction and the frequencies are necessary. The default is "-5,000".

1.**Rotate the dial (upper) and select "Repeater shif".**
"Repeater shift" will be indicated on the display as shown on the right.

```
┌─────────────────────┐
│ Ⓜ          B S ▭ │
│    4 3 9 . 0 0 0     │
│                 F M │
│ Repeater shift      │
│  -5. 000            │
└─────────────────────┘
```
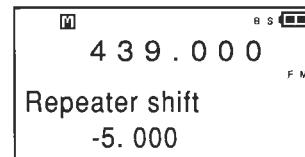
2.**Rotate the dial (lower) and select the shift direction.**
When rotating the dial, the Repeater shift will switch as shown in the illustration.

```
┌─ -5.000 ◀──▶ OFF ◀──▶ +5.000 ◀─┐
└─────────────────────────────────┘
```

3.**Rotate the sub dial (lower) and select the offset frequency.**
When rotating the dial, the transceiver increases or decreases in every one channel step.
While pressing the 🔘 key and rotating the dial, the transceiver will increase or decrease in every 1MHz.

```
┌─────────────────────┐
│ Ⓜ          B S ▭ │
│    4 3 9 . 5 0 0     │
│                 F M │
│ Repeater shift      │
│  -5. 020            │
└─────────────────────┘
```

10
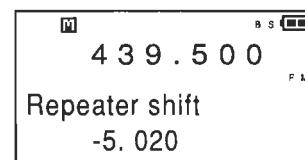
MEMO
•In the basic band plans of the Japanese amateur repeaters 5MHz offset of the minus shift in the 430MHz band. In the 1,200MHz band it is 20MHz offset of the minus shift.
•If the offset frequency is set to a value that exceeds the transmission frequency range of this transceiver, when pressing the [PTT] key "Cannot transmit" will be indicated on the display and an alarm will sound. You can't transmit in this state.

10-5-3 Encoding Tone

This function is used to set the tone frequencies that are used for the Quick repeater.

1.Rotate the dial (upper) and select "Encoding tone".
"Encoding tone" will be indicated on the display as shown on the right.

2.Rotate the dial (lower) and select the tone frequency.
Either tone frequencies that can be checked on the "Synopsis of tone frequencies (P.53)" or no tone frequencies can be selected.

10-6 DTMF

Setting concerning transmission of the DTMF tone (the same sounds that can be heard from push-buttons on an ordinary telephone) are explained in this article. This function is used in accessing indirect communication via the internet.

1.Select "Encoding tone" from the menu of the Set mode.

2.By pressing the dial, the sub menu of "Encoding tone" will appear.

10-6-1 Auto-Dialer

This article explains how to register, transmit and redial DTMF codes in the memories.
Up to 16 characters can be input in one ? in one DTMF code and 9 codes can be registered.

●**Setting the memory of the auto-dialer**
1.Rotate the dial (upper) and select "DTFM".
"DTMF" will be indicated on the display as shown on the right.

```
┌─────────────────────────┐
│ Ⓜ              B S 🔋   │
│                          │
│      1 4 5 . 0 0 0       │
│                    F M   │
│   Auto-dialer  1         │
│                          │
│  ─                       │
└─────────────────────────┘
```
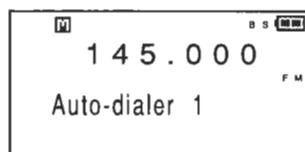
2.Rotate the sub dial (lower) and select the numbers of the dialer memory from 1 to 9.

3.Press the keypad and input the DTMF code.
When you input the numbers, they will be indicated on the display as follows;
The numbers will be indicated as [1]→
[12]→[123]→[1234]→[12345]→
[123456]. Up to 16 numbers can be input.

```
┌──────────────────────────┐
│  Ⓜ                B S ▭  │
│        1 4 5 . 0 0 0      │
│                      F M  │
│   Auto-dialer 1          │
│   123456789_             │
└──────────────────────────┘
```

You can set the transceiver to pause instead of setting tones by pressing the 🔑 key while inputting the code and then press the **F** key while 🔘 is blinking.
When the transceiver is in the pause position, "-" will be indicated on the display.
When the transceiver is set in the pause position, it will be in the state of no signal for approximately one second which corresponds to the pause position.
Press the 🔑 key and press the **F** key while 🔘 is blinking in order to delete all of the DTMF codes input.

4.The input code will be automatically recorded. The transceiver will return to the Operation mode by pressing the [PTT] key.

●The output of the auto dialer.
The DTMF code will be sound from the speaker, but radio waves will not be transmitted.

1.Repeat the previously described steps in the Set mode and select the code you want to sound.

2.Press the 🔑 key after pressing the 🔘 key.
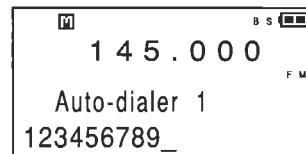
3.The DTMF code that is indicated on the display will be output from the speaker.
If the DTMF code is not memorized, it will not be output from the speaker.

●Transmission of the auto dialer
1.Press the [PTT] key and set the transceiver in the state for transmission.

2.Press the 🔑 key and "D" will blink on the display.

3.By pressing any key from 🔘 to 🔘 , the DTMF code registered in the number of the key will be automatically transmitted.
When a key that has no DTMF code registered is pressed, no DTMF code will not transmitted.

10

●**Redial function**
1.Press the [PTT] key, and set the transceiver in the state of transmission.

2.Press the $\overset{\text{O-n}}{\boxed{FUNC}}$ key.
will be indicated on the top of the display.

3.Press the $\overset{\text{PRIO}}{\boxed{0}}$ key.
The last DTMF code sequence (the DTMF code transmitted manually) that is output will be transmitted automatically. Sounds automatically generated from the speaker are heard at this time.

CAUTION
•In case a dial output has not been practiced once after shipping or after resetting, the redial function will not operate.

MEMO
•The timing relative to the DTMF functions that are set from "10-6-2" to "10-6-4" are shown as follows;

Start of transmission   The first number of   The second number of   The third number of
                         the DTMF code   the DTMF code   the DTMF code

WAIT TIME   The burst period for   Pause period   Burst period   Pause period   Burst period
            the first number
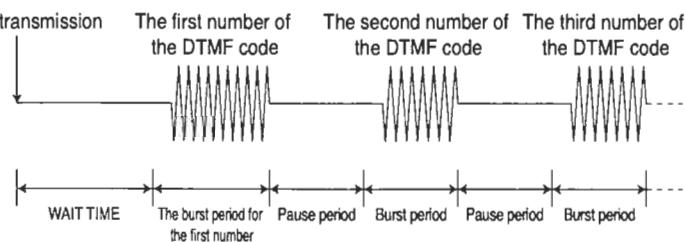
10-6-2 DTMF WAIT Time

When outputting the DTMF code by the auto dialer, the code will output after the WAIT time set. The default is 100 milliseconds.

1.Rotate the dial (upper) and select the "DTMF WAIT time".
"DTMF WAIT time" will be indicated on the display as shown on the right.

145.000
Wait timing
100ms.
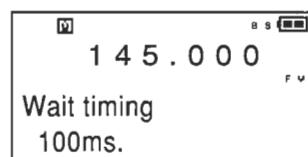
2.Rotate the dial (lower) and select the DTMF WAIT time every 100 millisecond in a range of from 100 to 1,000 milliseconds.
When rotating the dial, the DTMF WAIT time will switch as follows;

100 ←→ 200 ←→ 300 ←→ ····· ←→ 1000 (measure: milliseconds)
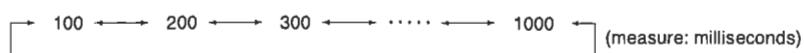
10-6-3 DTMF the Burst Period for the First Number

When the DTMF code is output by the auto dialer, the code output will start from the burst period for the first number set.

1.Rotate the dial (upper) and select "Burst for the first number".
"Burst for the first number" will switch as follows;

```
┌──────────────────────────────┐
│ ▥                      B S ▦ │
│        1 4 5 . 0 0 0         │
│                        F M   │
│  First-digit time            │
│    60ms.                     │
└──────────────────────────────┘
```
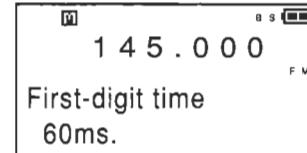
2.Rotate the dial (lower) and select the burst period for the first number of DTMF.
When rotating the dial, the burst period will switch as follows.

```
┌─ 60 ←──→ 80 ←──→ 100 ←──→ ····· ←──→ 200 ─┐
└───────────────────────────────────────────┘  (measure: milliseconds)
```
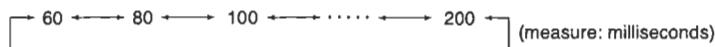
10-6-4 DTMF Burst/Pause Period

When outputting the DTMF code by the auto dialer, the DTMF code will be output by the burst/pause period set. The default is 60 milliseconds (60 milliseconds for the burst time and 60 milliseconds for the pause time).

1.Rotate the dial (upper) and select "DTMF burst/pause".
"DTMF burst/pause" will be indicated on the display as shown on the right.

```
┌──────────────────────────────┐
│ ▥                      B S ▦ │
│        1 4 5 . 0 0 0         │
│                        F M   │
│  Burst/pause                 │
│    60ms.                     │
└──────────────────────────────┘
```

10
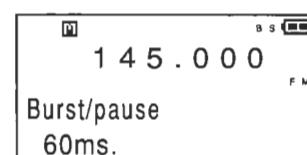
2.Rotate the dial (lower) and select the DTMF burst/pause period every 20 milliseconds in a range from 60 to 200 milliseconds.

```
┌─ 60 ←──→ 80 ←──→ 100 ←──→ ····· ←──→ 200 ─┐
└───────────────────────────────────────────┘  (measure: milliseconds)
```

10-7 Reception Settings

How to receive radio waves easily is explained in this article.

1.Select "Reception Settings" from the menu of the Set mode.

2.By pressing the dial, the sub menu of the reception settings will appear.

10-7-1 AM Antenna Settings

When you want to receive an AM radio wave band, switch between the external antenna to the built-in AM antenna.

1.Rotate the dial (upper) and select "AM antenna".

"AM antenna" is indicated on the display as shown on the right.

```
┌──────────────────────────┐
│ M                 B S ▭  │
│       1 4 5 . 0 0 0       │
│                     F M  │
│ AM antenna               │
│ Bar antenna              │
└──────────────────────────┘
```
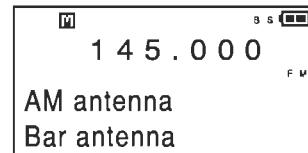
2.Rotate the dial (lower) and select between "ON"↔"OFF".

The default of the reception antenna of the AM bands uses the built-in AM antenna.When you use an external antenna, connect the antenna to an antenna connector (SMA).

> ❗
> **CAUTION**
> •The built-in AM antenna doesn't correspond to shortwave broadcasting. When listening to shortwave broadcasting, connect the antenna to an external antenna.

10-7-2 Clock Noise Shift Settings

In case a faint noise is always heard in a particular frequency, there is a possibility that it is due to clock noise. Clock noise can not be eliminated due to the circuits of this transceiver, but this transceiver allows easy reception of such frequencies by moving the noise to another frequency.

1.Rotate the dial (upper) and select "Clk noise shift".
"Clk noise shift" will be indicated on the display as shown on the right.

```
┌──────────────────────────┐
│ M                   B S ▭ │
│      1 4 5 . 0 0 0        │
│                       F M │
│ Clk noise shift          │
│ OFF                      │
└──────────────────────────┘
```
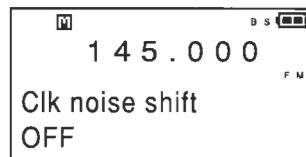
2.Rotate the dial (lower) and select between "ON"↔"OFF".

MEMO ·This function is different from the noise blanker function. Please be aware that not all noises are due to clock noise, and therefore using the clock noise shift function may have no effect.

10-7-3 Tone SQ Priority Settings

When receiving on the dual bands, tone squelch (TSQ) and DCS settings will be valid on only one band.

1.Rotate the dial (upper) and select "Tone SQ pri".
"Tone SQ pri" will be indicated on the display as shown on the right.

```
┌──────────────────────────┐
│ M                   B S ▭ │
│      1 4 5 . 0 0 0        │
│                       F M │
│ Tone SQ pri.             │
│ Active band              │
└──────────────────────────┘
```
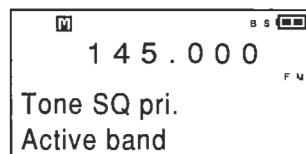
2.Rotate the dial (lower) and select the priority.
By rotating the dial, the priority will switch as shown in the illustration.

┌─► Operated band pri ◄──► Main band pri ◄──► Sub band pri ◄─┐
└───┘

Operated band pri	The transceiver will give priority to the tone and DCS of the band that is operated.
Main band pri	The transceiver will give priority to the tone and DCS of the main band. (It will give priority to the band that is indicated on the top of the display)
Sub band pri	The transceiver will give priority to the tone and DCS of the sub band. (It will give priority to the band that is indicated on the bottom of the display)

10

10-7-4 DCS Operation Settings

There are cases when the squelch closes due to the modulation of the transceiver such as the DCS settings and/or the conditions of receiving. In that case, you can change the DCS type setting from normal to keep. This operation allows opening the squelch by the DCS code and closes the squelch by the noise squelch.

1.Rotate the dial (upper) and select "DCS operation".

2.Rotate the dial (lower) and select between "normal"↔"keep".

> **CAUTION**
>
> •IIn the case that the squelch opens by acknowledging a different DCS code by setting the transceiver in the keep position, the squelch will not close until there are no QSOs.

10-7-5 TSF Operation Settings

When receiving a radio wave on the other band while detecting transmitters on the dual bands, you can set whether you want to suspend the transmitter detecting sound temporarily or not.

1.Rotate the dial (upper) and select "TSF operation".
"TSF operation" will be indicated on the display as shown on the right.

N   B S 📶
1 4 5 . 0 0 0   F M
DCS operation
Normal
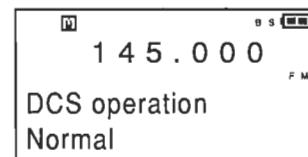
2.Rotate the dial (lower) and select between "Full-time"↔"Suspended temporarily".
If the transceiver is set in the "suspended temporarily" position, the transmitter detecting sound will break off when you receive radio waves from the band that is operating transmitter detection.

10-7-6 Receiver Range Function

This mode is to be limitedly operated on the amateur bands of both the main band and the sub band in the VFO mode of this transceiver. The mode is not limited to the Memory mode and the Preset mode.

1.Rotate the dial (upper) and select the "Receiver range".

2.Rotate the dial (lower) and select the range of the operation frequencies.

All frequencies	All of the frequencies that can be operated on this transceiver will be indicated on the display
Limited to amateur bands	The amateur band frequencies will be indicated on the display.

When set to "Limited to amateur bands", a Preset mode specialized for repeater frequencies will be added to the main band.

10-7-7 Preset Mode Settings

This setting is for when you wish to not indicate the Preset mode setting of the Operation mode.

1.Rotate the dial (upper) and select the "Preset mode setting".

2.Rotate the dial (lower) and select between "Indicated"↔"Not indicated".

•When you select "Not indicated," the Preset mode on either the main band or the sub band will not be indicated even when pressing the 🔘 key.

10

10-8 Memory Settings

How to set the Memory function will be explained in this article.

1.Select "Memory Settings" from the menu of Set mode.

2.By pressing the dial, the sub menu of the memory settings will appear.

10-8-1 Bank-Link Setting Function
When scanning the memories, you can freely combine the banks that you want to scan and group them. 10 pairs of groups and one specialized for bugging device detecting can be set, and the 10 pairs correspond to keys from ⟨0⟩ to ⟨9⟩ , and the bank for bugging device detecting corresponds to the ⟨SUB⟩ key.

●**How to set the bank-link function.**
1.Rotate the dial (upper) and select "Bank-link".

2.Press the keys from ⟨0⟩ to ⟨9⟩ or ⟨SUB⟩ and select the group number you want to set.

```
┌──────────────────────┐
│ M                9 S ▭▭ │
│        1 4 5 . 0 0 0    │
│                     F M │
│ Bank-link GRP. 0        │
│ BANK 0 LINK OFF         │
└──────────────────────┘
```

3.Rotate the dial (lower) and select the band you want to select, and the group will be registered by pressing the ⟨ENT⟩ key and by indicating "ON" on the display.
By pressing the ⟨ENT⟩ key again, "OFF" will be indicated on the display, and the register will be released.

•When confirming the details of a group set, select the group and rotate the dial (lower). The condition of links of respective banks will be indicated.

10-8-2 Over-Write Function

This function allows editing (overwriting and deleting) the channels registered in the Memory mode.

1.Rotate the dial (upper) and select "Overwrite".
"Overwrite" will be indicated on the display as shown on the right.

```
┌─────────────────────────┐
│ Ⓜ              B S ▣     │
│       145.000           │
│                    F M   │
│ Overwrite               │
│ Prohibited              │
└─────────────────────────┘
```

2.Rotate the dial (lower) and select the overwrite settings.
When rotating the dial, the settings will switch as shown in the illustration.

┌─→ Valid ←──→ Invalid ←──→ Released temporarily ─┐
└───┘

Valid	This setting will make the Overwrite function valid. Memories registered can't be edited.
Invalid	This setting will make the Overwrite function invalid. Memories registered can be edited.
Released temporarily	Memories registered can be edited. When turning the transceiver on again, the setting will be valid automatically.

Please read "Deleting Memory Channels (P.42)" to learn how to delete memory channels.

10-9 Scanning Settings

Various scanning functions that are not loaded in this transceiver are explained in this article.

1.Select "Scanning" from the menu of the Set mode.

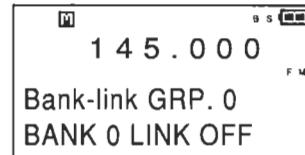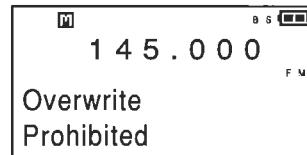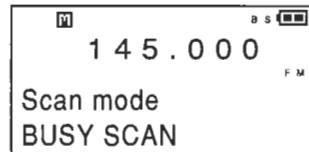**2.By pressing the dial, the sub menu of the scanning settings will appear.**

10

10-9-1 Scan Mode Settings

You can set the resuming conditions when you practice scanning.

1.Rotate the dial (upper) and select "Scan type".
"Scan type" will be indicated on the display as shown on the right.

```
┌─────────────────────────────┐
│ Ⓜ              a s ▣         │
│      1 4 5 . 0 0 0           │
│                       F M   │
│ Scan mode                   │
│ BUSY SCAN                   │
└─────────────────────────────┘
```

2.Rotate the dial (lower) and select from between "Busy scan"↔"1 second timer scan" and between "25 seconds timer scan"↔"1 second time settin" to "5 minutes time setting".
Set the scan mode according to the table below.

Busy scan mode	Scanning will resume if there is no signal after ceasing to scan.
Timer scan mode	Scanning will resume when the set time is up even when receiving radio waves after ceasing to scan.
Time setting scan mode	This function will automatically move to the next channel and receive radio waves when the set time is up regardless of whether there is a signal or not. This function will operate even when the squelch is open. The time to stop scanning can be set from 5 seconds to 5 minutes.

MEMO

•The time setting scan mode is a scan mode that automatically moves to the next channel when the set time is up regardless of whether there is a signal or not. As this mode operates even when the squelch is open, it is a useful function when receiving data communications such as ACARS (Aircraft Communication Addressing and Reporting System), when you want to receive data of multiple channels in a particular time interval and when you want to scan while taking time monitoring every one channel.
•This function can be used in the VFO mode, the Preset mode and the Memory mode.

10

10-9-2 Scan Skip Settings

You can select whether to skip the frequencies registered in the search pass memory channels or the memory channels assigned for skipping.

The frequencies registered in the search pass memory channels will skip in VFO scans.

Program scans and Preset scans (excluding TV channels), and the memory channels assigned for skipping will be skipped when scanning memories.

When scanning memories, the frequencies registered in the search pass memory channels won't be skipped.

1.Rotate the dial (upper) and select "Scan skip".

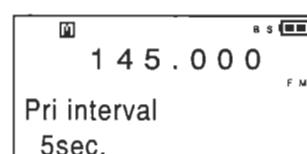"Scan skip" will be indicated on the display as shown on the right.

```
ⓜ              B S ▮▮
    145.000
                    F M
Scan skip
SKip
```
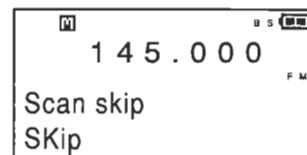
2.Rotate the dial (lower) and select between "skip"↔"not skipped".

10-9-3 Priority Interval Setting

This article explains how to set priority intervals in the Priority function.

1.Rotate the dial (upper) and select "Pri interval".

"Pri interval" will be indicated on the display as shown on the right.

```
ⓜ              B S ▮▮
    145.000
                    F M
Pri interval
5sec.
```

2.Rotate the dial (lower) and select the interval every 5 seconds in a range from 5 to 60 seconds.

10-9-4 Priority Duration Setting

This article explains how to set the time to stop when receiving priority channels in the Priority function.

1.Rotate the dial (upper) and select "Pri duration".

"Pri duration" will be indicated on the display as shown on the right.

```
ⓜ              B S ▮▮
    145.000
                    F M
Pri duration
BUSY
```
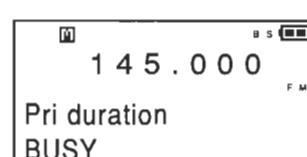
2.Rotate the dial (lower) and select between "Busy"↔from "1 second" to "25 seconds".

The timer mode can be selected in the Busy mode from 1 to 25 seconds.

10

10-10 Key Assignment

The settings of the key assignments of this transceiver are explained in the following.
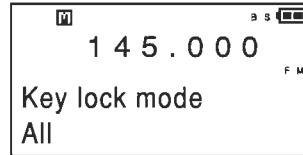
1.Select "Key assignment" from the menu of the Set mode.

2.By pressing the dial, the sub menu of the key assignments will appear.

10-10-1 Key Lock Mode Settings

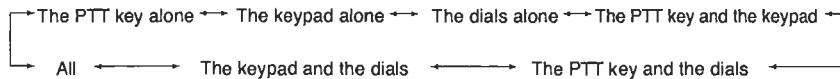This article explains the allocation of the keys and dials that are to be locked.

1.Rotate the dial (upper) and select "Key lock mode".

```
 M                    a s
        1 4 5 . 0 0 0
                            F M
Key lock mode
All
```

2.Rotate the dial (lower) and select the type of the key lock mode.

Every time the dial is rotated, the modes switch as follows;

┌→The PTT key alone ←→ The keypad alone ←→ The dials alone ←→The PTT key and the keypad ┐

└─ All ←──→ The keypad and the dials ←────→ The PTT key and the dials ←─────┘

| The PTT key alone	Press the [PTT] key and the operating transmission will be locked.
The keypad alone	The keypad operations will be locked.
The dials alone	The dial operations will be locked. *
The PTT key and the keypad	The [PTT] key transmission and the keypad operations will be locked.
The PTT key and the dials	The [PTT] key transmission and the dial operations will be locked.
The keypad and the dials	The keypad operations and the dial operations will be locked.
All	All operations will be locked.

* The "volume", "squelch" and the [MONI] key can be operated.

10

10-10-2 Moni Key Mode Setting

The operations when pressing the [MONI] key can be set either in monitor mode or in mute mode.

1.Rotate the dial (upper) and select "Moni key mode".
"Moni key mode" will be indicated on the display as shown on the right.

```
 M               B S ▢▢
       1 4 5 . 0 0 0
                        F M
Moni key mode
Monitor
```
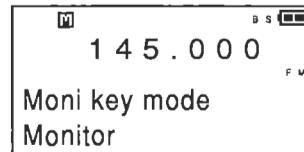
2.Rotate the dial (lower) and select between "monitor"↔"mute".

Monitor	When pressing the [MONI] key, the squelch will open temporarily.
Mute	When pressing the [MONI] key, the sound will mute temporarily.

10-10-3 Moni Operation Settings

The settings of the operations when the [MONI] key is pressed are explained in this article.

1.Rotate the dial (upper) and select "Moni operation".
"Moni operation" will be indicated on the display as shown on the right.

```
 M               B S ▢▢
       1 4 5 . 0 0 0
                        F M
Moni operation
Push
```
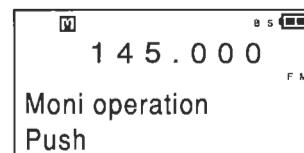
2.Rotate the dial (lower) and select between "Push"↔"Hold".

Push	Only when the [MONI] key is pressed, the monitor function or the mute function will operate.
Hold	When the [MONI] key is pressed and pressed again, the monitor function or the mute function will operate.

●**The settings of the bands subject to MONI key operations**
The bands subject to the operations when the [MONI] key is pressed can be set.
1.Rotate the dial (upper) and select "Moni operation".

2.Rotate the dial (lower) and select the bands subject to the {MONI} key operations.

Both bands	The subject of the [MONI] key will be both bands.
Main band	The subject of the [MONI] key will be the main band.
Sub band	The subject of the [MONI] key will be the sub band.
Operation band	The subject of the [MONI] key will be the operation band.

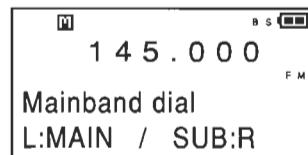**10**

10-10-4 Moniactive On Function Setting

This setting switches the functions of the dials on the left and the right sides.

1.Rotate the dial (upper) and select "Moniactive on".
"Moniactive on" will be indicated on the display as shown on the right.

```
 M                    B S [===]
      1 4 5 . 0 0 0
                         F M
 Mainband dial
 L:MAIN  /  SUB:R
```

2.Rotate the dial (lower) and select between "Left: Main Sub: Right"↔"Left: Sub Main: Right".

10-10-5 Mainband Dial Function Setting

This setting switches the functions of the dials on the upper and the lower sides.

1.Rotate the dial (upper) and select "Mainband Dial".
"Mainband Dial" will be indicated on the display as shown on the right.

```
 M                    B S [===]
      1 4 5 . 0 0 0
                         F M
 Dial Freq.  :Upper
 Ring     AF:Lower
```
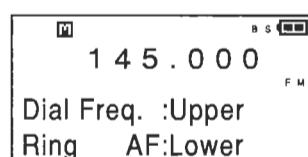
2.Rotate the dial (lower) and select the functions of the upper and lower dials.
When rotating the dials, the functions will switch shown as follows.

```
┌──► Frequency: Upper/Volume: Lower ◄──────────► Volume: Upper/Frequency: Lower ◄──┐
│                                                                                 │
└──► Squelch: Upper/Frequency: Lower ◄─────────► Frequency: Upper/Squelch: Lower ◄─┘
```
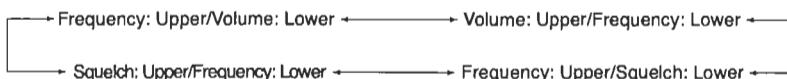
MEMO

•The functions of volume and squelch that are not assigned by rotating the dials can be adjusted by pressing them.

10-10-6 Dial Ring Settings

●Optional menus in the Set mode can be assigned in the ⬚ key. If you set the menus frequently used in the ⬚ key, you can change the settings quickly.
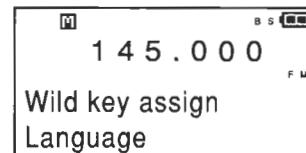
1.Rotate the dial (upper) and select "Wild key".
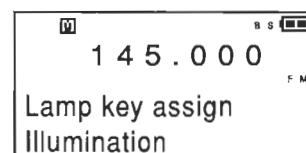"Wild key" will be indicated on the display as shown on the right.

```
M                    B S ▭
      1 4 5 . 0 0 0
                          F M
Wild key assign
Language
```

2.Rotate the dial (lower) and select the function that you want to assign in the ⬚ key.

●Optional menus in the Set mode can be assigned in the [LAMP] (MONI) key. If you set the menus frequently used in the [LAMP] key, you can change the settings quickly.

1.Rotate the dial (upper) and select"Lamp key assign".
"Lamp key assign" will be indicated on the display as shown in the right.

```
M                    B S ▭
      1 4 5 . 0 0 0
                          F M
Lamp key assign
Illumination
```

2.Rotate the dial (lower) and select the function that you want to assign in the [LAMP] key.

10-10-7 Setting Band Transition

When the frequency is indicated on the top or bottom side of the band, you can set the frequency to return to the other side in the band or to transmit to the next band while scanning or operating dials in the VFO mode on the sub band.

1.Rotate the dial (upper) and select "Band transition".
"Band transition" will be indicated on the display as shown on the right.

```
M                    B S ▭
      1 4 5 . 0 0 0
                          F M
Band transition
NO
```
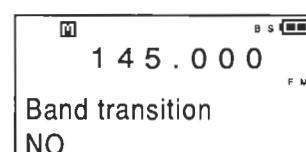
2.Rotate the dial (lower) and select between "Yes"↔"No".

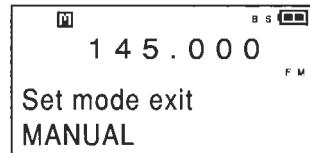| Yes	The frequency returns to the other side in the band.
No	The frequency transits to the next band.

10

10-10-8 Set Mode Exit Setting

This function allows setting the time to turn the Set mode off automatically when nothing is being operated. You can select from between manual and automatic (from 5 seconds to 5 minutes).

1.Rotate the dial (upper) and select "Set mode exit".

"Set mode exit" will be indicated on the display as shown on the right.

```
┌─────────────────────────┐
│ M              B S ▣     │
│      145.000            │
│                     F M │
│ Set mode exit           │
│ MANUAL                  │
└─────────────────────────┘
```

2.Rotate the dial (lower) and select between "Manual"↔from "5 seconds" to "5 minutes".

| Manual (default)	The transceiver will wait until the 🔘 or the [PTT] key is pressed.
From 5 seconds to 5 minutes	The Set mode will turn off if the keys are not operated within the set time. The changed settings will be saved.

10

11.Channel Indication Mode

This mode indicates only the bank and channel numbers instead of frequencies, and limits other functions in the memory mode.

1.Register memories previously.

2.Set the transceiver to the memory mode and turn it off.

3.Turn the transceiver on while pressing the [M→V/SCAN] and the [PTT] keys.
The indications on the display will be shown as on the right.

When releasing the channel indication mode, turn the transceiver off once, and turn it on while pressing the [M→V/SCAN] and the [PTT] keys.

bank   memory channel
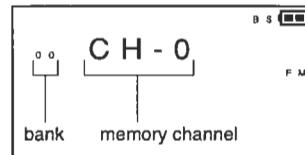
MEMO
- When the transceiver is in the channel indication mode, no operations can be done except changing the banks and channels, adjusting the volume, adjusting the squelch, MONI/MUTE function operations, memory scan operations and keylock operations.
- When the channel name is registered, the channel name will be indicated.
- Even when the transceiver is reset, the channel indication mode canÅft be released.
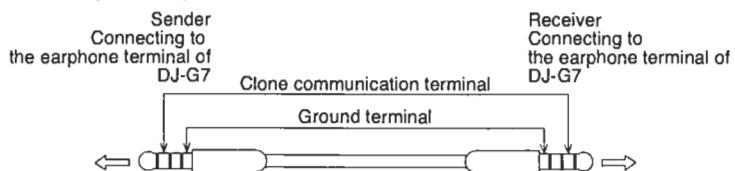
11

12.Cloning/PC Connecting Functions

The cloning function is a function that copies data of a DJ-G7 transceiver to another DJ-G7 transceiver. Two DJ-G7 transceivers are connected by a cable and information (including memory data) that is set by the sender will be copied by the receiver when using this function.
This transceiver can also be connected to a PC and memory channels and/or the settings of the Set mode can be edited using specialized software.

12-1 How to Connect

·When using the cloning function, an optional clone cable (EDS-11) will be connected from the sender's earphone/microphone terminal to the receiver's earphone/microphone terminal.
·When connecting this transceiver to a PC, an optional microphone/speaker plug conversion cable (EDS-14) is connected to the earphone/microphone terminal of this transceiver and the plug of a PC connecting cable (ERW-7) is converted to 2.5ø and connected to the PC.

●Clone cable (EDS-11)

Sender
Connecting to
the earphone terminal of
DJ-G7

Clone communication terminal

Ground terminal

Receiver
Connecting to
the earphone terminal of
DJ-G7

12-2 The Operation of the Sender of Data

When sending and receiving clone data between DJ-G7 transceivers, and sending and receiving data by connecting the transceiver to a PC, practice the following operations.

1.Connect a clone cable (EDS-11) to the earphone/microphone terminal while the transceiver is turned off, and then turn the transceiver on.

2.Press the [PTT] key 3 times while pressing the [MONI] key. The transceiver will be in the clone mode and wait for sending and receiving data.

When sending and receiving data from another DJ-G7 transceiver finishes, the power supply of the transceiver automatically turns off and the power supply turns on again.

> **CAUTION**
> •When transferring data, do not press any key.
> •When transferring data, do not disconnect the cables. If a cable disconnects, [ERROR] will be indicated on the display of the transceiver of the sender, and transferring data will break off.
> •When transferring data using the cloning function, the data of the receiver will be completely replaced with data of the sender. Please be careful when there is data in the transceiver of the receiver.

12-3 The Operation of the Receiver of Data

This operation is unnecessary for PC connection.

1. **Connect a clone cable (EDS-11) to the earphone/microphone terminal in the condition of the transceiver being turned off, and then turn the transceiver on.**

2. **Press the [PTT] key 3 times while pressing the [MONI] key.**
   "CLONE" will be indicated on the display as shown in the right.

   ```
   CLONE
   ```

3. **By pressing the dial, data will be transferred to the receiver.**

4. **When the transfer is finished, "FINISHED!" will be indicated on the display.**
   In case "ERROR" is indicated on the display, redo from step 1..

5. **Turn the power supply off.**
   If the power supply is not turned off, the clone mode will not be released.

12
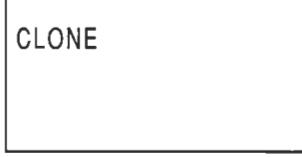
12-4 Packet Communication

Packet communication is one of the communication methods, which enables data transmission and reception with a PC through a TNC unit.

12-4-1 Connection of Packet Communication

When practicing packet communication with this transceiver, refer to the illustration below and connect it to a PC following the next steps.

Connect an optional EDS 14 microphone/speaker plug conversion cable to the earphone/microphone terminal on the top of this transceiver, and connect a TNC (commercial item: Terminal Node Controller) to the speaker terminal (using a 3.5ø plug) and to the microphone terminal (using a 2.5ø plug).

·Adjusting the input level:

This transceiver doesn't have a function to adjust the microphone and speaker level. Adjust the level on the TNC side.

·Adjusting the output level:

Adjust the output level from the earphone/microphone terminals at the audio output on the transceiver side.
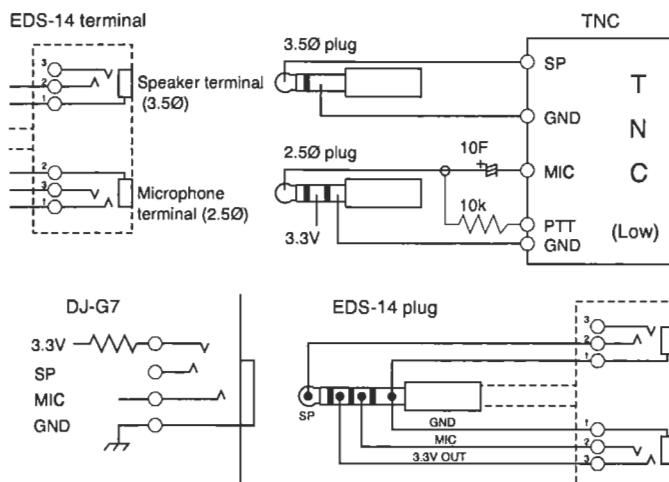
*Voltage will be supplied through resistor of 100Ω from the internal 3.3V line.

> **CAUTION**
> ·Please follow the instructions written in the instruction manual of TNCs to learn how to connect a TNC to a PC.
> ·If this transceiver, the TNC and the PC are in close proximity, noise may generate.
> ·When practicing packet communication, turn the BS ratio function off.
> ·When practicing packet communication, communicate not over 1,200 bps.

13.Reset Functions

⊘ CAUTION ·Please be careful that data deleted in the memory mode can't be recovered.

There are two types of reset functions in this transceiver; the part reset function that initializes only the display indication and the all reset function that deletes even memory data.

13-1 Part Reset

This function doesn't initialize the memory data and returns the settings to the condition when shipped.
This function is used when you don't know how to operate this transceiver and/or when it doesn't operate properly.

1.Turn the transceiver off.

2.Turn the transceiver on while pressing the [FUNC] key.

3.When "RESET FINISHED" is indicated on the display, release the key.

13-2 All Reset

This function is used for only limited uses such as reediting memory data.

1.Press the [STEP], [SCAN] and [FUNC] keys in order while turning the transceiver on.

2.When "ALL RESET FINISHED" is indicated on the display, release the key.
The transceiver will return to the default VFO mode.

13

14.Maintenance and Reference

14-1 Troubleshooting

As the following symptoms are not malfunctions, please check the possible causes and take proper actions. If a problem persists, please reset the unit. The setting program/CPU-related troubles are often resolved by the reset.

Symptom	Possible Cause	Action
Nothing appears on the display when turning on the power.	Poor battery pack connection.	Remove stains from the battery pack terminals.
	Battery is exhausted.	Recharge or replace the batteries in the dry cell case.
	You are releasing the power key too quickly.	Hold the power key down until the display shows the figure.
	The [PTT] key is pressed.	Release the [PTT] key and turn the unit on again.
No speaker audio.	Volume too low.	Adjust the audio level.
	Squelch level too high.	Adjust the squelch level.
	Tone squelch is on.	Turn off tone squelch.
	DCS in on.	Turn off DCS.
	You are pressing the PTT key and transmitting.	Release the [PTT] key.
	The mute function is on.	Release the mute function.
Frequency display is incorrect.	CPU error.	Remove the external power supply and the battery pack, wait for more than 10 seconds and attach them again. If the trouble isn't resolved even by following these steps, reset the unit.
	A channel name is set.	Refer to "Memory Name Function (P. 46)".
Won't scan.	Squelch is unmuted.	Set squelch so that noise mutes.
Frequency and memory channel number don't change.	Key lock is on.	Turn off Key lock.
Key entry not possible.	Key lock is on.	Turn off Key lock.

14

Symptom	Possible Cause	Action
Repeater-Access can't be used.	Incorrect setting of parameters.	Confirm the repeater settings.
Can't transmit. Display brinks or goes out when you transmit.	Battery is exhausted.	Recharge or replace the batteries in the dry cell case.
Can't transmit. No replyn when you transmit.	Not pressing the PTT key firmly enough.	Press the PTT key and confirm that the TX/RX lamp is lit red.
	The transceiver is set to off band rejection. (The shift setting is incorrect.)	Transmit in the range of transmission frequencies. Confirm the repeater settings.
	The frequency is incorrect.	Properly adjust the frequency to the other station.
The display flashes or disappears during reception.	Battery is exhausted.	Recharge or replace the batteries in the dry cell case.

·Waterproof portions such as DC power supply jack caps are consumption articles.
·In the case that after-sales services and support is necessary, please contact the dealer you purchased this transceiver from. To locate your nearest dealer, please read the "US/CANADA DEALERS" or the "INT'L DISTRIBUTION" sub menus in the "DISTRIBUTION" menu of our website (http://alinco.com/usa.html).

14

14-2 Options

•Li-ion Battery Pack (EBP-73: 7.4V 1,200mAh).
•Dry Cell Case (EDH-35)
•Basket (EDC-173)
•Basket Set (EDC-173J: with an AC adapter for charging)
•AC Adapter for Charging (EDC-112)
•Cigar-Lighter Cable for Charging (EDC-43)
•Cigar-Lighter Cable with a Filter (EDC-36)
•DC Cable (EDC-37)
•Speaker Microphone (EMS-59)*
•Speaker Plug (EMS-62: Waterproof plug)
•Tiepin-Type Microphone with a VOX Function (EME-15A)*
•Headset with a VOX Function (EME-12A)*
•Headset with a VOX Function (EME-13A)*
•Earphone Microphone (EME-21A: heavy duty specification)*
•Earphone Microphone (EME-32A: heavy duty specification with waterproof plug)
•Earphone Microphone (EME-34A: tiepin-type)*
•Earphone Microphone (EME-36A: waterproof plug)
•Straight Code Earphone (EME-6)*
•Curled Code Earphone (EME-26)*
•Clone Cable (EDS-11: waterproof plug)
•Microphone/Speaker Conversion Cable (EDS-14: waterproof plug)
•PC Connection Cable (ERW-7)*
•Soft Case (ESC-50)

CAUTION
•When using options with the * mark on, please purchase the EDS-14 cable.
•When using external DC cables, connect the cables to the transceiver before turning it on.

14

14-2-1 Microphone/Speaker Plug Conversion Cable (EDS-14)

1.Turn the transceiver off.

2.Rotate the plug clockwise (right). When it stops, confirm that the plug is securely connected.

3.Connect the microphone/speaker cables to the respective jacks.

Speaker jack (Ø3.5)

Microphone jack (Ø2.5)

14

107

15.Reset Functions

Frequency range capable for transmission and reception	Frequency range for transmission 144~146MHz, 430~440MHz, 1,260~1,300MHz Frequency range for reception 0.531~1,300MHz
Frequency Steps	5/6.25/8.33/10/12.5/15/20/25/30/50/100/125/150/200/500KHz/1MHZ
Modulation	F1D, F2D, F3E
Transmission methods	Simplex operation, Duplex operation
Power supply voltage	Operable range (external power supply terminal) DC4.5~DC16V
Consumption current(13.8V)	Audio rated output Mono band: Approx. 150mA Dual band: Approx. 200mA When transmitting in the 144MHz band (5W) approx. 1.7A When transmitting in the 430MHz band (5W) approx. 2.0A When transmitting in the 1,200MHz band (1W) approx. 800mA
Temperature range for use	From -10°C to +60°C
Dimension	61 (W) x 106 (H) x 38 (D) mm (excluding projections)
Weight	Approx. 296g (including the antenna and the Li-ion battery pack)
Transmitter	Power output: 144/430MHz bands 5W/2W/1W/0.3W(DC13.8V) 1,200MHz band 1W/0.3W(DC13.8V) Modulation method: Reactance modulation Max. deviation: ±5.0KHz Microphone impedance: 2k Ω

Receiver	System: AM/FM Double-conversion superheterodyne
	           WFM Single superheterodyne
	Intermediate frequency: FM (main band) First I.F. 51.65MHz
	                                                    Second I.F. 450KHZ
	                              AM/FM (sub band) First I.F. 50.75MHz
	                                                    Second I.F. 450KHZ
	                              WFM (sub band) First I.F. 10.7MHz
	Sensitivity: Main band
	         144~146MHz(FM) -15dBµ(12dB SINAD)
	         430~440MHz(FM) -15dBµ(12dB SINAD)
	         1,260~1,300MHz(FM) -14dBµ(12dB SINAD)
	         Sub band
	         0.531~1.62MHz(AM) -1dBµ(10dB S/N)typ
	         1.62~76MHz(FM) -6dBµ(12dB SINAD)typ
	         76~108MHz(WFM) -3dBµ(12dB SINAD)typ
	         108~144MHz(FM) -10dBµ(12dB SINAD)typ
	         144~146MHz(FM) -15dBµ(12dB SINAD)
	         146~174MHz(FM) -10dBµ(12dB SINAD)typ
	         175~221.75MHz(WFM) -3dBµ(12dB SINAD)typ
	         221.8~430MHz(FM) -10dBµ(12dB SINAD)typ
	         430~440MHz(FM) -15dBµ(12dB SINAD)
	         440~475.75MHz(FM) -10dBµ(12dB SINAD)typ
	         475.75~770MHz(WFM) -3dBµ(12dB SINAD)typ
	         770~1,260MHz(FM) -10dBµ(12dB SINAD)typ
	         1,260~1,300MHz(FM) -12dBµ(12dB SINAD)
	Selectivity: AM/FM -6dB/12KHz or more -60dB/35KHz or less
	           WFM -6dB/130KHz or more -60dB/300KHz or less
	Audio output power: Max. 400mW or more (8Ωdistortion)

*Ratings and specifications are subject to change without notice or obligation.

15

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