STANDARD

WIDE BAND RECEIVER AX400A AX400E

Owner's Manual

Thank you for purchasing our receiver
For proper use of this receiver, please read this manual thoroughly.
Keep this manual in a safe place for future reference.

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Page 13 BASIC OPERATIONS
Page 21 ADVANCED OPERATIONS
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MARANTZ JAPAN, INC.

Before Operation

Safety Cautions

Included are various illustrations and symbols in this manual to assure that this product is used safely and correctly, and to prevent injuries to you or to other persons as well as damage to your possessions. The meanings of these symbols are as shown below. Please understand these symbols before reading this manual.

⚠WARNING	Indicates contents which, if disregarded and the product handled incorrectly, could lead to a fatal accident or serious injury.
⚠CAUTION	Indicates contents which, if disregarded and the product handled incorrectly, could lead to injury or physical damage to property.

Examples of illustrations in symbols

This Δ symbol indicates that the contents describe points where caution is necessary or where there is danger. The illustration within the Δ at left indicates that there is danger of electric shock.

This ⃠ symbol indicates that there is an action that is prohibited. The illustration within the symbol on the left indicates that disassembly is prohibited.

This ● symbol indicates that there is an action to be performed by the user. The illustration on the left indicates that there is a general instruction.

⚠WARNING

- Never use any batteries other than size AA Alkaline, manganese batteries or CNB401 optional Ni-Cd battery pack. Using the different batteries could cause fire, electric shock or equipment failure.

- Never dispose used batteries into a fire. They may explode, causing fire or burns.

- Never install or remove batteries while your hands are wet. This may cause electric shock.

- In the event that smoke is emitted, a strange odor or noise is generated, or similar abnormality occurs, it could cause fire, electric shock or equipment failure. Consult your dealer immediately for the necessary instructions or repair service needed. Do not attempt to repair the receiver yourself, doing so may cause serious damage or physical injury.

- If this product is dropped or damaged in any way, contact your dealer. If it is used in a damaged condition, it could lead to fire, electric shock or equipment failure.

- Never attempt to disassemble or modify this product in any way. This may lead to fire, electric shock or equipment failure.

⚠CAUTION

- Do not use this product for anything other than a receiver.

- At all times, keep this products out of the reach of small children or babies.

- During extended periods of time without use, remove the batteries. Store the batteries in a safe place out of the reach of small children or babies.

- Discontinue use of this product if it has a negative influence on TV, electronic equipment, therapeutic devices and or other equipment.

- Always be aware of antenna location to avoid personal injury.

- During the clearning, disconnect the power.

- Do not expose this product to unattended conditions, extreme temperature, high humidity or excessive dust. Do not keep it in an automobile. This could lead to fire, electric shock or equipment failure.

NOTICE

- This radio is capable of receiving at frequencies from 100 kHz to 1299.999 MHz. However, AX400A cannot set the following frequency ranges.

  823 MHz to 850 MHz, 868 MHz to 896 MHz.

- Unauthorized use of the contents of radio communications or divulging its contents to other parties is prohibited by law.

How to use this manual

This manual descriptions are based on the AX400E.
This manual uses the following symbols.

Useful advice or suggestions.

P Reference to another page.

F Hold down the function key.

Set mode uses the following symbols. Set mode can set the various setting of this receiver to personalized.

Can be set in all modes.

Can be set in expanded mode.

After unpacking, make sure that the following items are included.

Receiver	1
Owner's manual	1
Antenna (BNC type)	1

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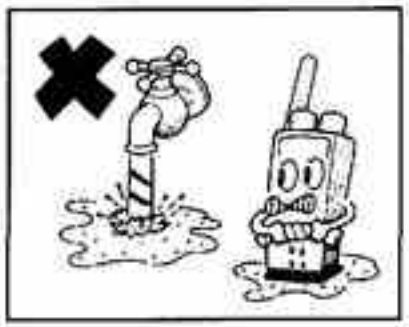
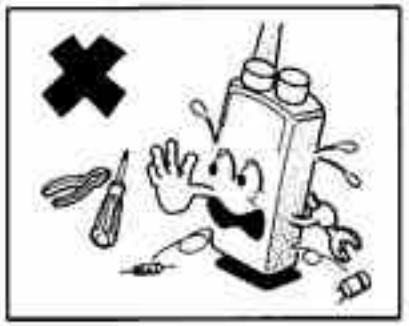
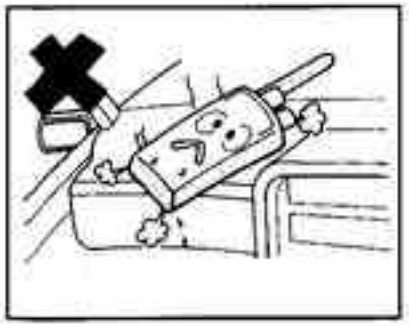
Precautions



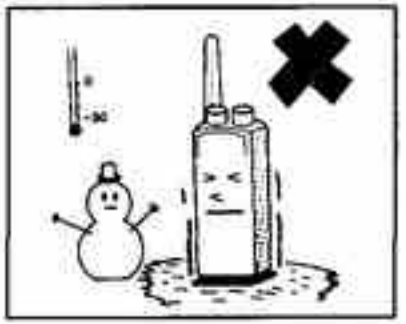
This receiver is water resistant. Avoid wet or humid places. If water is splashed on the receiver, wipe the moisture off with a dry cloth.



Never disassemble the receiver. Never make adjustments to the receiver. They are adjusted for optimum performance.

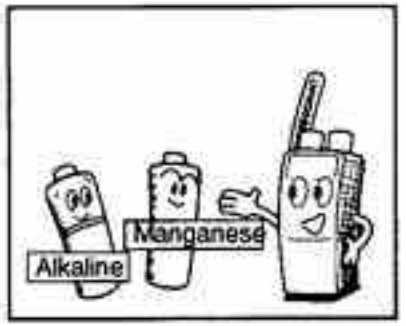


Avoid hot places and locations exposed to direct sunlight.



Avoid extremely cold places.

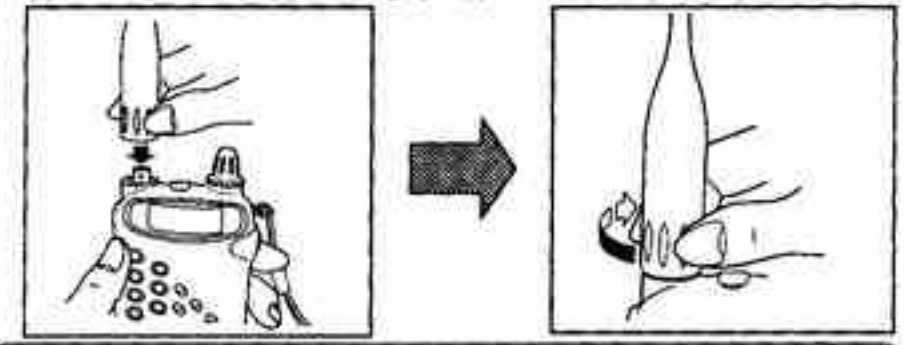
Avoid exposing the receiver to excessive vibrations.
Avoid dusty places.



An applicable battery is either AA-size manganese/ alkaline or nickel-cadmium battery pack CNB401.
Never use any other batteries. This receiver requires 2.2 to 3.5 volts DC. Never use a voltage out of this range. If a voltage out of this range is used, the receiver may be damaged.

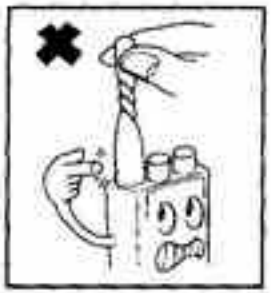
Attaching the Antenna

- Attach the included antenna to the BNC antenna terminal. Place the antenna on the antenna terminal and turn the antenna base clockwise.



⚠ CAUTIONS

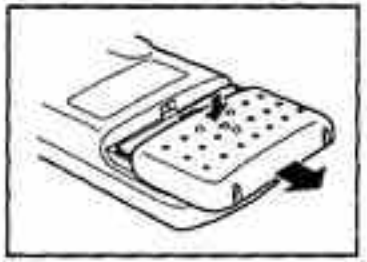
- Be aware of antenna location to avoid personal injury.



- Do not twist the top of antenna. Do not turn the top of antenna to fasten it .

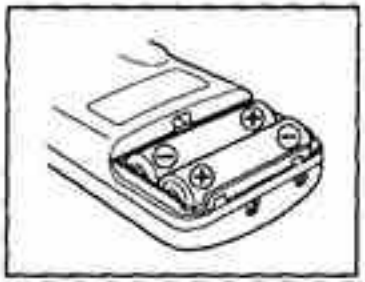
- Do not carry the receiver by the antenna, this may damage the antenna or antenna terminal.

Battery Insertion and Removal



1 Turn the receiver off.

2 Slide the battery cover off to open.



3 Confirm the location and polarity of the battery cells, and install or replace the batteries when required.

4 Slide the battery cover onto the receiver.

⚠ WARNING

- Never dispose used batteries into a fire. They may explode, causing fire or burns.

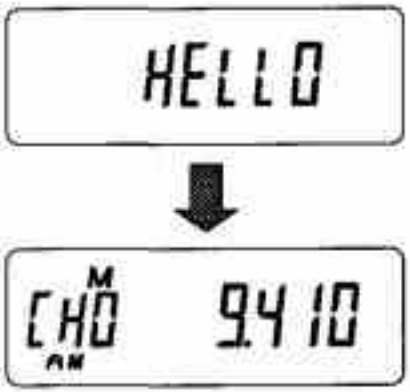
⚠ CAUTION

- If the batteries are not installed properly this may cause fire, burns or equipment failure.
- Never use old batteries and a new batteries together. This could cause fire or burns.

- When a CNB401 Ni-Cd battery is charged for the first time, it may take two or three charge cycles to obtain a full charge.

Turning the receiver On

1 Press the [POWER] key for 1 second or more.



2 Confirm the power up sound is emitted and the channel number 0 is displayed.
Initally, channel number 0 is set as follows;
AX400A: 446.00 MHz
Ax400E: 9.410 MHz

3 To turn off, press the [POWER] key for 1 second or more.

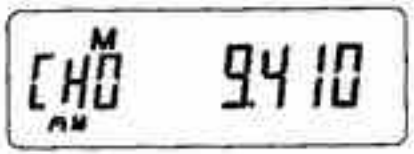
- "bAtt" is displayed when the battery voltage is 2 V or less. This indication is not concerned with turning the power on or off. Therefore, this indication is displayed when the power is turned off.
  If this indication appears, replace the dry cell battery or charge the CNB401 optional Ni-Cd battery.
- The power may be turned on and off repeatedly when the batteries are low. In such case, remove the batteries if the [POWER] key is not activated.

⚠ CAUTIONS

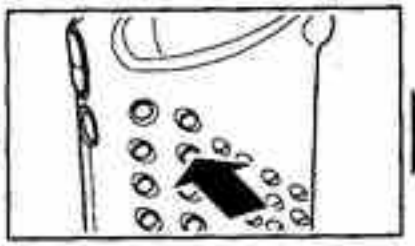
- When not in use, keep this receiver in a place that is out of the reach small children.
- During extended trips or other times when this receiver is not in use for long periods of time, remove the batteries. Keep the batteries stored in a place that is out of the reach of small children.

Basic Operation Guide

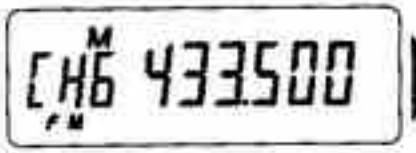
- This column explain a part of the basic operation. For proper use of this receiver, read this manual thoroughly. This column's procedure is that if the receiver is turned on after purchased, the frequency is set to a desired frequency (example; 433.52 MHz) and it is stored.



9.41 (MHz) is initially displayed at initial.



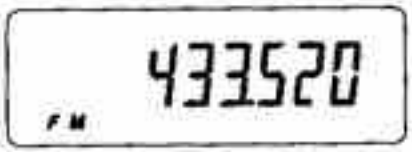
Press a key (P16) which is stored near the desired frequency.



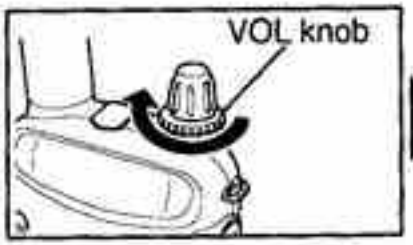
In this case, press the ⑥ key and 433.50 is displayed.

Turn the selector to set the desired frequency.

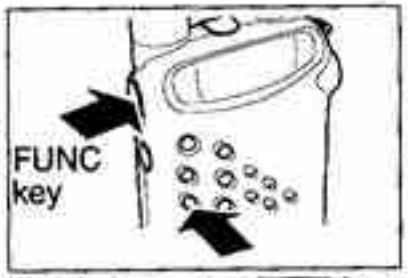
*



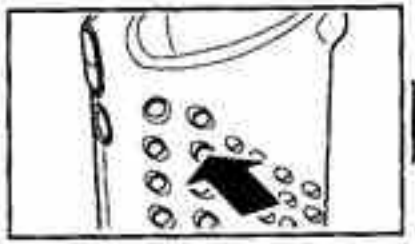
This receiver changes the reception mode automatically to match the frequency. This function is called Auto Mode (P24).



Turn the VOL knob (P8) slowly to set the desired volume level.



Hold down the FUNC key and press the ⑥ key to match the reception mode, if a sound is not emitted or distorted the reception mode does not match (P18).



To store new frequency, press the desired key for 2 seconds or more.

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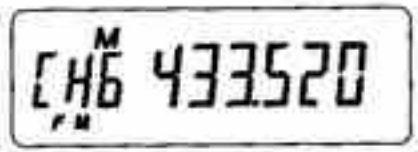


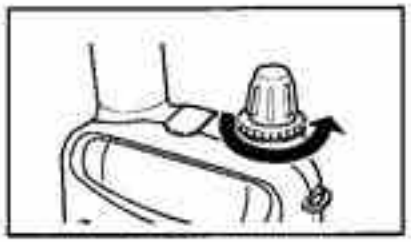
New frequency is stored.

Repeat the same procedure to set or store new frequency.

- The operation mode of this receiver is set Preset Mode (P16) when shipped from factory. Change the mode from Preset mode to Expand mode (P28), useful functions can be used and desired frequency can be found faster.

Adjusting the Volume

1 To increase the volume, turn the VOL knob clockwise.



2 To decrease the volume, turn the VOL knob counterclockwise.

⚠ CAUTION

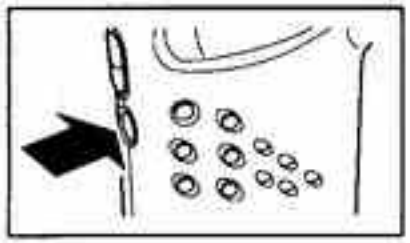
- Remember to reduce the volume before using the optional headset or earphone.

Adjusting the Squelch

- When a signal is not being received, a noise is emitted. The Squelch adjustment eliminates this noise. Also press the [SQL OFF] key to switch off the Squelch function temporarily.

1 Turn the SQL knob slowly in the "+" direction.

2 Stop turning the knob when the noise disappears.



3 To turn Squelch off, press the [SQL OFF] key. (This cause the noise to be emitted.)

- If the SQL knob is turned too far, it may become impossible to receive weak signals.
- If the signal is weak and the received sound is cut off, continue to press the [SQL OFF] key. It is possible to hear received sound continuously. However, it may be necessary to listen to the broadcast with mixed noise.
- Squelch Off: In this state the noise is emitted.
- Squelch On: Through the operation of Squelch, the noise is not heard in this state.

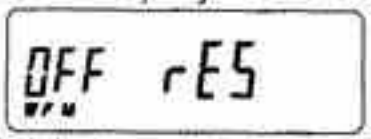
Resetting the VFO (VFO Reset)

- VFO Reset changes the VFO and the Set mode to the original factory programmed states. The memory is not changed.

F+ 0/SET

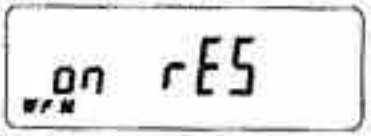
1 Hold down the [FUNC] key and press the [0/SET] key.

2 Turn the selector and change the Set menu display "OFF rES".



F+

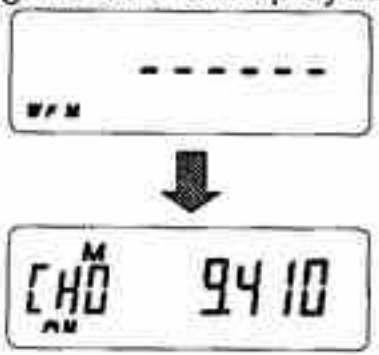
3 Hold down the [FUNC] key and turn the selector to change the display from "OFF" to "on".



F+ POWER

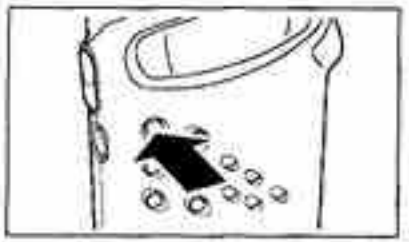
4 Hold down the [FUNC] key and press the [POWER] key.
(A high pitched beep is emitted.)

5 Release the keys and confirm the original state is displayed.

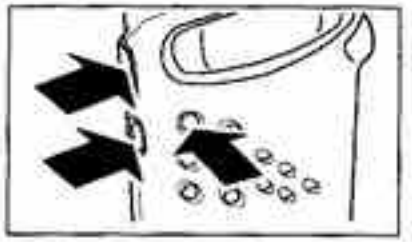


Resetting All Settings (All Reset)

- All Reset changes the VFO, the Set mode and memories to the original factory programmed states.



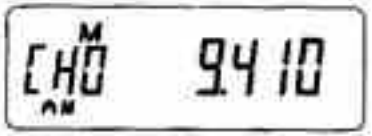
1 Press the [POWER] key to turn the power off.



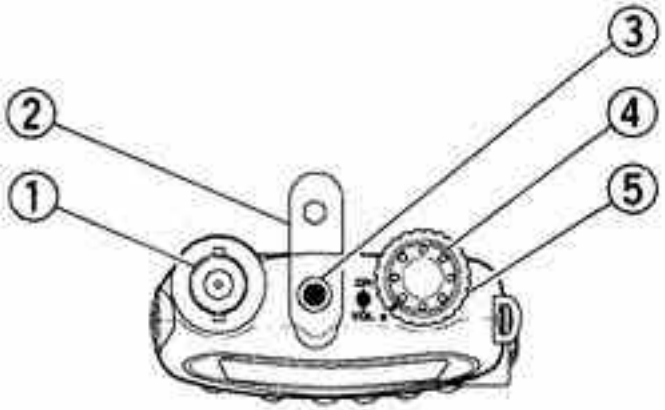
2 Hold down the [FUNC] key and the [SQL OFF] key and press the [POWER] key.
(All the items in the display are displayed at once.)

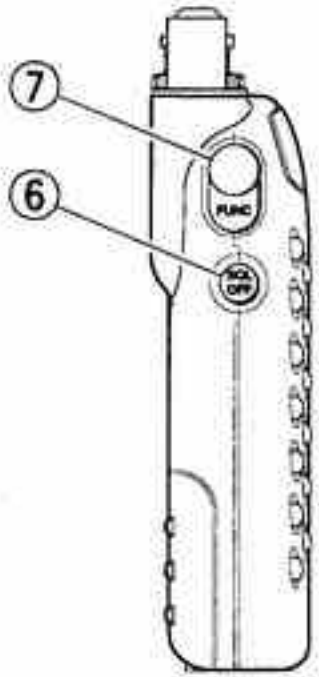
3 Release the keys and confirm the original state is displayed.

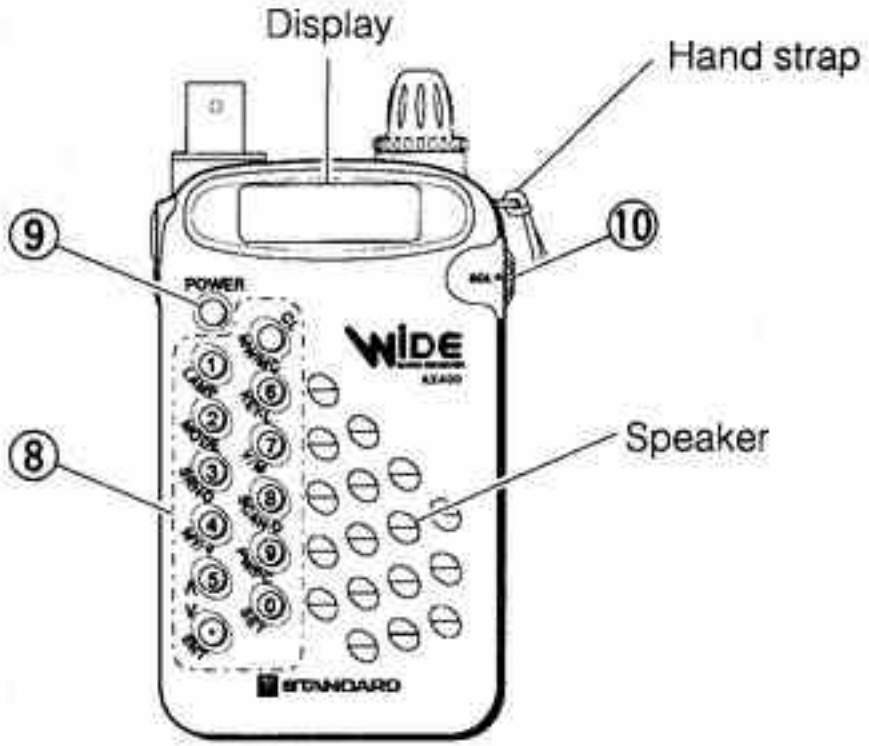
(Approx. for 3 seconds)



Operation and Function of Parts







① Antenna Connection Terminal (BNC Type)
To connect the Antenna.

② Speaker Cap
Ensure this cap is closed when the speaker terminal is not being used.

③ External Speaker Terminal
Connect the optional speaker.

④ Selector
Turn this knob to change the frequency. The setting contents change when adjusting the various types of settings.

⑤ VOL Knob
Turn this knob to adjust the volume.

⑥ SQL OFF Key
Squelch is turned off while this key is pressed.

⑦ FUNC Key
Various special functions can be set while pressing this key.

⑧ Numeric Keys
- [P] is indicated when in the Preset Mode and [E] is indicated when in the Expanded Mode.

1 LAMP Key
Pressing this key while pressing the [FUNC] key causes the lamp in the display to light for 5 seconds.
[P]:Calls Memory Address 1.
[E]:Inputs numeral "1".

2 MODE Key
Pressing this key while the [FUNC] key is pressed to change the reception mode from AM to FM or FM Wide (WFM).
[P]:Calls Memory Address 2.
[E]:Inputs numeral "2".

3 SRH•D Key
Pressing this key while the [FUNC] key is pressed the Search is started.
[P]:Calls Memory Address 3.
[E]:Inputs numeral "3".

4 MY/▼ Key
Pressing this key while the [FUNC] key is pressed changes the Set Mode function stored in the My Key.
[P]:Calls Memory Address 4.
[E]:Inputs numeral "4".
[E]:Pressing this key while the [FUNC] key is pressed switches between Scan and Memory Scan during scanning.

5 ∧ Key
Pressing this key while the [FUNC] key is pressed stored the edge frequency of the search as "Frequency A"
[P]:Calls Memory Address 5.
[E]:Inputs numeral "5".

6 KEY•L Key
Pressing this key while the [FUNC] key is pressed switches the Key Lock function On/Off.
[P]:Calls Memory Address 6.
[E]:Inputs numeral "6".

7 V/M Key
[P]:Calls Memory Address 7.
[E]:Inputs numeral "7".
[E]:Pressing this key while the [FUNC] key is pressed switches between the VFO state and the Memory Mode.

8 SCAN•D Key

[P]:Calls Memory Address 8.
[E]:Inputs numeral "8".
[E]:Pressing this key while the [FUNC] key is pressed starts the scanning operation.

9 PW/PC Key

[P]:Calls Memory Address 9.
[E]:Inputs numeral "9".
[E]:Pressing this key while the [FUNC] key is pressed switches to the Search Pass enter state.

0 SET Key

Pressing this key while the [FUNC] key is pressed calls the Set Mode.
[P]:Calls Memory Address 0.
[E]:Inputs numeral "0".

•V ENT Key

Pressing this key while the [FUNC] key is pressed stored the edge frequency of the search as "Frequency b".
[E]:Inputs of decimal point "•".
[E]:Pressing this key sets the portion of the frequency below the decimal point.

CL MW/MC Key

[P]:Pressing this key returns the VFO state.
[E]:Pressing this key cancels the contents which have been input up to that point.
[E]:Pressing this key while the [FUNC] key is pressed switches to the Memory Write state.

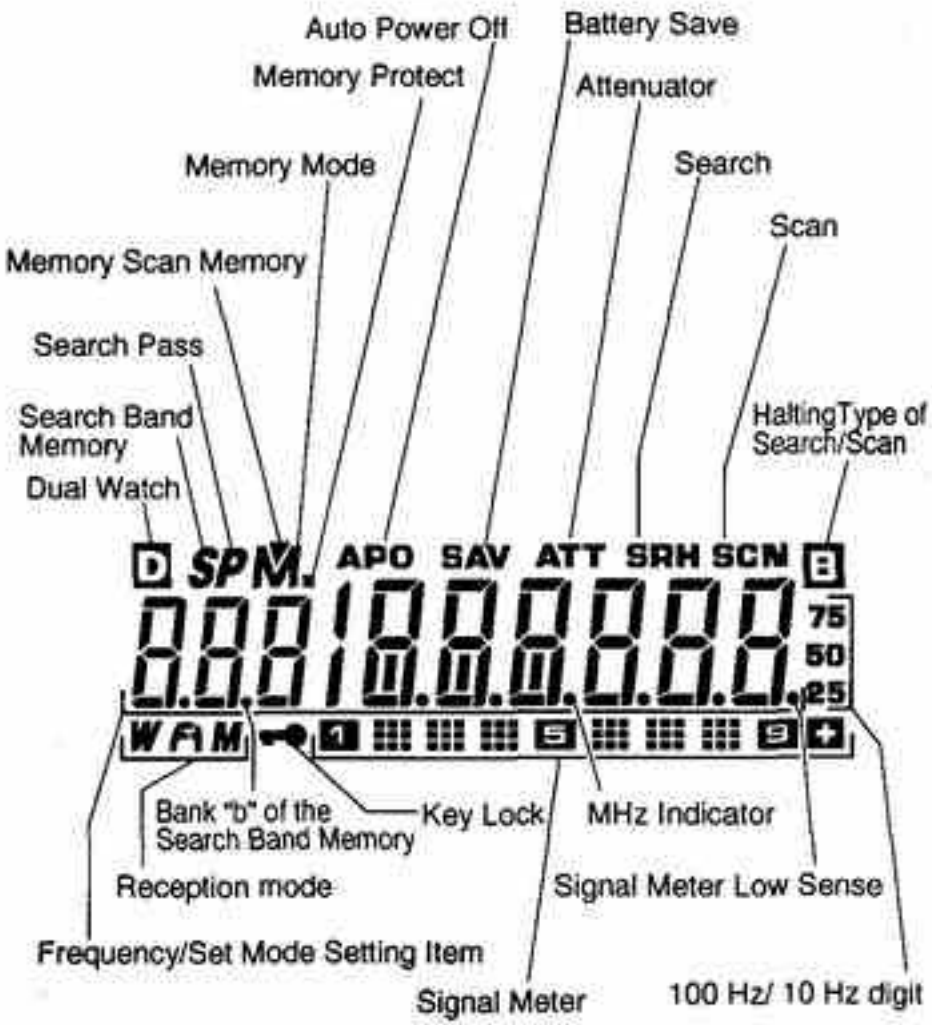
⑨ POWER Key

Pressing this key switches the power On/Off.

⑩ SQL Knob

Turning this knob adjusts the squelch.

Display Indications



BASIC OPERATIONS

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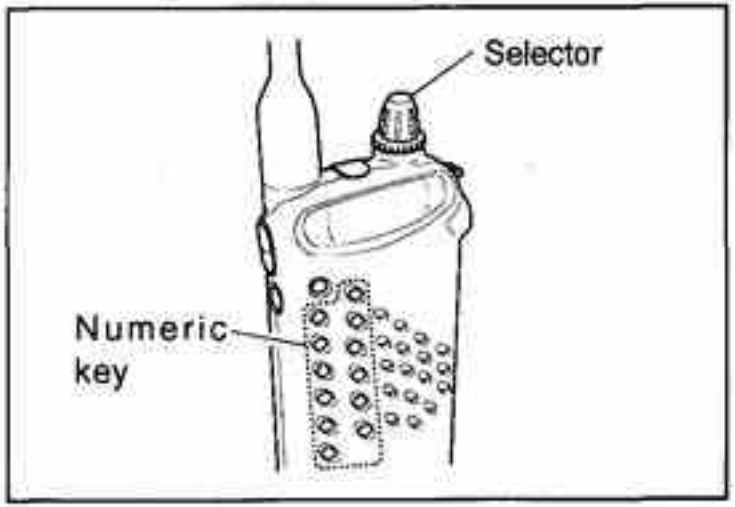
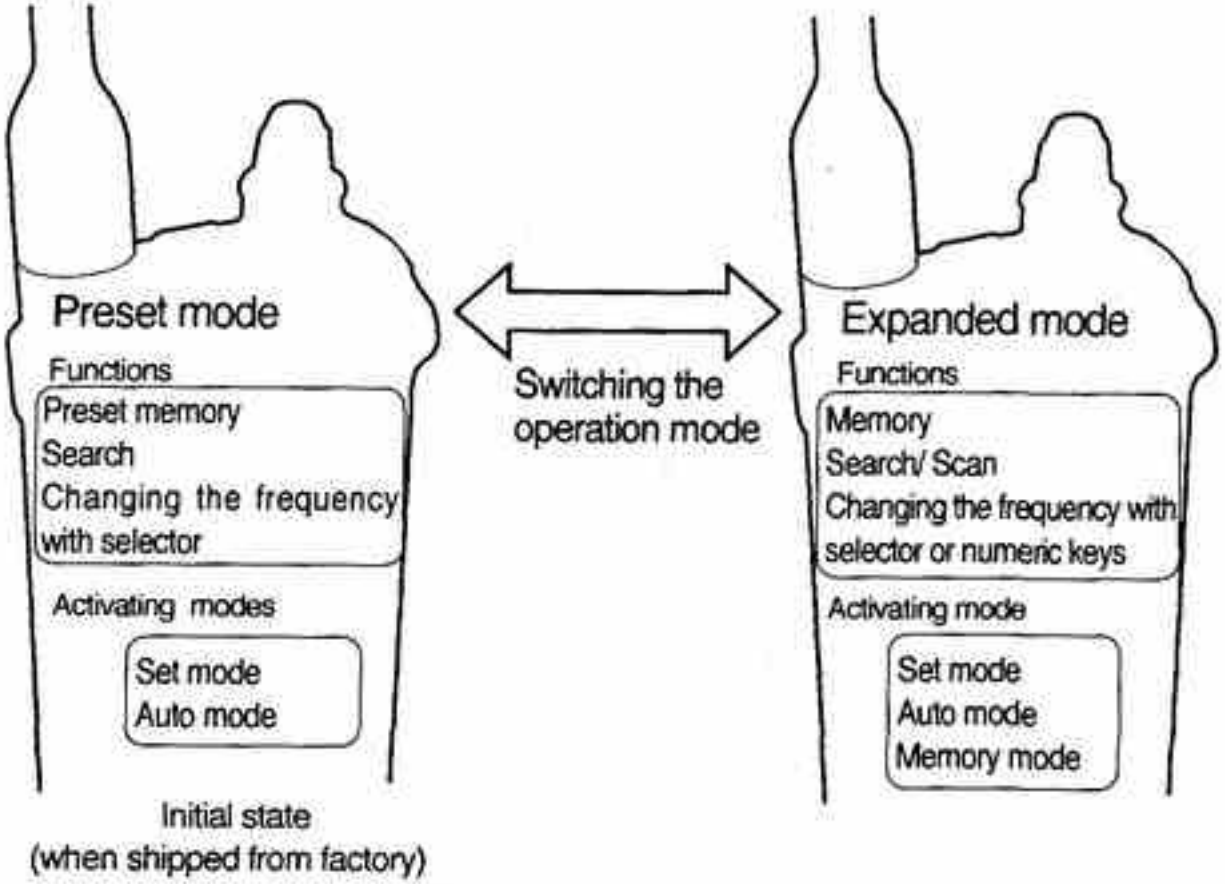
Receiver Unit

- This receiver (AX400 series) is capable of receiving AM, FM Narrow Band (Amateur Radio bands, etc.) and FM Wide Band (general radio broadcasts, etc.) broadcasts at frequencies from 100 kHz to 1299.999 MHz.
- This receiver has two operation modes, Preset Mode and Expanded Mode.
- When purchased the receiver is set in the Preset Mode. In this mode, major frequencies of amateur radio broadcasts, etc. have already been entered using the numeric keys and are stored in memory (P 16). Frequencies called from memory can be changed using the selector. The changed frequencies can be entered in the desired memory location assigned to each numeric key (P 18). This receiver has search function to find out the desired frequency quickly (P 20).



- In Expanded Mode, frequencies can be entered directly using the numeric keys. Search and scan function can be used to find out the desired function quickly. In this mode, up to 800 different frequencies can be entered in memory. A memory swap function is included to rationalize the use of memory.
- In this manual, the functions used when in the Expanded Mode are explained on pages 27 to 50.
- This receiver has following mode operation modes.
  Set mode (P 53).
  This mode set the various functions and conditions of the various functions for useful. Some set modes are not used in Preset mode.
  Auto mode (P 24).
  The reception mode is set to match the selected frequency automatically.
  Memory mode (P 34).
  The memory is called in Expand mode.

- The operation modes are switched as follows;



Preset Mode

- In its initial state (when shipped from the factory), this receiver is set in the Preset Mode. In this mode, the desired preset station frequencies can be called by pressing the numeric key assigned to each station. The preset frequencies can be changed to any other desired frequencies using the selector. The receiving mode can be set in greater detail in the receiver's Expanded Mode (P 28).

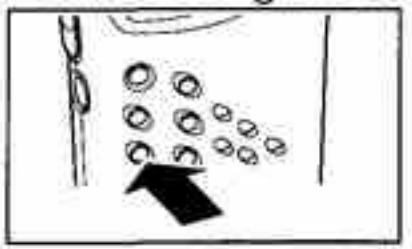
The following functions can be performed in the Preset Mode.

Recalling and storing the preset memory.
Storing and recalling the search band memory.
Changing the frequencies using the selector.
Changing the Set Mode.
Changing the Reception mode.
Key Lock.
Lighting the Display.

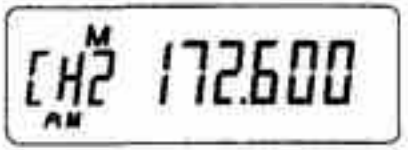
- In the Preset Mode, there are some Set Modes in which setting cannot be displayed. (P 53) All of these Set Modes can be displayed by changing to the Expanded Mode.
- When changing from the Preset Mode to the Expanded Mode, Search and Scan operations can be performed. (P 40) The station you desire to listen to can be found more quickly using Search or Scan. The station you desire to listen to can be jumped to by entering the frequency of that station to memory (P 35, 44, 45).

Recalling the Preset Memory

- When in the Preset Mode, the numeric keys function as Preset Memory Keys. The frequencies stored in memory can be easily called using these keys.



1 Press the numeric key corresponding to the desire frequency.



2 Confirm that the desired frequency is displayed.

- In the initial state, (when shipped from the factory), the following frequencies correspond to numeric keys 0 to 9.

Numeric Key	AX400A		AX400E	
	Frequency (MHz)	Reception mode	Frequency (MHz)	Reception mode
0	446.000	NFM	9.410	AM
1	5.000	AM	127.400	AM
2	10.000	AM	172.600	AM
3	15.000	AM	135.775	AM
4	13.282	AM	128.400	AM
5	13.270	AM	145.500	NFM
6	162.550	FM	433.500	NFM
7	52.525	FM	1297.500	NFM
8	146.520	FM	572.750	WFM
9	223.500	FM	103.500	WFM

Setting the VFO Mode

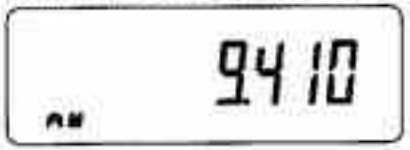
- The VFO (Variable Frequency Oscillator) mode is the state in which the frequency can be changed using the selector or the numeric keys, etc.

1 Confirm the display.

2 In Preset mode, various states can be return to VFO by following procedures.
If a preset memory is displayed, press the [CL MW/MC] key.(▶ 16)
When you are in the Set Mode, press the [CL MW/MC] key. (▶ 53)
When changing the frequency, press the [CL MW/MC] key.
(This is during a search, ▶ 20).

In Expanded mode, do above and following procedure to return the VFO.
If M is displayed, press the [CL MW/MC] key.
(This is the Memory Mode. ▶ 35)
When M is displayed, and when the frequency is being changed, press the [CL MW/MC] key twice.
(This is during scanning, ▶ 47)

3 Confirm the VFO mode returns.



Changing Frequency

- In the Preset Mode, frequencies can be changed using the Selector.

Using the Selector

1 Set to the VFO or recall the preset memory.

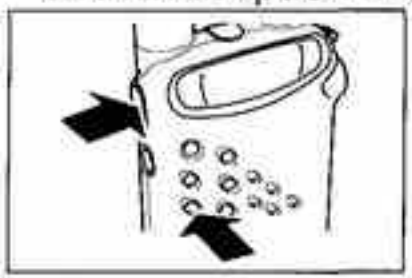
2 Turning the Selector in the clockwise direction increases the frequency one step at a time (▶ 24).

3 Turning the Selector in the counterclockwise direction decreases the frequency one step at a time.

- This receiver uses a Quick Encoder System. Turning the Selector rapidly causes large changes in frequencies.
- Holding down the [FUNC] key and turn the Selector, the frequency are changed by 1 MHz step. This step can be changed in set mode (▶ 31).
- In Expanded mode, numeric keys can also be used to change the frequency. (Changing the frequency [2] ▶ 28)

Selecting the Reception Mode

- AM, Narrow FM mode (FM) and Wide FM mode (WFM) can be selected corresponding to the reception mode being received.



1 Hold down the [FUNC] key and press the [2 MODE] key.

2 Each time the [2 MODE] key is pressed, the display changes.

WFM → FM → AM

WFM : Select to receive FM broadcasts and the voice component only of TV broadcasts.

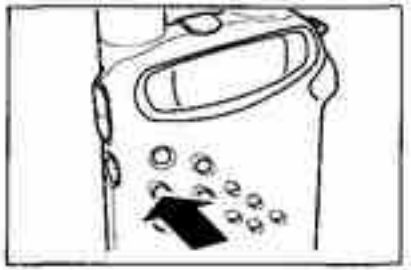
FM : Select to receive amateur radio bands and marine bands.

AM : Select to receive AM broadcasts and air bands, etc.

- If the radio transmission system is not matched, it is not possible to hear a broadcast even when it is being received, or it is distorted.
- In the initial state (when shipped from the factory), the Auto Step function (P 24) and the Auto Mode function (P 24) are functioning. These functions are used to change the frequency steps and reception mode automatically to match the frequency setting. These functions can both be canceled.

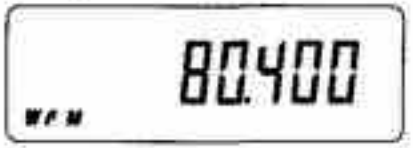
Changing the Preset Memory

- Changing the content of the preset memory.



1 Set to the VFO.

2 Changing the desired frequency and the reception mode.



3 Press the numeric key which is to be changed for 2 seconds or longer. (A long high-pitched beep is emitted and the memory address is displayed. The frequency is entered in the preset memory.)

- This receiver uses a Quick Encoder System. Turning the Selector rapidly causes large changes in frequencies.

Search Function

- In the Preset mode, in order to search for the desired frequency, Search function is provided.

- The Search function changes the frequency and receives the altered frequency. Changes in the frequency are made by frequency steps.

  Search (P20)
  Searches between two assigned frequencies within entire bandwidth.

- When a signal is received, search is halted. There are three ways to stop a search.

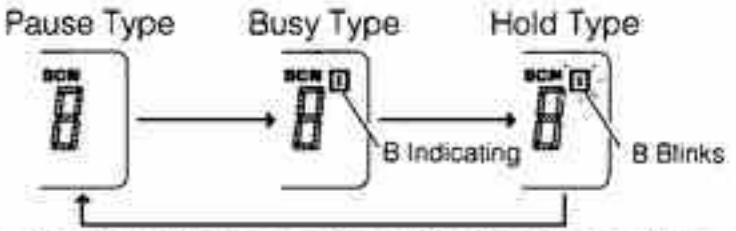
  Pause Type
  The search is halted when a signal is received. However, after about 5 seconds, the search resumes even if a signal is being received. This can be changed to a set time other than 5 seconds using the Set Mode. (P49)

  Busy Type
  Search halts while a signal is being received. If no signal is received, the search resumes after about 2 seconds.

  Hold Type
  The search is held when a signal is received. In order to resume the search, turn the Selector.

Changing the Type of halt

F + 0/SET Hold down the FUNC key and press the 0/SET key in a search.



Before beginning the scan, turn the SQL knob to a position where no noise is emitted.

- In Expanded mode, search and scan can be used. In this mode the search/scan has 6 methods and the desired frequency can be found out more quick.

Searching

• Searches between two assigned frequencies.

Assigning the search width

1 Set to the VFO.
2 Select the desired frequency to be start (or end) the search.
3 Hold down the FUNC key and press the 5 Λ key. ("Ain" is displayed.)
4 Hold down the FUNC key and press the 5 Λ key, when inputted frequency is correct. If the frequency is not correct, press the CL MW/MC key and return step 2.
5 Select the other edge frequency.
6 Hold down the FUNC key and press the •V ENT key. ("bin" is displayed.)
7 Hold down the FUNC key and press the •V ENT key, when inputted frequency is correct. If the frequency is not correct, press the CL MW/MC key and return to step 5.

• Initially, the stored search width is 100 kHz to 1299.999 MHz.
• If the same search width is searched, it is not necessary to assign the frequencies. Perform the "Start the search procedures". Refer to the column on the right.

Starting the search

1 Set to the VFO.
2 Hold down the FUNC key and press the 3 SRH•D key. ("S—" is displayed and the search is started.)

3 To end, press the CL MW/MC key.

• During a search, turning the Selector 1 click, the search is halted and the "SRH" blinks.
• When halting a search, if the frequency is increased with Selector, the search frequency is also increased, and if the frequency is decreased with Selector, the search frequency is also decreased.
• If the FUNC key is held down and the Selector is turned, the MHz section can be changed without stopping the search.
• Press a numeric key for 2 seconds or more during a search, the search width is stored in a search band memory the same as the numeric key pressed.
• In Preset mode, when perform above procedure, the search operation is stored in preset memory. The search can be started when the numeric key which has stored the search operation is pressed.

ADVANCED OPERATIONS

Lighting the Display's Lamp 22
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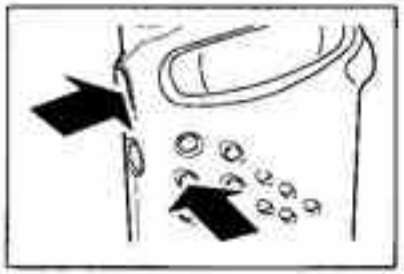
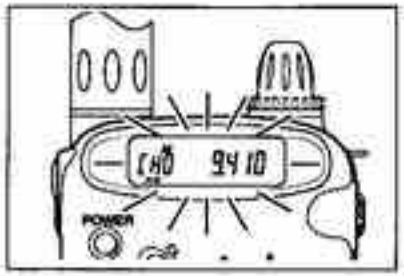
Lighting the Display's Lamp

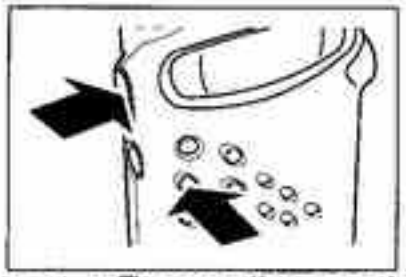
- When using the receiver in a dark place, etc., the display's lamp can be switched on. 5 seconds after keys operations have ceased, the lamp extinguishes.



1 Hold down the FUNC key and press the 1 LAMP key.



(The lamp lights.)



2 To extinguish, hold down the FUNC key and press the 1 LAMP key.

- Depending on the setting of the Set Mode, the lamp can be set to remain lit continuously. Refer to the right column.

Changing Lamp Operation

- The lamp stays lit for 5 seconds. However, lamp operation can be changed so that it remains on whenever it is operated.

F + 0/SET **1** Hold down the FUNC key and press the 0/SET key.

2 Turn the selector to change Set menu display to "nor LAmP".

F + **3** Hold down the FUNC key and turn the selector to change the display from "nor" to "tGL".

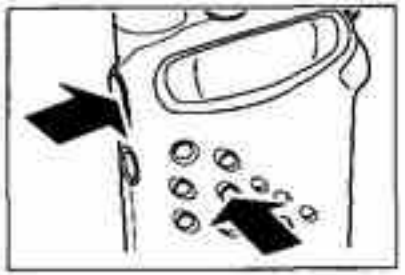
4 To complete the setting, press the CL MW/MC key.

F + 1 LAMP **5** To turn the lamp on, hold down the FUNC key and press the 1 LAMP key.

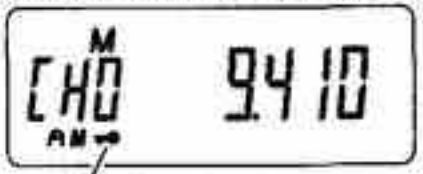
- To turn the lamp off, hold down the FUNC key and press the 1 LAMP key.

Using the Key Lock

- It is possible to disable the keys so they cannot be used. This is to prevent the wrong keys from being pressed and to prevent the operation from being changed by mistake. This operation is called Key Lock. The Selector cannot be used when the Key Lock function is activated.



1 Hold down the [FUNC] key and press the [6 KEY•L] key. (The Key mark is displayed.)



Key Lock mark

2 To cancel this function, hold down the [FUNC] key and press the [6 KEY•L] key.

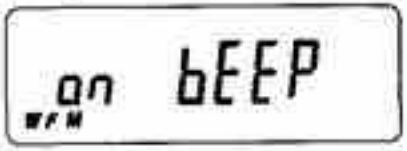
- During Key Lock function, the [FUNC], [POWER] [SQL OFF], [FUNC] + [1 LAMP] key can be used.
- When in the Expanded Mode, use of the Selector can be activated even during Key Lock using the Set Mode setting. (P 29)

Turning the Beep On or Off

- Whenever a key is pressed, and when the power is switched on, a beeping sound is emitted by the receiver. The beep can be disable.

F + [0/SET] **1** Hold down the [FUNC] key and press the [0/SET] key.

2 Turn the Selector to change Set menu display to "on bEEP".



F + **3** Hold down the [FUNC] key and turn the Selector to change the display from "on" to "OFF".

4 To complete the setting, press the [CL MW/MC] key.

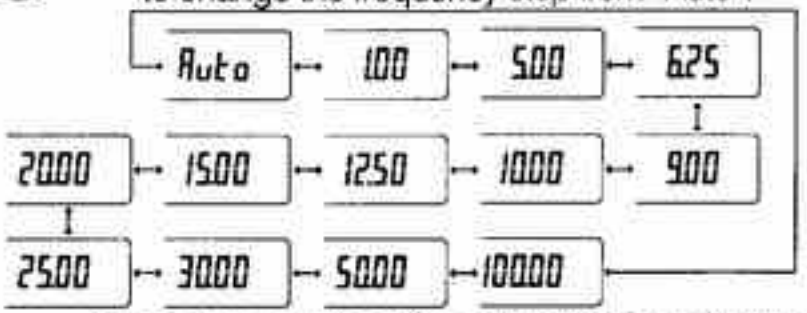
Changing the Frequency Step (Auto Step)

- When changing the frequency using the Selector, the frequency changes in accordance with the frequency step. In the initial state (when shipped from the factory), the frequency step changes automatically depending on the frequency. This is called Auto Step. The frequency step can be changed from Auto Step to a specific frequency step (1 kHz to 100 kHz).

F + 0/SET **1** Hold down the FUNC key and press the 0/SET key.

2 Turn the Selector to change Set menu display to "StP Auto".

F + **3** Hold down the FUNC key and turn the Selector to change the frequency step from "Auto".



4 To complete the setting, press the CL MW/MC key.

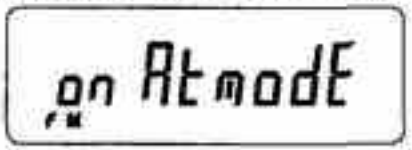
- For the relationship between the frequency and the frequency step during Auto Step, see Frequency/Frequency Step/Reception Mode Table (P 54).

Changing the Reception Mode to Match the Frequency (Auto Mode)

- In the initial state, the reception mode changes automatically to match the frequency. This is called the Auto Mode. This function can also be cleared.

F + 0/SET **1** Hold down the FUNC key and press the 0/SET key.

2 Turn the Selector to change Set menu display to "on Atmode".



F + **3** Hold down the FUNC key and turn the Selector to change the display from "on" to "OFF".

CL MW/MC **4** To complete the setting, press the CL MW/MC key.

- For the relationship between the frequency and the radio transmission system during Auto Step, see Frequency/Frequency Step/Reception Mode Table (P 54).

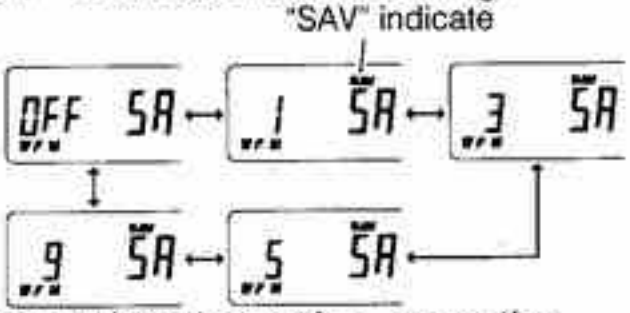
Using the Battery Save

- In order to extend the batteries' life, the amount of current consumed by the receiver can be reduced. This is called Battery Save. The length of time the current is reduced can also be changed.

F+ SET **1** Hold down the [FUNC] key and press the [0/SET] key.

2 Turn the Selector to change Set menu display to "OFF SA".

F+ **3** Hold down the [FUNC] key and turn the Selector to change the display from "OFF" to select the time setting.



CL MW/MC **4** To complete the setting, press the [CL MW/MC] key.

- The "SAV" indicator is displayed at all times when this function is set.
- When this function is used, the beginning of the reception may be interrupted. The scan is halted while the current consumption is reduced.

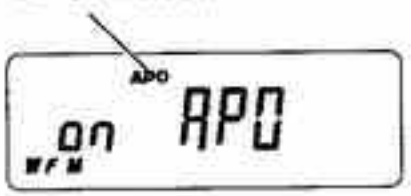
Using the Auto Power Off

- The receiver can be set to shut off its power automatically after approximately 30 minutes if there is no reception or if the keypad operation has ceased. This is called Auto Power Off. A warming beeps and "APO" blinks one minute before the power is cut off.

F+ SET **1** Hold down the [FUNC] key and press the [0/SET] key.

2 Turn the selector to change Set menu display to "OFF APO".

F+ **3** Hold down the [FUNC] key and turn the selector to change the display from "OFF" to "on".



CL MW/MC **4** To complete the setting, press the [CL MW/MC] key.

- The APO indicator is displayed at all times while this function is set.
- If the power is cut off by this function, press the [POWER] key for 1 second or more to power on.

Changing the Set Mode Function Simply (My Key)

- A frequently used Set Mode can be stored in "My (4 MY/▼) key". In the initial state, the frequency step is stored in this key.

Changing the Set Mode Function in My key

F + 4 MY/▼ Hold down the FUNC key and press the 4 MY/▼ key.
(Changed function of the Set mode is displayed for approximately 1 second.)

Storing the Set Mode into MY key

F + 0 SET **1** Hold down the FUNC key and press the 0/SET key.

2 Turn the Selector to change the Set menu display to be stored.

F + 4 MY/▼ **3** Hold down the FUNC key and press the 4 MY/▼ key.

CL MW/MC **4** To complete the setting, press the CL MW/MC key.

- Some Set Modes cannot be used even if it is stored. Please refer to the Set Mode List (P 53) for those set modes that cannot be used.
- When VFO Reset or All Reset are performed, the contents of this key return to the memorized frequency step.
- If the Set mode is stored that is can be used only in Expanded mode, the operation mode is changed Expanded mode to Preset mode then the contents of the MY key are restored "Switching the Operation Mode".

EXPANDED MODE

Switching the Operation Mode 28
Changing the Frequency [2] 28
Using the Selector in Key Lock 29
Controlling the Squelch with RF Level (RF Squelch) 30
Reducing Receiving Sensitivity (Attenuator) 30
Changing the Proportion of the Signal Meter Swings in Narrow FM Mode 31
Changing the Frequency to MHz Digit (Fast Step) 31

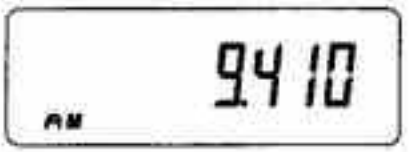
Switching the Operation Mode

- The Operation Mode can be switched from the Preset mode to the Expanded Mode. Scanning can be performed in the Expanded mode. The frequency can also be changed using the numeric keys. All the Set Mode functions can be used in the Expanded Mode.

F + 0/SET **1** Hold down the [FUNC] key and press the [0/SET] key.

2 Turn the Selector to change the Set menu display to "on PrESEt".

F + **3** Hold down the [FUNC] key and turn the Selector to change the mode.
(The operation mode is switched to the Expanded mode.)



- To return the Preset mode, change the Set menu display to "OFF PrESEt" in step 2 and hold down the [FUNC] key and turn the selector.

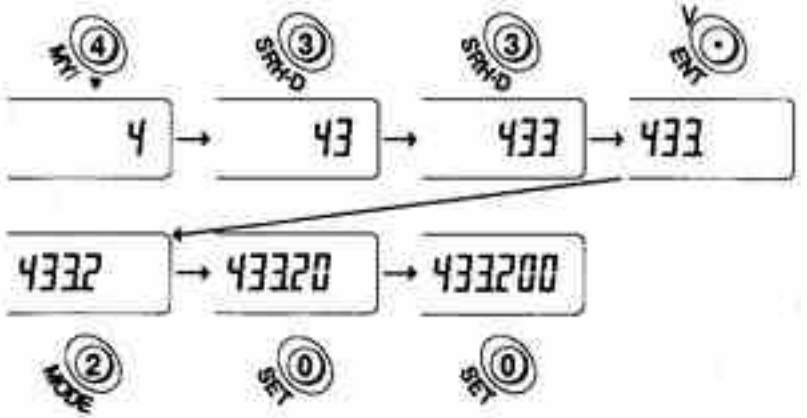
Changing the Frequency [2]

- In the Expanded Mode, there are two methods for changing the frequency, using the Selector and using the numeric keys. The key operation method for the Selector is the same as in the Preset Mode.

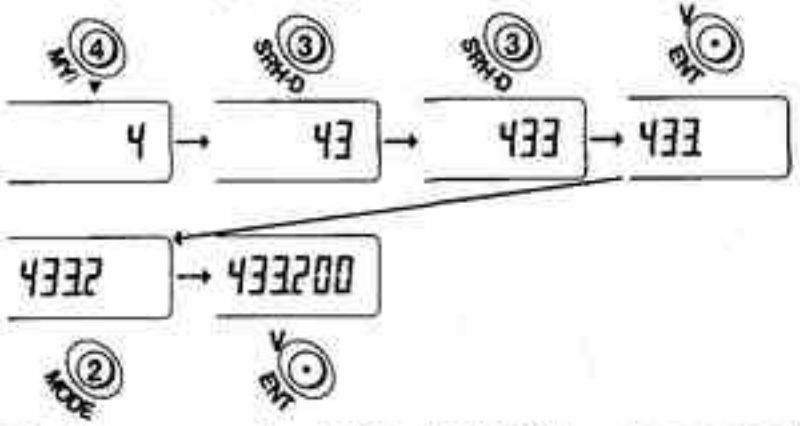
Before changing the frequency, set to the receiver's VFO mode. (P 17)

Changing the frequency using the numeric keys.

1 Input the frequency as far as the 1 kHz digit, then set the frequency.
Example: Inputting 433.2 MHz

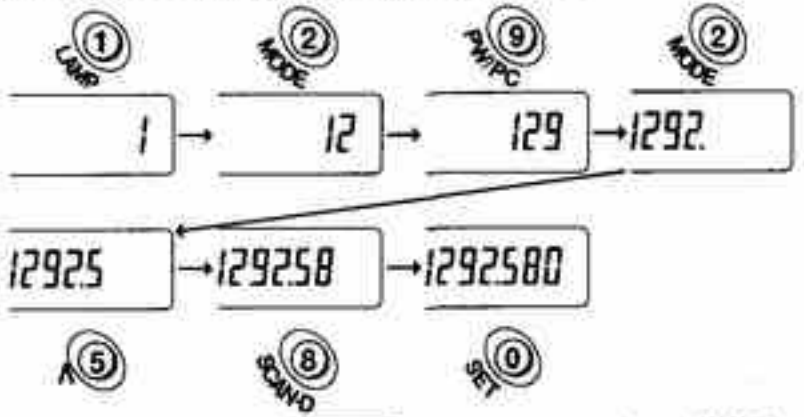


2 Input the digits below 100 kHz and set the frequency.
Example: Inputting 433.2 MHz



• The frequency is set if the [•VENT] key is pressed between the input of the 1 MHz digit and the 1 kHz digit.

3 Inputting a frequency higher than 1,000 MHz.
Example: Inputting 1292.58 MHz



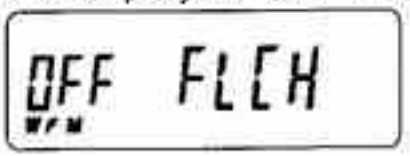
• Do not press the [•VENT] key between the 1 MHz. digit and the 100 kHz digit.

Using the Selector in Key Lock

• In the initial state, the Selector cannot be operated while the Key Lock is enabled. However, by using this function, operation of the Selector can be set.

1 Hold down the [FUNC] key and press the [0/SET] key.

2 Turn the Selector to change the Set menu display to "OFF FLCH".



3 Hold down the [FUNC] key and turn the selector to change display from "OFF" to "on".

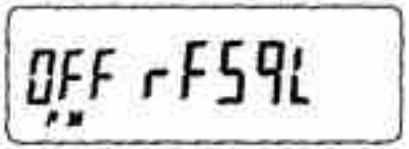
4 To complete the setting, press the [CL MW/MC] key.

• This setting is available if the operation mode is switched in the Preset mode.

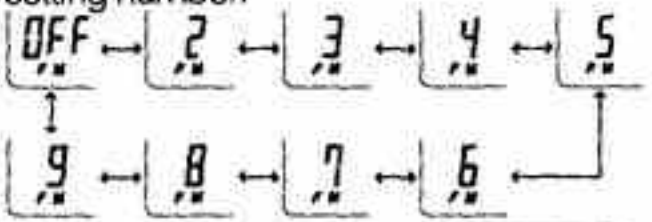
Controlling the Squelch with RF Level (RF Squelch)

- Squelch can be set to open in proportion to the strength of the input signal (RF), that is, to match the proportion of activation of the signal meter. This is called RF Squelch. This level can be changed.

F+ 1 Hold down the [FUNC] key and press the [0/SET] key.
2 Turn the selector to change the Set menu display to "OFF rFSqL".



F+ 3 Hold down the [FUNC] key and turn the selector to change display from "OFF" to setting number.



4 To complete the setting, press the [CL MW/MC] key.

- The relationship between the proportion of activation of the signal meter and the setting numbers is as shown below.

OFF	No setting	6	■■■■■■
2	■■	7	■■■■■■■
3	■■■	8	■■■■■■■■
4	■■■■	9	■■■■■■■■■
5	■■■■■		

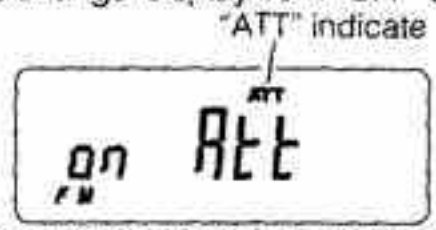
- This setting is available if the operation mode is switched in the Preset mode.

Reducing Receiving Sensitivity (Attenuator)

- The receiver's receiving sensitivity can be reduced. Occasionally a signal is so strong when it is received that the sound becomes distorted. Using this function, the receiver can be set so that distortion of the sound does not occur so easily. This is called an attenuator.

F+ 1 Hold down the [FUNC] key and press the [0/SET] key.
2 Turn the selector to change the Set menu display to "OFF Att".

F+ 3 Hold down the [FUNC] key and turn the selector to change display from "OFF" to "on".



4 To complete the setting, press the [CL MW/MC] key.

- When this function is switched on, the "ATT" indicator lights continuously.
- Receiving sensitivity is reduced by approximately 20 dB (when at 100 MHz) when this function is activated.

Sensitivity is high ↔ Sensitivity is low
(Can listen to weak signals.) (Only listen to strong signals.)

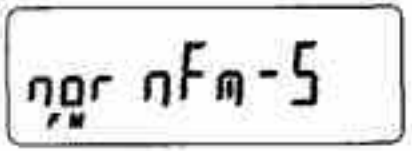
- This setting is available if the operation mode is switched in the Preset mode.

Changing the Proportion of the Signal Meter Swings in Narrow FM Mode

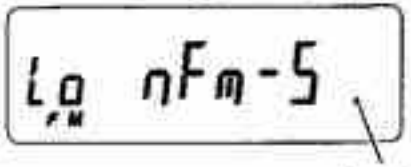
- Using this function, the proportion of the signal meter swings when the reception mode is set on narrow FM can be reduced.

F+ 0/SET **1** Hold down the FUNC key and press the 0/SET key.

2 Turn the Selector to change the Set menu display to "nor nFm-S".



F+ **3** Hold down the FUNC key and turn the Selector to change display from "nor" to "Lo".



Dot indicated

CL MW/MC **4** To complete the setting, press the CL MW/MC key.

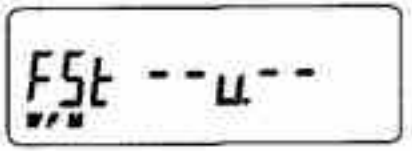
- When this function is set on Lo, a •(dot) is continuously displayed.
- This function does not operate when the reception mode is set on wide FM or AM.
- Setting this function on Lo makes it easy to find a transmission at times when a radio signal's source is brought near through "Fox Hunting." Use of this function in combination with the attenuator function (P 30) makes it even more effective.
- This setting is available if the operation mode is switched in the Preset mode.

Changing the Frequency to MHz Digit (Fast Step)

- Hold down the FUNC key and the Selector can be used to change the frequency, the frequency is changed to MHz digit. This digit change can be used between 100 MHz and 0.1 MHz.

F+ 0/SET **1** Hold down the FUNC key and press the 0/SET key.

2 Turn the Selector to change the Set menu display to "FSt - -u.- -".



F+ **3** Hold down the FUNC key and turn the Selector to set "u" to be desired digit.

CL MW/MC **4** To complete the setting, press the CL MW/MC key.

- This setting is available if the operation mode is switched in the Preset mode.

MEMORY FUNCTIONS

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The Memory Function

- In the Expanded mode, frequencies that are used frequently can be entered to memory. Up to 800 different frequency settings can be stored in memory.
- The mode in which frequencies are stored to memory or called from memory is called the Memory Mode. When in this mode, the "M" is displayed.
- The number of the memory where a frequency is stored is called the Memory Address.
- Memory Addresses 000 to 979 are available as below table.
- A group made up same 100 digit memory addresses is called a "Block".
- Block number 0 to 9 are available as shown below. Each blocks has 80 memories which are memory address X00 to X79.

Block number	Memory address
0	M 000 - M 079
1	M 100 - M 179
2	M 200 - M 279
3	M 300 - M 379
4	M 400 - M 479
5	M 500 - M 579
6	M 600 - M 679
7	M 700 - M 779
8	M 800 - M 879
9	M 900 - M 979

- A Memory Protect function (☞ 37) is provided to prevent changes in the contents of memory or clearing of memory by mistake.

- The following types of memory are provided.

Search Band Memory (☞ 42 - 44)

This memory has two frequencies which form a set, and is used when searching for a frequency between these two frequencies (Search, ☞ 41). Up to 20 sets (40 frequencies) can be entered in this memory. 10 sets (20 frequencies) are entered in this memory when the receiver is in its initial state. These frequencies can be reentered. 10 sets are gathered as a Bank. A bank is switched by Set mode. (☞ 43)

Search Pass Memory (☞ 44 - 46)

Frequencies entered in this memory are not received when a search is in progress. When there is a frequency that you do not want to receive, enter it here. Up to 90 frequencies can be entered in this memory.

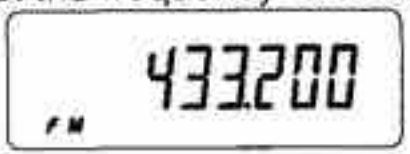
Priority Memory (☞ 50)

One frequency which is used most frequently can be entered in this memory. When in the Memory Mode, this frequency and the frequency in the Memory Mode can be received alternately. This function is called Dual Watch(☞ 50). In Dual Watch, the frequency in the priority memory are watched at 5 seconds intervals. Dual Watch can be used during a scan or search.

- Hold down the [FUNC] key and turn the Selector, the memory address is changed faster.

Storing the Memory

1 Set to the VFO.
2 Set the frequency to be stored.



F + CL MW/MC **3** Hold down the [FUNC] key and press the [CL MW/MC] key.
(This activates the memory store state.)

F + CL MW/MC **4** Hold down the [FUNC] key and press the [CL MW/MC] key.
(A high pitched beep is emitted, the frequency is entered to memory and the receiver returns to the VFO mode.)

- In step 3, the memory address is displayed, it is the smallest number that has not been entered.
- In step 3, memory addresses that have already been entered are not displayed.
- In Step 3, using the selector to changes the address of empty memory.
- In step 4, a memory address can be entered directly and frequencies stored in memory using the numeric keys. When this method is used, memory addresses with frequencies already entered, can have new frequencies entered over them.
- In step 3, if there is no vacant memory address, the display shows "min ---".

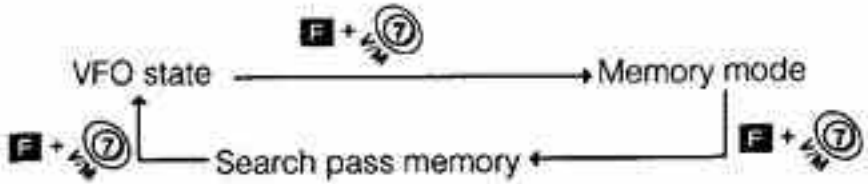
Calling the Memory [1]

- The contents that have previously been entered to memory can be called. The memory address can be changed using the Selector.

F + ⑦ V/M **1** Hold down the [FUNC] key and press the [7 V/M] key to set the memory mode.

2 Turning the Selector in the clockwise direction increases the memory address number. Turning counterclockwise decreases the memory address number.

- In step 1, a memory is not recalled and a low-pitched beep is emitted when no frequency is stored in the memory.
- In step 2, a stored memory is only displayed.
- A search pass memory is recalled by performed step 1 when a search pass memory is stored.

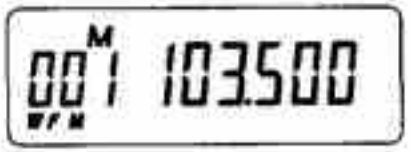


Calling the Memory [2]

- A memory address can be called directly using the numeric keys.

F + 7 V/M

1 Hold down the [FUNC] key and press the [7 V/M] key to set the memory mode.



2 Input the desired memory address using the numeric keys.
(The memory address is called when the third digit has been entered.)

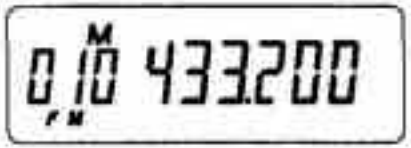
- In step 2, only the entered memory address can be recalled using the numeric key. If the memory address which are not entered is recalled, inputted address is canceled and low pitched beep is emitted twice.
- A search pass memory is recalled by performing step 1 when a search pass memory is stored.

Erasing the Memory

- Stored memory can be erased.

F + 7 V/M

1 Set to the VFO.
2 Hold down the [FUNC] key and press the [7 V/M] key to set the memory mode.
3 Select the memory address to be erased.



F + CL MW/MC

4 Hold down the [FUNC] key and press the [CL MW/MC] key. ("CLr" is displayed.)

F + CL MW/MC

5 Hold down the [FUNC] key and press the [CL MW/MC] key. (High pitched beep is emitted and the memory mode returned.)

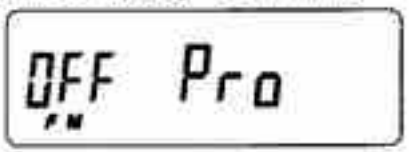
- The contents of memory cannot be retrieved once they are cleared. To prevent the contents of memory from being cleared, press the [CL MW/MC] key before proceeding to Step 5, or hold down the [FUNC] key and press the [7 V/M] key.
- When the last memory address has been cleared, a middle-pitched beep is emitted and the receiver returns to the VFO mode after Step 5.
- When the memory protect (P37) function activates, low-pitched beep is emitted twice in step 4.

Preventing Changes to Memory (Memory Protect)

- Changing the contents of memory by mistake and accidental erasing of memory can be prevented.

F + 0/SET **1** Hold down the [FUNC] key and press the [0/SET] key.

2 Turn the selector and change the Set menu display "OFF Pro".



F + **3** Hold down the [FUNC] key and turn the selector to change the display from "OFF" to "on".

Memory Protect indicated

CL MW/MC **4** To complete the setting, press the [CL MW/MC] key.

- All the contents of memory are cleared during All Reset even when this function is operating.
- This function cannot be used for Search Pass Memory.
- This setting is enable if the operation mode is switched to the Preset mode.

Erasing Memory One Block at a Time

- Memory can be cleared by blocks. A block of memory is made up of 80 memory addresses (P34).

F + 0/SET **1** Hold down the [FUNC] key and press the [0/SET] key.

2 Turn the selector and change the Set menu display "OFF bCLEAr".

3 Enter the block number to be erased with the numeric keys.

- When memory is not to be cleared, press the [CL MW/MC] key before step 3 to cancel the Set Mode.
- A block cannot be erased when the memory protect function is activated. In such case, cancel the memory protect function.

Exchanging the Contents of Memory (Memory Swap)

- The contents of memory can be swapped between two memory addresses.

1 Hold down the [FUNC] key and press the [0/SET] key.

2 Turn the Selector and change the Set menu display "SwAP".

3 Input the first memory address using the numeric keys. (The first memory address is displayed on the left side of SwAP.)

Memory address

4 Input the second memory address using the numeric keys. (The second memory address is displayed on the right side of SwAP.)

5 Input the third digit of the second memory address. (A high pitched beep is emitted and the receiver returns to the VFO state.)

- This function can be used for swapping the between stored memory address and empty memory address.
- This function cannot be used for Search Band Memory and Search Pass Memory.

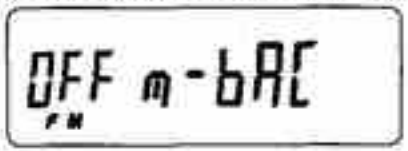
Returning to the VFO Mode with the Memory Frequency Unchanged

- When the Memory Mode is ended, the receiver returns to the previous VFO. Using this function, you can return to the VFO with the memory frequencies of the unchanged.

Preparation

1 Hold down the [FUNC] key and press the [0/SET] key.

2 Turn the selector and change the Set menu display "OFF m-bAC".



3 Hold down the [FUNC] key and turn the selector to change the display from "OFF" to "on".

4 To complete the setting, press the [CL MW/MC] key.

Returning to the VFO State

1 Select the memory address to be returned the VFO.

2 Press the [CL MW/MC] key. (A high-pitched beep is emitted and the VFO returned.)

- This function cannot be used for Search Pass Memory.

SEARCH/SCAN

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Search and Scan Function

- In the Expanded mode, in order to search for the desired frequency, Search and Scan functions are provided. A Dual Watch (P50) function is also provided where a specific frequency can be received alternately with a frequency stored in memory.
- The Search function changes the frequency and receives the altered frequency. This function has two different types. Changes in the frequency are made by frequency steps.

  Search (P41)
  Searches the entire band.

  One Touch Search (P42)
  Searches between two frequencies written to Search Band Memory.
- The Scan function is reception of all the frequencies stored in memory in sequence. This function has three different types.

  All Memory Scan (P47)
  Scans all the frequencies stored in memory.

  Memory Scan Memory (P48)
  Scans specific memory frequencies.

  Block Memory Scan (P49)
  Scans memories frequencies in a block. A block is made up of 80 memory addresses.

- When a signal is received, Scan/Search is halted. There are three types to halt a Scan/Search. The halting types can be set separately for Scan and Search.

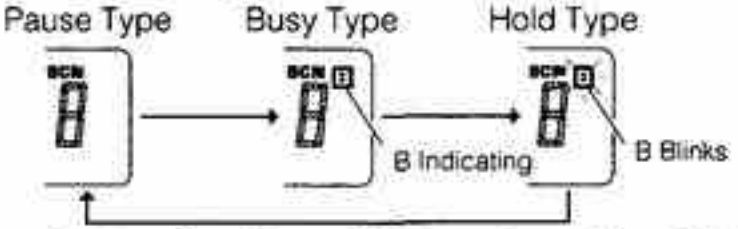
  Pause Type
  The Scan/Search is halted when a signal is received. However, after about 5 seconds, the Scan/Search resumes even if a signal is being received. This can be changed to a time other than 5 seconds using the Set Mode. (P49)

  Busy Type
  Scan/Search halts while a signal is being received. If the no signal is received, the Scan/Search resumes after about 2 seconds.

  Hold Type
  The Scan/Search is halted when a signal is received. In order to resume the Scan/Search, turn the Selector.

Changing the Halting Type

F + 0 SET Hold down the FUNC key and press the 0/SET key in Scan/Search mode.



Before beginning the Search/Scan, turn the SQL knob to a position where no noise is emitted.

Searching in Expanded Mode

• Searches between two assigned frequencies.

Assigning the search width

1 Set to the VFO.

2 Select the desired frequency to be start (or end) the search.

F + ⑤ **3** Hold down the FUNC key and press the 5 Λ key. ("Ain" is displayed.)

F + ⑤ CL MW/MC **4** Hold down the FUNC key and press the 5 Λ key when inputted frequency is correct. If the frequency is not correct, press the CL MW/MC key and return step 2.

5 Select the another edge frequency.

F + V ENT **6** Hold down the FUNC key and press the •V ENT key. ("bin" is displayed.)

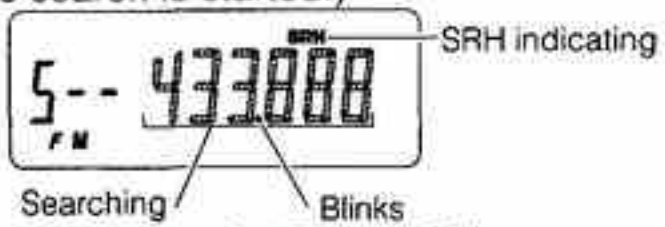
F + V ENT CL MW/MC **7** Hold down the FUNC key and press the •V ENT key when inputted frequency is correct. If the frequency is not correct, press the CL MW/MC key and return step 5.

- Initially, the stored search width is 100 kHz to 1299.999 MHz.
- If the same search width is searched, it is not need to assign the frequencies. Perform the "Start the search procedures". Refer to right column.

Starting the search

1 Set to the VFO.

F + ③ SRH•D **2** Hold down the FUNC key and press the 3 SRH•D key. ("S—" is displayed and the search is started.)



CL MW/MC **3** To end, press the CL MW/MC key.

- During a search, turning the Selector 1 click, the search is halted and the "SRH" blinks.
- When halting a search, if the frequency is increased with Selector, the search frequency is also increased, and if the frequency is decreased with Selector, the search frequency is also decreased.
- If the FUNC key is held down and the Selector is turned, the MHz section can be changed without stopping the search.
- Press a numeric key for 2 seconds or more in a search, the search width is stored in a search band memory same as numeric key number. (P 44)

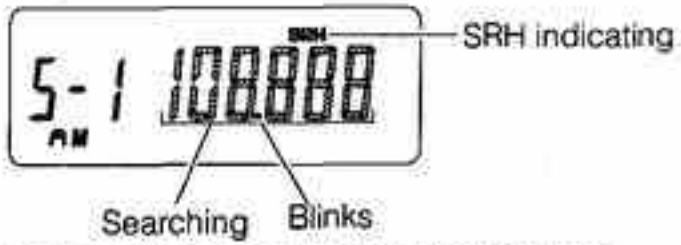
Using a One Touch Search

- This search uses a set of two frequencies that are entered to Search Band Memory, and searching the range between the two frequencies.

1 Set to the VFO.

2 Hold down the [FUNC] key and press the [3•SRH D] key.
(Search has been started.)

3 Press the numeric key to select the search band memory number to be searched.
(One toch search has been started.)



4 To end, press the [CL MW/MC] key.

- Initially, the stored search width is 100 kHz to 1299.999 MHz in step 2.
- The halting type and change of direction in this search are the same as in Search.
- If another numeric key is pressed while a One Touch Search is being conducted, the search range can be changed.
- If the [•V ENT] key is pressed while a One Touch Search is being conducted, the search range is set to "Searching (P 41)" and "S - -" is displayed.
- The search band memory can be confirmed by the Set mode. (P 43)
- In the initial state, the following frequencies are entered in 0 - 9 of the search band memory (Bank A).

Numeric key	AX400A Fequency range (MHz)	AX400E Fequency range (MHz)
0	50.000 - 54.000	50.000 - 54.000
1	108.000 - 138.000	76.000 - 107.750
2	144.000 - 148.000	108.000 - 142.000
3	153.000 - 155.000	144.000 - 148.000
4	156.000 - 162.050	156.000 - 162.050
5	222.000 - 225.000	430.000 - 440.000
6	420.000 - 450.000	1240.000 - 1299.995
7	460.000 - 461.000	0.100 - 1299.995
8	1240.000 - 1299.995	0.100 - 1299.995
9	0.100 - 1299.995	0.100 - 1299.995

- In the initial state, all search band memories of "Bank b" are stored 0.100 MHz - 1299.995 MHz. The "Bank A" and "Bank b" are switched by Set mode (P 43).

Confirming the Search Band Memory

F+ 0 SET **1** Hold down the FUNC key and press the 0 SET key.

2 Turn the selector to change the set menu display to "0-A 50.000".

F+ **3** Hold down the FUNC key and turn the selector to confirm the search band memory. (The search band memory is changed as follows; 0-A, 0-b, 1-A,....,9-A, 9-b, 0-A,....)

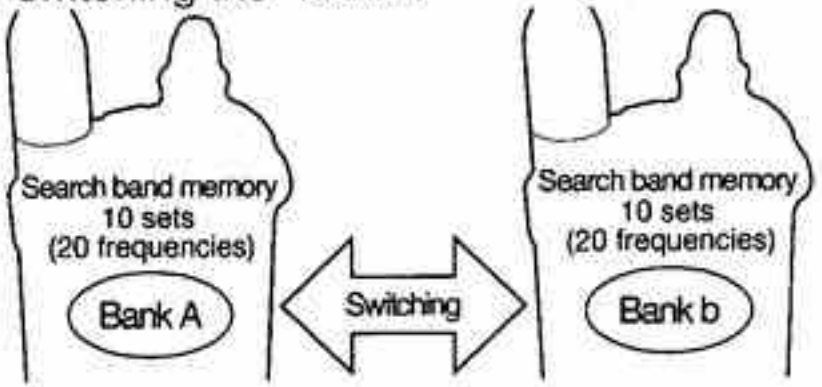
CL MW/MC **4** To end, press the CL MW/MC key.

- The dot "•" is displayed in the address number when the "Bank b" is set.

Dot "•" indicating

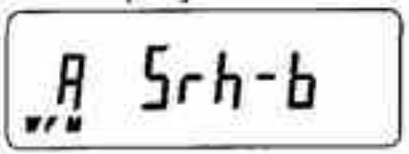
Switching the Bank of the Search Band Memory

- 10 sets (20 frequencies) of the search band memory are grouped as "Bank". This receiver has 2 Banks. Therefore, the search width can be stored 20 sets in the search band memory by switching the "Bank".

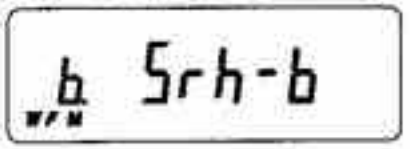


F+ 0 SET **1** Hold down the FUNC key and press the 0 SET key.

2 Turn the selector to change the set menu display to "A Srh-b".



F+ **3** Hold down the FUNC key and turn the selector to change the display from "A" to "b" and dot "•" is displayed.



CL MW/MC **4** To end, press the CL MW/MC key.

Rewriting Search Band Memory

- The frequency entered to Search Band Memory can be changed.

1 Set the search range as "Searching in the Expanded mode" (P41) and start the search.

2 Press the numeric key which is stored the search band memory to be rewritten for 2 seconds or more.
(A high-pitched beep is emitted and the search band memory is rewritten.)

3 To end, press the CL MW/MC key.

- The frequency which is stored in search band memory can be confirmed by Set mode. (P43)

Skipping a Frequency during a Search [1] (Search Pass Memory)

- When a search is being conducted, there are some frequencies where the receiver halts, but which are not needed. If this type of frequency is entered in Search Pass Memory, the receiver eliminates that frequency from a search. 90 frequencies can be entered in Search Pass Memory. The addresses of this memory are from P00 to P89. Search Pass Memory is entered during a search operation by the following procedure.

Writing to memory during search

1 Confirm that the search has halted on the selected frequency to be skipped.

2 Hold down the FUNC key and press the 9 PW/PC key.(A high-pitched beep is emitted and the frequency is stored in search pass memory.)

- If the pause type is selected as halting type, perform step 2 quickly. The search resumes after 5 seconds even if a signal is being received.
- When this memory is not empty, no frequencies can be entered it during a search operation. In such a case, clear any memory address with an unnecessary frequency (P46) or rewrite this memory in the VFO state (P45).
- This memory is available if the operation mode is switched to the Preset mode.

Skipping a Frequency during a Search [2] (Search Pass Memory)

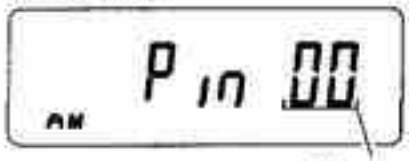
- Entering Search Pass Memory can be stored while in the VFO state.

Entering to Memory while in the VFO State

1 Set to the VFO.

2 Set the frequency to be skipped.

F + 9 PW/PC **3** Hold down the FUNC key and press the 9 PW/PC key.



Memory address

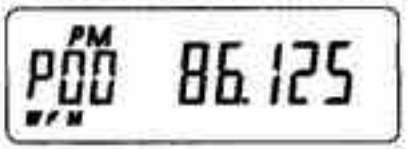
F + 9 PW/PC **4** Hold down the FUNC key and press the 9 PW/PC key.
(A high pitched beep is emitted and the frequency is entered in search pass memory.)

- After Step 3, a memory address other than the one being displayed can be called using the numeric keys or the Selector. If a numeric key is used to store the memory address, the memory address is stored in the search pass memory with a high-pitched beep when a numeric key is pressed.
- In Step 3, if the Search Pass Memory is not vacant, "Pin --" is displayed. At this time, input the number of the memory address which can be erased using the numeric keys. The new frequency is stored at that address.
- When in Memory Mode, holding down the FUNC key and pressing the 7 V/M key, the Search Pass Memory displays. Change the memory addresses using the numeric keys or Selector (P 46).
- This memory is available if the operation mode is switched to the Preset mode.

Confirming the Search Pass Memory

1 Hold down the FUNC key and press the 7 V/M key to set the memory mode.

2 Hold down the FUNC key and press the 7 V/M key to set a search pass memory.



3 Turn the Selector to confirm the search pass memory.

4 To end, press the CL MW/MC key.

- If no memory has been stored, the search pass memory is displayed in step 1. Therefore,no need to perform step 2.
- In step 3, hold down the FUNC key and turn the Selector to change 10 digit of the memory address.

Erasing the Search Pass Memory

1 Hold down the FUNC key and press the 7 V/M key to set the memory mode.

2 Hold down the FUNC key and press the 7 V/M key to set a search pass memory.

3 Select the memory address to be erased using the selector or numeric keys.

4 Hold down the FUNC key and press the 9 PW/PC key. ("CLr" is displayed.)

5 Hold down the FUNC key and press the 9 PW/PC key. (A high-pitched beep is emitted and the search pass memory is cleared.)

6 To complete the procedure, press the CL MW/MC key.

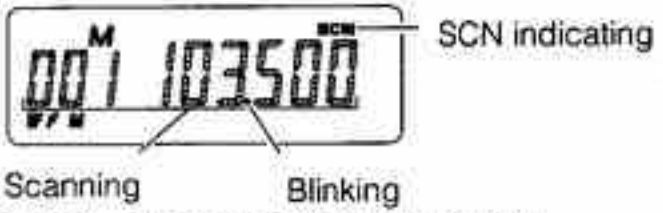
- If no memory has been stored, the search pass memory is displayed in step 1. Therefore,no need to perform step 2.
- When not clearing Search Pass Memory, press the CL MW/MC key before step 5.
- Middle-pitched beep is emitted when the last search pass memory is cleared and return the VFO.

Scanning All Frequencies in Memory (All Memory Scan)

• To scan all frequencies stored in memory.

F + 8 SCAN•D

1 Hold down the FUNC key and press the 8 SCAN•D key.
(Scan has been started.)



CL MW/MC

2 To end, press the CL MW/MC key.

• In step 1, the scan has not been started and low-pitched beep is emitted twice, if no memory has been stored.
• During a scan, turning the Selector 1 click, halts the search. The "SCN" blinks.
• When halting a scan operating, if the frequency is increased, the search frequency is also increased with Selector, and if the frequency is decreased with Selector, the search frequency is also decreased.
• If the battery save function is set and the scan has been started, the scan is halted while the current consumption is reduced.
• All Memory Scan can be used in Search mode, Memory mode, Set mode, Search Pass Memory and VFO mode.

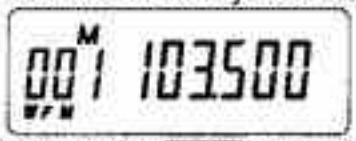
Scan Assigned Memory Frequencies (Memory Scan Memory)

• To scan only the assigned memory address.

Procedures:

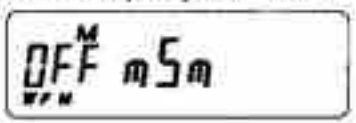
1 Set to the memory mode.

2 Set to the memory address to be scanned.



3 Hold down the [FUNC] key and press the [0 SET] key.

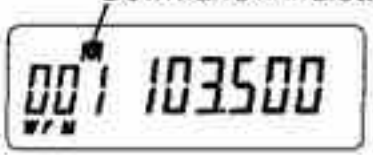
4 Turn the Selector to change the set menu display to "OFF mSm".



5 Hold down the [FUNC] key and turn the Selector to change the display from "OFF" to "on". (The Down-arrow is displayed above the "M".)

6 Press the [CL MW/MC] key.
(The Down-arrow is displayed above the "M" of the assigned memory address.)

Down-arrow indicating



7 To assign other memory address, repeat step 2 to 6.

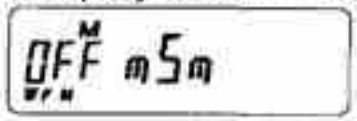
8 To complete the procedure, press the [CL MW/MC] key.

To Scan

1 Set to the VFO.

2 Hold down the [FUNC] key and press the [0 SET] key.

3 Turn the selector to change the set menu display to "OFF mSm".



4 Hold down the [FUNC] key and turn the selector to change the display from "OFF" to "on". (The Down-arrow is displayed.)

5 Hold down the [FUNC] key and press the [8 SCAN•D] key. (Scan has been started.)

"SCN" indicating

Scanning Blinks

6 To end, press the [CL MW/MC] key.

• To cancel the memory scan memory, change the display from "on" to "OFF" in step 4.

• To switch the memory scan memory and memory scan during the memory scan or memory scan memory, hold down the [FUNC] key and press the [4 MY/▼] key.

• No memory scan memory has been assigned, scan does not start with low-pitched beep twice in step 5.

Scanning a Block of Memory Address (Block Memory Scan)

- This scans memory in individual blocks. One block is made up of 80 memory addresses. (P34)

F + 8 SCAN•D **1** Hold down the FUNC key and press the 8 SCAN•D key.
(All memory scan has been started.)

0 SET ~ 9 PW/PC **2** Enter the block number to be scanned using the numeric key.

0 SET ~ 9 PW/PC **3** To scan another block, enter the block number using the numeric key.

CL MW/MC **4** To end, press the CL MW/MC key.

- During the memory scan memory, memory scan memory is started in a block when the block number is entered.
- A low pitched beep is emitted twice when no memory is stored in the block number entered. All scan memory is returned.
- To return the all memory scan from the block memory scan, press the •V ENT key.

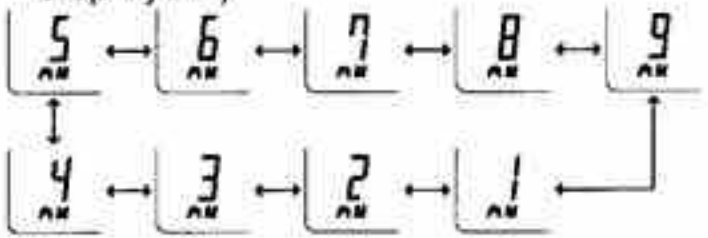
Changing the Halt Time in the Pause Type

- In a Pause Type Scan/Search, the scan or search operation is halted for approximately 5 seconds. This time interval can be changed.

F + 0 SET **1** Hold down the FUNC key and press the 0 SET key.

2 Turn the selector to change the set menu display to "5 dLAY".

F + **3** Hold down the FUNC key and turn the selector to change the display from "5" to desired time.
(The halting time in second is displayed.)



CL MW/MC **4** To complete the procedure, press the CL MW/MC key.

- This setting is available if the operation mode is switched to the Preset mode.

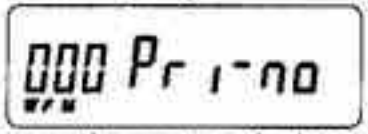
Using Dual Watch

- A frequency in memory is set as the priority memory "Pri-no" by set mode. The priority memory and one other frequency can be received alternately. This is called Dual Watch. In the initial state, priority memory is set as memory address 000.

Assign the memory address to be set priority memory

1 Hold down the FUNC key and press the 0 SET key.

2 Turn the selector to change the set menu display to "000 Pri-no".



3 Press the numeric key which is stored memory to be set the priority memory.

4 To end, press the CL MW/MC key.

- In step 3, the vacant memory address can be set as the priority memory. However, in such cases, dual watch cannot be used.

Using the dual watch during a Search or Scan

1 Start search or scan.

2 Hold down the FUNC key and press the 3 SRH•D key during search.
Hold down the FUNC key and press the 8 SCAN•D key during scan.
(The memory address Pri-no is received every five seconds.)

3 To end, press the CL MW/MC key.

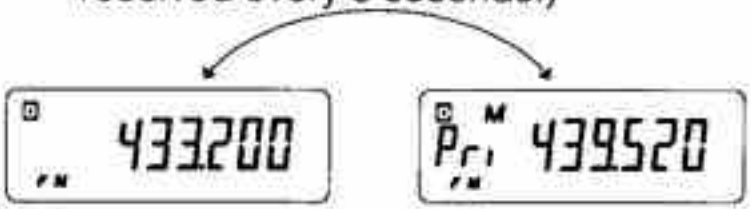
Using the dual watch (except during a search/scan)

1 Set to the frequency and mode to be set in dual watch.
VFO mode (P17), Memory mode (P34), Search pass memory (P44)

2 Hold down the FUNC key and press the 0 SET key.

3 Turn the selector to change the set menu display to "OFF duAL".

4 Hold down the FUNC key and turn the selector. (The memory address Pri is received every 5 seconds.)



5 To end, press the CL MW/MC key.

- If no frequency is entered to priority memory, a low pitched beep is emitted twice in step 4 and it is impossible to change the OFF display.
- Dual watch is halted while a frequency which is assigned the priority memory is received. The priority memory is watched every 5 seconds while other frequency which is not assigned the priority memory is received, therefore the voice may be interrupted.

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Troubleshooting

- Please check the following list of problems and possible corrections before consulting your dealer.

The power cannot be turned on.
- The battery is consumed. (P 5)
- The polarity of the battery is incorrect. (P 5)

The power cannot be turned off.
- The battery is low. (P 5)

The power is turned on and off alternately.
- The battery is low. (P 6)

"bAtt" is displayed.
- The battery is low. (P 6)

The frequency cannot be changed.
- The Key Lock is set. (The 🔒 is displayed.) (P 23)

Not receiving/ Only strong signals are received.
- The antenna is not properly connected. (P 5)
- The radio station is too far away.
- The squelch knob is turned fully clockwise. (P 8)
- A large value is set in RF Squelch setting. (P 30)
- Attenuater function is set. (P 30)

No received audio is sounded.
- The volume knob is turned fully counterclockwise. (P 8)
- RF Squelch is set. (P 30)
- The frequency does not match. (P 17)
- The reception mode does not match. (P 18)

Receiving Sound is Distorted.
- The frequency does not match. (P 17)
- The reception mode does not match. (P 18)

Noise is emitted.
- The squelch knob is turned fully counterclockwise. (Squelch is off) (P 8)

The memory is not stored.
- There are no empty memory addresses. (P 35)
- Memory protect function is set. (P 37)

Does not search.
- Squelch is off. (P 8)
- The frequency A and b which assign the search width is set same frequency. (P 41)
- The whole of the search width are stored in search pass memory. (P 46)

Memory is not scanned.
- The frequencies are not stored or only one frequency is stored. (P 35)
- The assigned memory is not set or only assigned memory is set in the memory scan memory. (P 48)
- Squelch is off. (P 8)

A speed of the memory scan is slowly.
- The battery save is set. (P 25)

The frequency cannot be entered using the numeric key.
- Operation mode is set Preset mode. (P 28)
- The frequency is set the inhibit frequency range. (P ii)

List of the Set Mode Functions

SET MODE Recall F + SET 0 Select the menu Select the function F +

★; can be stored in MY key. *E*:Function added during Expanded mode. (In Expanded mode, all Set modes can be used.)

Initial indication		Function			
StP Auto	★	Changing the frequency step. (P24)	OFF Pro	★ E	Setting the memory protect. (P37)
on AtmodE	★	Setting the Auto mode. (P24)	OFF rFSqL	★ E	Changing the RF-squelch level. (P30)
nor LAmP	★	Setting the lamp operation. (P22)	OFF Att	★ E	Setting the attenuate. (P30)
on bEEP	★	Turning the beep on/off. (P23)	nor nFm-S	★ E	Setting the proportion of activation of the signal mater. (P31)
OFF SA	★	Changing the Battery save time. (P25)	OFF mSm	★ E	Setting the memory scan memory. (P48)
OFF APO	★	Setting the auto power off. (P25)	OFF duAL	★ E	Setting the dual watch. (P50)
OFF rES	★	Setting the VFO reset. (P9)	FSt --u--	★ E	Changing the digit of Fast step. (P31)
on PrESEt	★	Switching the operation mode. (P28)	SwAP	E	Swapping the memory (P38)
OFF FLCH	★ E	Setting the channel for use in key lock (P29)	OFF m-bAC	★ E	Setting the return state of the VFO when in a memory frequency. (P38)
S dLAY	★ E	Changing the pause time. (P49)	0-A S0.000	★ E	Confirming the contents of the search band memory (P43)
OFF bCLEAr	★ E	Erasing the memory by the block (P37)	A Srh-b	★ E	Switching the Bank of the search band memory. (P43)
			000 Pri-no	E	Setting the priority memory for dual watch. (P50)

Relationship Between Frequency, Frequency Step and Reception Mode

- The frequency, frequency step and reception mode when in the Auto Step and Auto Modes are as shown in the following table. The greatest frequency of one range has a lower frequency value than the smallest frequency of the next range.

Frequency range	Frequency step	Reception mode
0.10~ 0.52 MHz	1 kHz	AM
0.52~ 1.62 MHz	9 kHz	AM
1.62~ 29.00 MHz	5 kHz	AM
29.00~ 35.53 MHz	10 kHz	FM
35.53~ 51.00 MHz	5 kHz	AM
51.00~ 54.00 MHz	20 kHz	FM
54.00~ 76.00 MHz	5 kHz	FM
76.00~ 108.00 MHz	50 kHz	WFM
108.00~ 136.05 MHz	25 kHz	AM
136.05~ 138.00 MHz	10 kHz	FM
138.00~ 142.00 MHz	25 kHz	AM
142.00~ 144.00 MHz	10 kHz	AM
144.00~ 146.00 MHz	20 kHz	FM
146.00~ 170.00 MHz	10 kHz	FM
170.00~ 225.00 MHz	50 kHz	WFM
225.00~ 250.40 MHz	100 kHz	AM
250.40~ 430.00 MHz	12.5 kHz	FM
430.00~ 440.00 MHz	20 kHz	FM
440.00~ 459.50 MHz	12.5 kHz	FM
459.50~ 464.80 MHz	25 kHz	WFM
464.80~ 470.00 MHz	12.5 kHz	FM
470.00~ 810.00 MHz	25 kHz	WFM
810.00~ 940.00 MHz	12.5 kHz	FM
940.00~1260.00 MHz	100 kHz	WFM
1260.00~1300.00 MHz	20 kHz	FM

Options

CLC400 ..... Soft case
CSK15 ..... Speaker
CSA401A ..... Rapid charger (120VAC type)
CSA401E..... Rapid charger (230VAC type)
CNB401 ..... Ni-Cd battery

Specifications

General

Frequency range	0.100 MHz - 1299.999 MHz
Speaker impedance	8 Ω
Antenna impedance	50 Ω
Antenna connector	BNC
Frequency Step	1 kHz, 5 kHz, 6.25 kHz, 9 kHz, 10 kHz, 12.5 kHz, 15 kHz, 20 kHz, 25 kHz, 30 kHz, 50 kHz, 100 kHz, AUTO
Number of memory	Memory 800 channels
	Search band memory 20 channels
	Search pass memory 90 channels
Operating voltage	2.2 - 3.5 VDC
Rated voltage	3.0 VDC
Applicable battery	AA-size manganese / alkaline / CNB401 optional battery pack
Current consumption	
In receiving	Approx. 125 mA (AF OUT 60 mW 8 Ω)
In waiting	Approx. 65 mA
At Battery save 1 second.	Approx. 16 mA
Dimensions	58 (W) x 97 (H) x 24 (D) mm (Not including projections)
Weight	Approx. 200 g (Including batteries and antenna)
Operating temperature	- 10 °C to + 60 °C

Receiver

Reception type	A3E (AM), F3E (WFM, FM)
Sensitivity	0.5 MHz to 5 MHz
	AM 1.5 µV (10 dB S/N)
	5 MHz to 160 MHz
	AM 1.0 µV (10 dB S/N)
	FM 0.5 µV (12 dB SINAD)
	WFM 0.7 µV (12 dB SINAD)
	160 MHz to 370 MHz
	AM 1.0 µV (10 dB S/N)
	FM 0.7 µV (12 dB SINAD)
	WFM 1.0 µV (12 dB SINAD)
	370 MHz to 520 MHz
	FM 0.5 µV (12 dB SINAD)
	WFM 1.0 µV (12 dB SINAD)
	520 MHz to 1299.995 MHz
	FM 1.0 µV (12 dB SINAD)
	WFM 1.0 µV (12 dB SINAD)
Audio out	Approx. 90 mW (8 Ω, 10 % distortion)

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