



# OPERATING MANUAL



- TETRA**
- P25**
- D-CR**
- DMR**
- NXDN**
- dPMR**
- D-STAR**
- YAESU**
- ALINCO**
- GSSI\***
- COSPAS-SARSAT\***
- \*Optional**



## DIGITAL VOICE RECEIVER

# AR-DV3

- 100 KHZ – 3000 MHZ**
- ANALOG & DIGITAL MODES**
- CYBER SEARCH – 600 STEPS/SEC**
- IMPROVED RF STAGE**
- IMPROVED AUDIO QUALITY**
- OPTIONAL 10.7 MHZ I.F. OUTPUT**
- OPTIONAL DIGITAL I/Q OUTPUT**
- USB AUDIO OUTPUT**
- ON-SCREEN AUDIO EQUALIZER**
- USB PD COMPATIBLE**



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# Introduction

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Thank you for purchasing the AR-DV3.

Before use, please read this instruction manual carefully so you can use the unit safely and comfortably.

This manual is made up of three sections: "Preparation Before Use," "Functions," and "Receiving." Each item lists a reference page number □□P\_\_.

## Key Features

### □ **Wide frequency coverage**

Receives 100 kHz to 3000 MHz in 10 Hz steps.

For 18 MHz and above, a dual-conversion superheterodyne system is used, ultimately converting to a 31 MHz intermediate frequency (IF) for reception. By switching the 1st IF appropriately, spurious responses are minimized and wideband, gap-free reception is achieved (except cell frequencies for the US consumer version).

### □ **Digital signal processing**

Across the entire receive range, incoming signals are digitized by high-speed sampling at about 40 MHz and decoded using a digital signal processor (DSP).

### □ **High-accuracy reference frequency**

The receiver's internal reference oscillator is a temperature-compensated 10 MHz source with  $\pm 1$  ppm accuracy for stable reception.

### □ **Supports all analog modes**

Supports CW / SSB / AM / SAM / FM. You can set the IF bandwidth for each mode.

### □ **Digital modes for decoding digital radio**

Supports many digital formats such as DMR / NXDN / TETRA used in amateur, business and professional radios. AR-DV3 features Digital Auto\*1, which automatically identifies the mode of the digital radio signals.

\*1 TETRA (T-TC, T-DM) is not supported.

### □ **USB-PD support**

In addition to the optional AC adapter, you can use an external power supply that supports the USB PD standard (15 V, min. 30W).

(Compatibility with all USB PD products is not guaranteed.)

### □ **SD card support**

You can record received audio with logs, save memory data and apply firmware updates.

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## Checking the Package Contents

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AR-DV3 main unit	1
Instruction manual	1

Available options:

(Some options may not yet be available at the time of the receiver's release.)

- AC power supply 100-240V "ATM024T-W120V" (supplied with pins for EUR/UK/US/AUS), providing a 12V DC output.
- Telescopic rod antenna "RA8600"
- 10.7 MHz IF output unit (bandwidth +/-2MHz) "IFDV3"
- Digital I/Q output module (bandwidth 300kHz) "IQDV3"
- TETRA GSSI user group filtering activation key "AKTT-0003"
- COSPAS-SARSAT beacon decoder activation key "AKCS-0003"
- Mobile mounting bracket "MMDV3"
- Galvanic Isolation Transformer "GT-1MK2"


## Safety Precautions — Be sure to read before use

To use this product safely, be sure to read the following.






It contains important information to prevent injury to you or others and damage to property, and to ensure correct and safe use.

Before using the unit, make sure you fully understand these precautions and follow them.

### About the pictograms

	DANGER	If handled incorrectly, this indicates an imminent danger that could result in death or serious injury.
	WARNING	If handled incorrectly, this indicates a potentially imminent situation that could result in death or serious injury.
	CAUTION	If handled incorrectly, this indicates possible injury and/or property damage.

### About the symbols

	Indicates a prohibited action.		Indicates that the power plug should be unplugged.
	Indicates a general instruction (an action to take).		Indicates "Do not disassemble."
	Indicates "Do not use near water."		

### Regarding received communications

The legal treatment of communications received by this device depends on the country or region in which the receiver is used. In many jurisdictions, telecommunications or radio laws prohibit the intentional interception of wireless communications intended for specific parties, as well as the disclosure, use, or exploitation of the existence or content of such communications without proper authorization. These regulations are designed to protect the privacy and confidentiality of communications. Users must not reveal the content or existence of intercepted communications to third parties, nor take any action based on such information, if doing so would violate the laws or regulations applicable in their country or region of use.

When operating this device, users are responsible for understanding and complying with all relevant local laws and for using the equipment only within legally permitted limits.

## Safety Precautions — Be sure to read before use



### DANGER

	Do not disassemble or modify the unit. It may cause heating, fire, or damage.
	Turn the power off in locations where use is prohibited, such as on aircraft. It may affect electronic devices and medical equipment.
	Do not use the unit in places where there is a risk of fire or explosion. Using it where flammable gas is present may cause ignition.
	When installing in a vehicle, do not mount it near airbags or where it could interfere with driving. Doing so may cause unexpected accidents or injury.



### WARNING

	If there is an abnormality such as smoke or a strange smell, unplug the power plug immediately and contact your AOR dealer.
	Do not use the unit where it may get wet. It may cause malfunction.
	Set the volume to an appropriate level. While driving, it may make it hard to hear surrounding sounds and could cause an accident. When using earphones, it may also cause hearing damage.

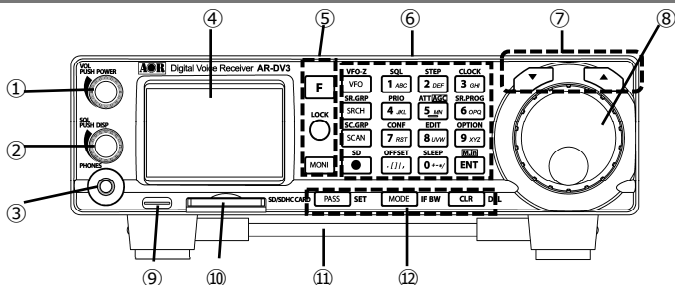



### CAUTION

	Keep out of reach of small children. It may cause injury.
	Do not place the unit in humid or dusty locations. It may cause fire or malfunction.
	Do not place the unit in direct sunlight or near heat sources. It may deform and cause malfunction.
	Do not wipe the unit with thinner, benzene, etc. It may cause deterioration or peeling of the coating. If dirty, wipe with a dry, soft cloth.

# Parts and controls

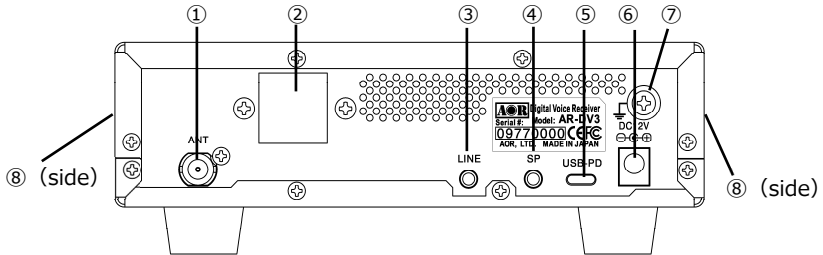
## Front










①	[VOL][POWER] knob	Press: power ON; press and hold: power OFF; turn: adjust volume <input type="checkbox"/> P15, 19
②	SQL/MONI	Turn: adjust squelch level; adjust RF GAIN (AGC OFF) <input type="checkbox"/> P20, 29 Press: display the current volume and squelch level Press and hold: switch squelch operation (VSQ/LSQ/AUTO) <input type="checkbox"/> P20
③	PHONES (φ3.5 stereo)	Use this when using earphones. <input type="checkbox"/> P12 Stereo jack, mono output – sound is output from both left and right.
④	Display	Shows the operating status of the unit. <input type="checkbox"/> P8 You can change the display color and brightness. <input type="checkbox"/> P18
⑤	[F] key	Use this when you want to use the function printed above each key. Press [F] first to enter Function mode. Example:  ATT = press [F], then [5] AGC = press [F], then press and hold [5]
	[LOCK] key	Disables all operations except volume and squelch. <input type="checkbox"/> P15
	[MONI] key	While held, opens the squelch so you can monitor audio.
⑥	[keypad] & Function keys (1)	Used to enter functions and frequencies. To use the functions printed at the top of each key, press [F] first. [VFO] VFO mode      [●] Record key [SRCH] Search mode    [ENT] MHz or Enter [SCAN] Scan mode
⑦	[UP/DOWN] keys	Used to move the cursor in menus and change frequencies.
⑧	[Dial]	Turn: change frequency and settings, switch memory channels, set the search/scan direction, and select items in menus. Press: set the digital mode
⑨	USB port	Command control, digital audio output, 12 kHz offset IF output <input type="checkbox"/> P13
⑩	SD CARD slot	Insert a standard-size SDHC card (32GB max.). To save recorded audio, memory data and do firmware updates. <input type="checkbox"/> P37–P41
⑪	Stand	Used to adjust the angle of the unit.
⑫	Function keys (2)	[PASS] Pass key    [MODE] Mode key [CLR] Clear key (cancel operation)

# Parts and controls

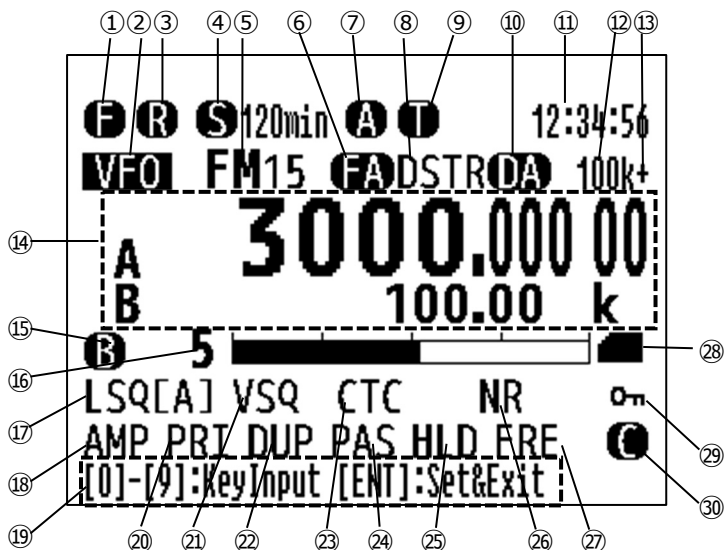
## Rear



①	ANT	Antenna terminal (BNC connector, 50 Ω)  P11
②	Option terminal	IF signal output terminal (BNC connector, 50 Ω)  P14
		Digital I/Q data output terminal (USB Type-C)  P14
③	LINE	Line audio output terminal  P13
④	SP	Audio output for an external speaker (φ3.5 mm stereo mini jack)
		Mono output  P12
⑤	USB PD	Power input terminal (USB PD 15V only, min.30W))  P10
⑥	DC12V	Power input terminal (DC 12V, min. 1A, φ5.5–2.1)  P10
⑦	Ground terminal (M4)	Connect an earth/ground wire to prevent electric shock and radio interference.
⑧	Mounting screw hole (side)	M4 × max. 10 mm

# Parts and controls

## Display



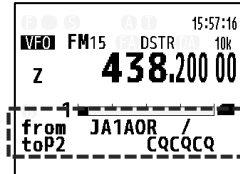
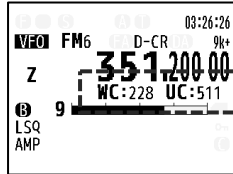
①	Function mode	<input type="checkbox"/> P6
②	Receive mode display	<input type="checkbox"/> P49
③	Ⓜ Recording / Ⓟ Playback	<input type="checkbox"/> P38
④	Sleep timer remaining time	<input type="checkbox"/> P45
⑤	Demodulation mode / IF bandwidth	<input type="checkbox"/> P23
⑥	FA Auto mode	<input type="checkbox"/> P22
⑦	Alarm	<input type="checkbox"/> P42
⑧	Digital demodulation mode	<input type="checkbox"/> P23
⑨	Timer recording	<input type="checkbox"/> P44
⑩	DA Digital Auto	<input type="checkbox"/> P22
⑪	Time display	<input type="checkbox"/> P16
⑫	Step frequency	<input type="checkbox"/> P24
⑬	Step adjust	<input type="checkbox"/> P25
⑭	Receive frequency display / Title	<input type="checkbox"/> P50
⑮	Busy / Squelch open	<input type="checkbox"/> P20
⑯	S-meter / Signal strength display	-

⑰	Squelch (SQ, LSQ, AUTO)	<input type="checkbox"/> P20
⑱	Attenuator / Amp	<input type="checkbox"/> P28
⑲	Operation navigation	-
⑳	Priority	<input type="checkbox"/> P32
㉑	Voice squelch	<input type="checkbox"/> P30
㉒	DUP Offset reception	<input type="checkbox"/> P33
㉓	CTC, DCS, VI, RTN (FM)	<input type="checkbox"/> P30
	AGC (AM, SSB, CW)	<input type="checkbox"/> P29
㉔	Pass frequency	<input type="checkbox"/> P34, 35
㉕	DELAY HOLD	<input type="checkbox"/> P53, 57, 67
㉖	Noise reduction	<input type="checkbox"/> P27
㉗	Free search	<input type="checkbox"/> P57
㉘	SD card	<input type="checkbox"/> P37
㉙	Key lock	<input type="checkbox"/> P15
㉚	Remote status	<input type="checkbox"/> P13

# Parts and controls

## Digital Radio Information Display

### Code/Slot Display



Display	Digital mode	Description
<b>WC</b> <b>UC</b>	DCR/NXDN	<ul style="list-style-type: none"> <li>Whitening code: 3 digits</li> <li>User code: 3 digits</li> </ul>
<b>RAN</b>	NXDN	<ul style="list-style-type: none"> <li>Radio Access Number: 2 digits</li> </ul>
<b>COL</b> <b>SLOT</b>	DMR	<ul style="list-style-type: none"> <li>Color code: 2 digits</li> <li>Slot number</li> </ul>
<b>NAC</b>	P25	<ul style="list-style-type: none"> <li>Network Access Code: 3 digits</li> </ul>
<b>SLOT</b>	T-TC	<ul style="list-style-type: none"> <li>TETRA slot number: 1–4</li> </ul>
<b>CAL</b> <b>RPT</b>	D-STAR	<ul style="list-style-type: none"> <li>Callsign</li> <li>Repeater / DIRECT (simplex)</li> <li>💡 You can show/hide this in OPTION menu "DIG, DECODE". 📄 P27</li> </ul>

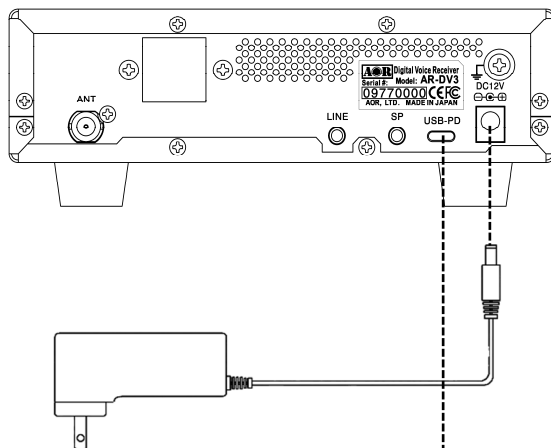
# Preparation Before Use

## ■ Basic connections

### Connecting an AC adapter

Connect the optional AC power supply 100-240V "ATM024T-W120V" or any compatible power supply of your choice.

Power specifications  P69



### Connecting a 3<sup>rd</sup> party USB PD power supply (not included)

- USB PD DC15V, 30W or higher required.



If both an AC power supply and a USB PD power supply are connected at the same time, the one with the higher voltage will be used as the power source.

- 💡 If you don't use the receiver for a long time, unplug the power supply from the outlet.
- 💡 For best reception performance, use a regulated/stabilized external DC supply.
- 💡 Vehicle/boat electrical systems can produce high-voltage transients and large voltage drops. Do not connect the unit directly; use an appropriate DC-DC converter of good quality.

We have not verified operation with every commercially available USB PD power supply.

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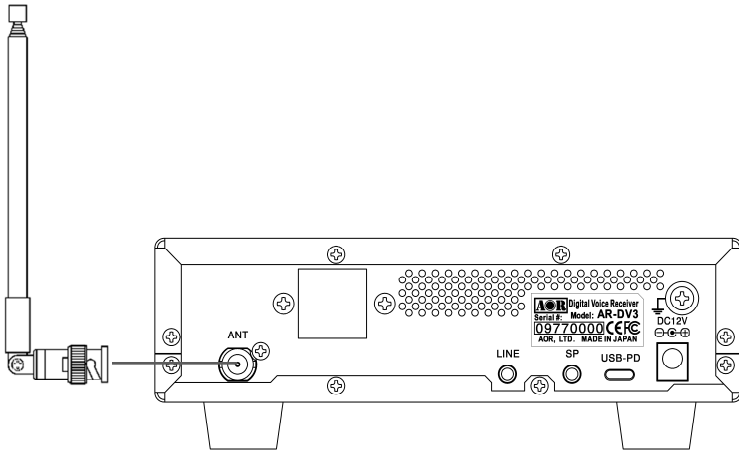
# Preparation Before Use

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## Connecting the Antenna

- Compatible connector: BNC

Connect the optional telescopic rod antenna “RA8600” or any compatible indoor/outdoor antenna of your choice.



Caution:

Antenna connection: The receiver's antenna terminal is delicate. Handle with care.

Please observe the following:

- The maximum input level is **+30 dBm (1 W)**. Strong signals above this level may damage the receiver's RF input/front-end circuitry.
- If there is a transmitting antenna nearby, keep the receiver's antenna sufficiently far away. Strong nearby transmissions may exceed the input rating and damage the RF input/front end.

# Preparation Before Use


## ■ Optional connections

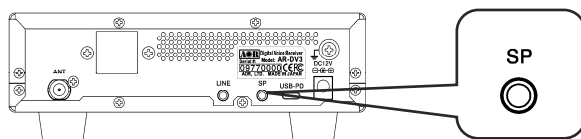
### Connecting an External Speaker (SP)

By connecting an external speaker to the rear SP jack, you can output received audio through the external speaker.

Adjust the volume with the [VOL] knob on the front panel.

When an external speaker is connected, audio output from the built-in speaker is muted. Also, when you connect headphones to the front panel's PHONES jack, audio output from both the built-in speaker and the external speaker is muted.

- Jack priority: PHONES > external SP > built-in speaker
- Compatible plug: 3.5 mm stereo (L channel only output / mono audio)
- Rating:  P69



### Connecting Earphones/Headphones (PHONES)

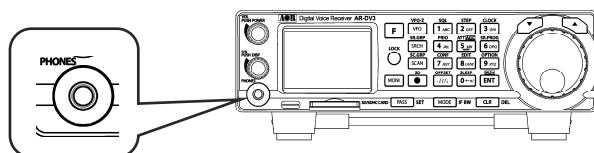
You can connect earphones to the front panel's PHONES jack.

Adjust the volume with the [VOL] knob.

When earphones are connected to the PHONES jack, audio output from the built-in speaker and external speaker is muted.

Jack priority: PHONES > external SP > built-in speaker

- Compatible plug: 3.5 mm stereo (L/R output / mono audio)

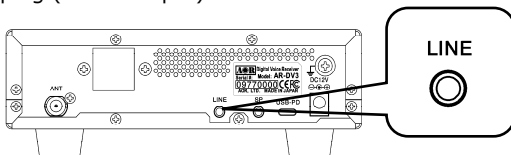




# Preparation Before Use

## Line Output (LINE)


Outputs the demodulated audio signal, or a 12 kHz offset IF signal.

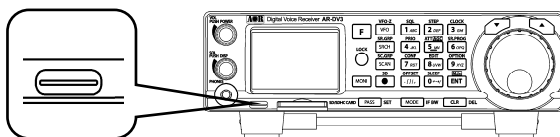
- Compatible plug: 3.5 mm stereo plug (mono output)
- Rating: -10 dBm, 600 Ω load  
Not linked to AF GAIN



- You can select the output in the config menu “LINE OUT”.  P18  
AUDIO (demodulated audio) ⇔ IF 12k (12 kHz offset IF output)
- You can set the IF12k gain in the config menu “IF 12k AGC”.  P18

## USB Port

- Outputs digital audio compliant with the “USB Audio” standard.  
With the config menu “LINE OUT” setting, you can select the output signal.  
AUDIO ⇔ 12 kHz offset IF output  P18
  - You can connect to a PC and control or program this unit with dedicated software.
- Compatible connector: USB Type-C



By connecting to a PC with a USB cable, you can control or program this unit with dedicated software.

During remote control, a “C” mark appears on the screen.

During remote control, all operations except volume and squelch are disabled.

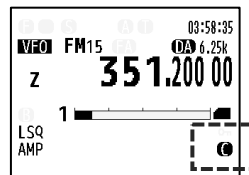
To exit remote control, press [ENT].

💡 There are no special conditions to output the 12 kHz offset

IF signal. However, if you set IFBW to 30 kHz or wider, the signal may become distorted.

💡 The 12 kHz offset IF signal is used with some third-party software.

💡 When connected to a PC, noise may occur in the received audio. This is not a malfunction.



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# Preparation Before Use

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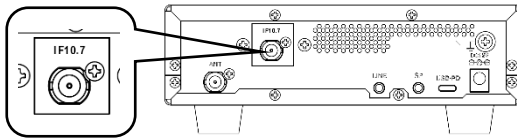
## IF Output (Option "IFDV3")

You can output the analog intermediate frequency (10.7MHz IF) signal of the received signal to external equipment. Bandwidth +/-2MHz.

Use this to connect devices that require an IF signal, such as a spectrum analyzer or external demodulator.

There are no settings on this unit. It is output simply by connecting.

- Compatible connector: BNC-P



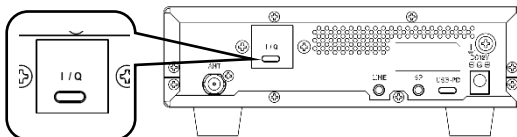
## I/Q OUT Output (Option "IQDV3")

You can output digital I/Q data that can be decoded with Airspy's SDR# software.

The I/Q signal is the received radio signal digitized into I (in-phase) and Q (quadrature) components and can be used for demodulation and analysis with external software.

Bandwidth 300kHz.

- Socket: USB Type-C port (USB 2.0 / Hi-Speed data)



\* Terminal specifications and the contents of this page are subject to change.

# Preparation Before Use

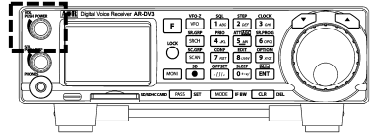
## ■ Basic Operations

### Turning the Power On

#### Procedure

- 1 Press the [POWER] knob.

The start-up screen appears and the unit boots.



### Turning the Power Off

#### Procedure

- 1 Press and hold the [POWER] knob.

The current settings state is saved and the unit shuts down.

💡 If the “PROTECT” function is ON, the current state is not saved.  P18,  P48

💡 If you disconnect external power without shutting down first, the current state will not be saved.

💡 Do not disconnect external power during the start up or shut down procedure.

### Key Lock

Disables all operations except volume and squelch.

#### Procedure

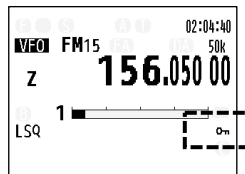
- 1 Press and hold [LOCK].

The key lock icon appears.

Releasing Key Lock

Press and hold [LOCK].

The key lock icon disappears.



💡 While key lock is active, you cannot operate the power. To turn the power off, release key lock first.

# Preparation Before Use

## ■ Initial Settings

### Setting the Time and Date (CLOCK)

#### Procedure

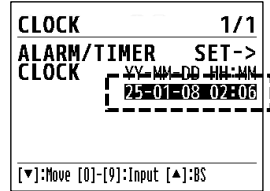
- 1 Press [F] → [3] to display "CLOCK".
- 2 Press [DOWN] to move the cursor to "CLOCK".
- 3 Using the keypad, enter Year → Month → Day → Hour → Minute.

Example: for 18:00 on Feb 15, 2026

Enter in this order: [2][6][0][2][1][5][1][8][0][0].

- 4 Press [ENT] to confirm.

The clock starts running.



💡 The clock is used not only for time display, but also for the alarm and timer functions.

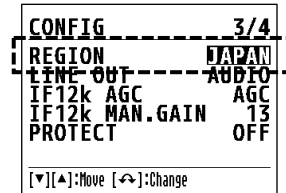
### Setting the User Region

Set the region where you will use the unit.

- USA, JAPAN, EURO

This affects the band plan in Auto Mode (F-AU).

Be sure to check this so you can receive properly with the appropriate settings.



#### Procedure

- 1 Press [F] → [7] to display "CONFIG".
- 2 Press [UP/DOWN] to move the cursor to "REGION".
- 3 Turn the dial to select the region.
- 4 Press [ENT] to confirm.

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# ◆ ◆ Functions

(For “Receiving” see □P49)

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<b>Basic Functions</b>	
■ Configuration menu	□P18
■ Adjusting volume	□P19
■ Checking current volume and squelch values	□P19
■ Adjusting squelch	□P20
■ Select the squelch type	□P20
■ Set the receive frequency	□P21
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■ Digital auto mode	□P22
■ Select the demodulation mode	□P23
■ Select the IF bandwidth	□P23
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■ Setting and canceling step adjust	□P25
■ Selective receive functions for digital radio	□P26
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■ Attenuator and RF amplifier	□P28
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■ Reset and recovery	□P47
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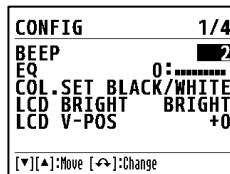
# Functions – Basic

## Configuration Menu (CONFIG)

Here you can set the unit's basic functions.

### Procedure

- ❶ Press [F] → [7] to display "CONFIG".
- ❷ Press [UP/DOWN] to select an item.
- ❸ Turn the [DIAL] to change the value.
- ❹ Press [ENT] to confirm.



BEEP	Beep volume for operation: OFF, 1-7
EQ	Audio equalizer function <input type="checkbox"/> P36
COL. SET	Display color settings
LCD BRIGHT	Display brightness: BRIGHT/DARK
LCD V-POS	Vertical display position: -3 to +2
KEY LIGHT	Key backlight: OFF / CONT (always on) / AUTO (lights when operated or when squelch opens; turns off after about 7 seconds)
KEY COLOR	Key backlight color: OFF / choose from 6 colors
KEY DIMMER	Key backlight dimming: OFF / ON (dim)
SQL. SKP	Squelch skip setting <input type="checkbox"/> P38
ID	Receiver ID for remote control: 00-99
RES. CODE	Add result codes during remote control: ON / OFF
REGION	Region for frequency auto mode: USA, JAPAN, EURO <input type="checkbox"/> P16
LINE OUT	LINE and USB output setting <input type="checkbox"/> P13 Select output: AUDIO ↔ 12 kHz offset IF output
IF12k AGC	Gain setting for 12 kHz offset IF output <input type="checkbox"/> P13 AGC = auto gain, MAN. = manual gain
IF12k MAN.GAIN	Gain value when MAN. is selected in IF12k AGC: 00-25 <input type="checkbox"/> P13
PROTECT	Last-one function: OFF = enabled, ON = disabled <input type="checkbox"/> P48
TETRA ACTIV.	Activation for TETRA GSSI selection feature
SER	Display the receiver's serial number
FIRM VER	Display firmware version
SYS. UPDATE	Firmware update <input type="checkbox"/> P46

# Functions – Basic

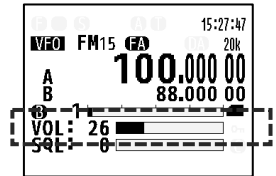
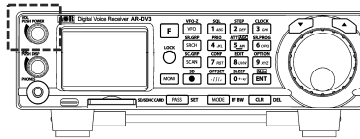
## Adjusting Volume (AF GAIN)

- Volume level: 0-99

### Procedure

- 1 Turn the [VOL] knob.

The volume value is displayed on the screen.



💡 Volume adjustment applies to the built-in speaker, the headphone jack, and the external speaker jack.

The LINE output level and recording level do not change.

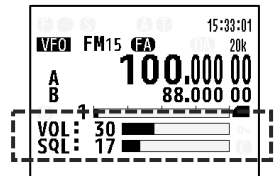
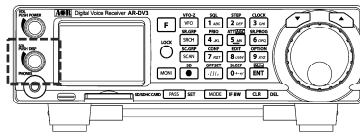
## Checking the Current Volume and Squelch Values (DISP)

### Procedure

- 1 Press the [SQL] knob.

The current values and bar indicators are displayed on the screen.

The display disappears after a few seconds.



# Functions – Basic

## Adjusting Squelch (SQL)

This function mutes the noise that occurs when there is no signal.

It can be used in common in “VFO mode”, “Search mode”, and “Scan mode”.

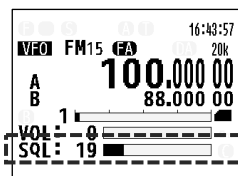
When squelch mutes the audio, it is called “squelch closes”; when audio comes out, it is called “squelch opens”.

In scan/search mode, when a signal stronger than the squelch value is received, the unit judges that there is a signal and outputs audio.

■ Squelch level: 0–99

### Procedure

- 1 Turn the [SQL] knob clockwise until the noise disappears. The squelch value is displayed on the screen.



## Selecting the Squelch Type

Select the squelch type.

### LSQ Level Squelch

Mutes the audio when the signal strength falls below the set value.

Because it uses signal strength as the criterion, operation is stable.

### NSQ Noise Squelch

Mutes the audio by judging the amount of noise.

Effective in FM mode because it automatically mutes the audio when noise is high.

### AUTO (Automatic)

NSQ is selected for FM, and LSQ is selected for CW, SSB, and AM.

Digital modes operate as FM, so NSQ is used.

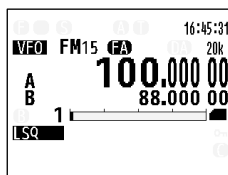
### Procedure

- 1 Press and hold the [SQL] knob to invert the SQL display.
- 2 Turn the [SQL] knob or the dial to select either: [LSQ], [NSQ] or [AUTO].

When the demodulation mode is FM, AUTO selects NSQ.

For analog modes other than FM and for digital modes, AUTO selects LSQ.

- 3 Press the [SQL] knob to confirm.



💡 There are other squelch functions as well. 📖 P30

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# Functions – Basic Functions

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## Setting the receive frequency

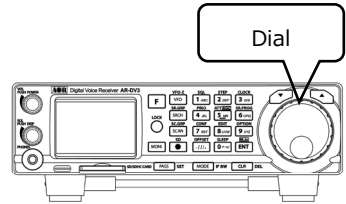
In VFO mode, the frequency changes in step increments. Step frequency □P24.

### Change with the dial

#### Procedure

Turn the dial clockwise; the frequency increases.  
Turn it counterclockwise; the frequency decreases.

After pressing [F], turning the [Dial] increments ten times faster.

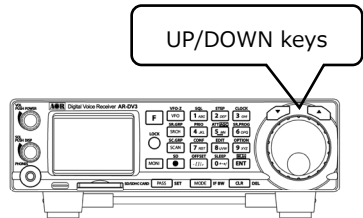


### Change with the UP/DOWN keys.

#### Procedure

Press [UP] to increase the frequency.  
Press [DOWN] to decrease the frequency.

After pressing [F], pressing [UP/DOWN] increments ten times faster.



### Enter the frequency using the keypad

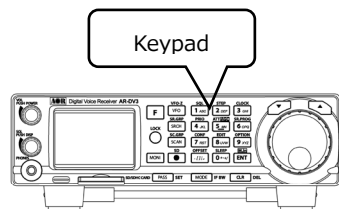
#### Procedure

Example: entering 82.500MHz

Press [8][2][.][5][ENT] in order.

Example: entering 594kHz

Press [0][.][5][9][4][ENT] in order. (You can omit the leading 0.)



💡 While entering a frequency, press [UP] to delete the last digit.

## Functions – Basic Functions

### Auto mode (F-AU)

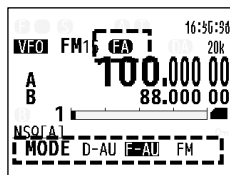
The following items are set automatically according to the receive frequency.  
Applies to analog demodulation modes only.

- Auto mode setting items
- Demodulation mode
- IF bandwidth
- Step frequency
- Step adjust
- Offset reception

#### Procedure

- 1 Press [MODE] to open the “MODE” selection menu.
- 2 Turn the [Dial] to select “F-AU”.
- 3 Press [ENT] to confirm.

The “FA” icon appears.



The automatic settings vary depending on the “region setting”. [P16](#)

If you change the IF bandwidth, step frequency, demodulation mode, etc., Auto mode is disabled.

### Digital auto mode (D-AU)

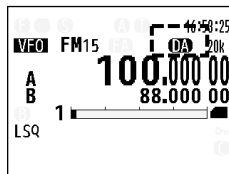
When a digital signal is received, the demodulation mode is automatically selected.  
Use this when you do not know in what digital mode a signal is transmitted.

💡 TETRA (T-DM, T-TC) is not automatically detected and needs to be set manually.

#### Procedure

- 1 Press and hold [MODE].
- Or select “D-AU” from the “MODE” selection menu.

The “DA” icon appears.



💡 Depending on reception conditions or noise, the unit may not be able to identify the digital mode. In that case, set the demodulation mode manually.

💡 Digital systems not supported by this unit cannot be identified.

# Functions – Basic Functions

## Selecting the demodulation mode (MODE)

Set the modulation/demodulation mode correctly for the band you are receiving.

For analog, you can select the mode manually or use Auto mode “F-AU”.

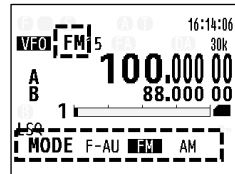
For digital, you can select the mode manually or use Digital Auto mode “D-AU” to identify the mode.

### Types of demodulation modes

- Analog modes: CW, LSB, USB, AM, SAH, SAL, FM, F-AU
- Digital modes: DSTAR, YAES, DMR, D-CR, dPMR, P25, ALIN, T-DM, T-TC, D-AU

#### Procedure

- 1 Press [MODE] to open the “MODE” selection menu.
- 2 Turn the [Dial] to select the demodulation mode.
- 3 Press [ENT] to confirm.



## Selecting the IF bandwidth (IF BW)

Select the width of the IF (intermediate frequency) bandpass filter.

Choose the optimum bandwidth for the band and mode to avoid interference or distortion.

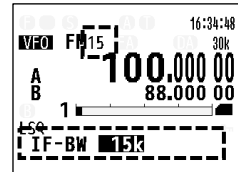
If you prefer sound quality, selecting a wider bandwidth gives more natural audio.

#### Procedure

- 1 Press [F]→[MODE] to open the “IFBW” selection menu.
- 2 Turn the [Dial] to select the IF bandwidth.
- 3 Press [ENT] to confirm.

💡 In Auto mode (F-AU), this is set automatically.

💡 Changing the setting cancels Auto mode (F-AU).



#### ■ Demodulation mode and IF bandwidth combinations

Demodulation mode (MODE)	IF bandwidth (IFBW)
CW	200Hz, 500Hz (pitch fixed at 600Hz)
SSB (LSB, USB)	1.8kHz, 2.6kHz
AM	3.8kHz, 5.6kHz, 8kHz, 15kHz
SAH, SAL	3.8kHz, 5.6kHz
FM	6kHz, 15kHz, 30kHz, 100kHz, 200kHz
Digital modes	Automatic

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## Functions – Basic Functions

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### Selecting the step frequency

The amount the frequency changes each time is called the “step”.

Frequency bands are allocated in fixed step increments. If the step is not set correctly, sweeping a band will not land on valid channel frequencies and you may not be able to receive.

In VFO mode, this is the increment when you turn the [Dial] or press [UP/DOWN].

In Search mode, the step is set when registering a search bank.  P55



The receive frequency must be divisible by the step size.

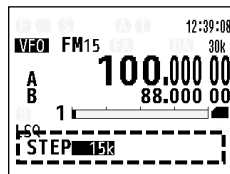
If it is not divisible, you must set Step Adjust.  P25

Example: 433.200 MHz / 20 kHz (divisible).

148.010 MHz / 20 kHz (not divisible) → Step Adjust required.

#### Procedure

- 1 Press [F]→[2] to open the “STEP” selection menu.
- 2 Turn the [Dial] to select the step frequency.
- 3 Press [ENT] to confirm.



💡 Step frequency is selected from presets. You cannot enter a value directly using the keypad.

💡 In Auto mode “F-AU”, some bands are set automatically.

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# Functions – Basic Functions

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## Step adjust (STEP ADJ)

Radio frequencies are assigned in fixed intervals. However, some bands use special allocations that are not divisible by the normal step size.

To receive frequencies with such special allocations, you need to set Step Adjust.

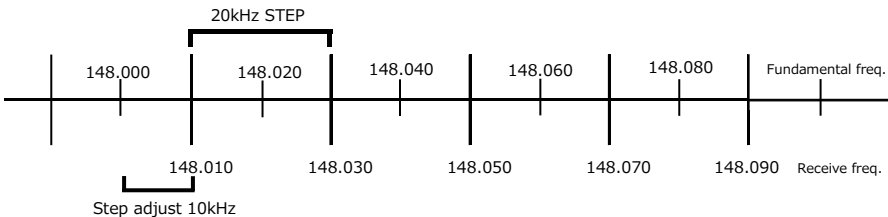
💡 This unit's Step Adjust can be set only up to half of the step frequency.

Therefore, some frequencies may not be supported even with Step Adjust.

Example: for 145.210 MHz, 20 kHz step is possible; 15 kHz step is not.

For example, 148.010 MHz → 148.030 → 148.050 → 148.070 → 148.090, etc.

To receive using a 20 kHz step, a 10 kHz step adjust is required.

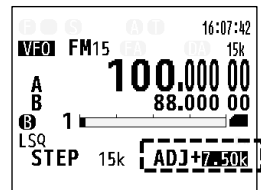


## Setting and canceling step adjust

### To set

#### Procedure

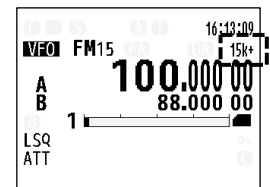
- 1 Press [F]→[2] to open the "STEP" selection menu.
- 2 Press [PASS]; "ADJ" appears.  
(The initial value shown is half of the step frequency.)
- 3 Turn the [Dial] to select the adjust value.
- 4 Press [ENT] to confirm.



### To cancel

#### Procedure

- 1 Press [F]→[2] to open the "STEP" selection menu.
- 2 Press [PASS]; "ADJ" appears.
- 3 Turn the [Dial] to set the adjust value to 0.
- 4 Press [ENT] to confirm.



The + sign indicates that step adjustment is being applied.

## Functions – Basic Functions

### Selective receive functions for digital radio

In digital demodulation modes, you can use the selective receive functions below.

#### Procedure

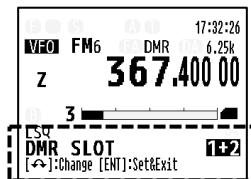
Select the digital demodulation mode you want to receive.

❶ Press the [Dial] to show the selective receive function at the bottom of the screen.

Each time you press the [Dial], the selective receive function changes.

❷ Press [UP/DOWN] to choose a digit, then enter the code with the keypad, or turn the dial to select.

❸ Press [ENT] to confirm.



Demodulation mode	Selective receive function	Description / operation
DC-R	ENC. CODE	15-bit scramble code Select from 0000–32768. • Enter the code Audio is output normally when the code matches.
	WC	Select a whitening code from 000–511. • Enter the code Audio is output when the code matches. • 000 = identified automatically.
	NXDN RAN	Select the Radio Access Number (RAN). • OFF = no selection / ON = select 00–64 Outputs audio only when the code matches.
DMR	SLOT	Select the time slot. Outputs audio only when the slot matches. • 1 = SLOT1 only • 2 = SLOT2 only • 1+2 = prioritize SLOT1 • 2+1 = prioritize SLOT2
	COLOR	Select the color code. • OFF = no selection / ON = select 0–15 Outputs audio when the code matches.
P25	NAC	Select the Network Access Code (NAC). • OFF = no selection / ON = select 000–FFF Outputs audio only when the code matches.
T-TC	SLOT	Select the time slot. Outputs audio only when the slot matches. • AUT = selected automatically • Slot selection: 1–4

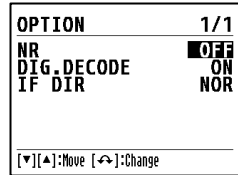
# Functions – Basic Functions

## Option selections (OPTION)

These settings can be made separately for each VFO mode, search bank, and memory channel.

### Procedure

- ❶ Press [F] → [9] to open the option menu screen.
- ❷ Press [UP/DOWN] to select an item.
- ❸ Turn the [Dial] to change the setting.
- ❹ Press [ENT] to confirm.




Item	Description
NR	Noise reduction: removes random noise. Setting range: OFF/LOW/MID/HIGH
DIG. DECODE	Whether to display amateur radio (D-STAR) info when receiving in digital mode Setting range: ON/OFF You can also toggle ON/OFF by pressing and holding the frequency Dial.
IF DIR	Specify the IF direction for this unit. Setting range: NOR/REV Used when feeding an IF signal received by another receiver into this unit's antenna jack for digital decoding. If it does not decode properly, try changing this setting.

# Functions – Basic Functions

## Attenuator and RF amplifier (ATT, AMP)

Use the attenuator and RF amplifier depending on the strength of the received signal.

- Can be set for each VFO mode and each memory channel.
- 💡 In Search mode, set this in the search bank registration. 

### Attenuator (ATT)

It reduces overly strong signals to prevent distortion and interference.

Using it can improve reception, especially when a large outdoor antenna is used.

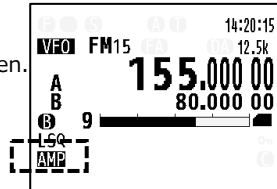
### RF amplifier (AMP)

It amplifies the signal level.

Use this when the receive level is low.

#### Procedure

- ➊ Press [F] → [5] to highlight the lower-left area of the screen.
- ➋ Turn the [Dial] to select.
- ➌ Press [ENT] to confirm.



💡 Signal strength becomes weaker in the order “AMP (boost) > OFF > ATT (attenuate)”. Switch as appropriate for your receiving environment.

Available settings	
[AMP]	Approx. 14 dB gain. Only available for receive frequencies of 18 MHz or higher
[ ]	OFF
[ATT]	Approx. 20 dB attenuation

# Functions – Basic Functions

## AGC (Automatic Gain Control)

AGC controls gain according to the input signal strength to keep the volume constant.

- Relevant receive modes
- AM, SSB (LSB/USB), CW

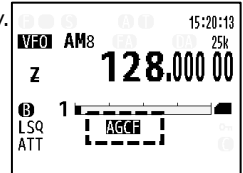
AGC setting adjusts the AGC release time (how long it takes to recover the reduced gain). If the time is too fast, gain rises during silent parts of SSB or between CW elements, making noise more noticeable. If it is too slow, gain may not recover in time, and you may miss the next signal.

💡 In Auto mode “F-AU”, it is set automatically.

Available settings
AGCF = Fast
AGCM = Medium
AGCS = Slow
RF-G = Manual RF gain (AGC OFF)

### Procedure

- ➊ Press [F], then press and hold [5] to highlight the AGC display.
- ➋ Turn the [Dial] to select.
- ➌ Press [ENT] to confirm.



## RF GAIN

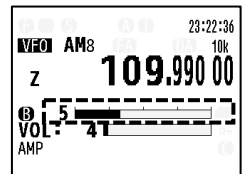
This is available when “RF-G” is selected in the AGC settings above.

The S-meter switches to an RF gain display.

### Procedure

- ➊ Turn the [Squelch] knob.

The RF gain value changes.



💡 In “CW” or “SSB”, lowering the gain may reduce noise and make it easier to listen. Adjust according to reception conditions.

# Functions Advanced Functions

## Extended squelch functions

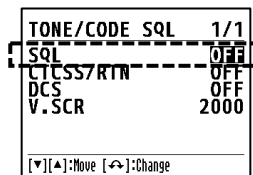
In addition to the normal squelch, there are special squelch functions.

- Conditions: FM mode; IF bandwidth (IFBW) 6 kHz or 15 kHz

Type	Description
CTCSS (tone squelch)	Outputs audio only when the tone matches. Includes a search function to detect the tone.
RTN (reverse tone squelch)	Mutes audio while the tone is detected.
DCS (digital code squelch)	Individual calling function
V. SCR (voice scrambler)	Restores inverted (scrambled) audio back to normal.

### Procedure

- 1 Press [F] → [1] to display TONE/CODE SQL.
- 2 At "SQL", turn the [Dial] to select the squelch type to use.  
(See the table above.)

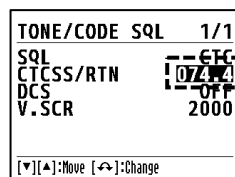


- 3 Press [DOWN] to move the cursor to the selected squelch.  
Turn the [Dial] to change the tone/code value.

- 4 Press [ENT] to confirm.

Only the one squelch type selected in "SQL" operates.

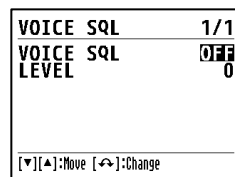
You cannot use multiple squelch functions at the same time.



### Voice squelch (VOICE SQL)

A squelch that responds to voice. It opens when there is voice and closes when the voice stops.

- LEVEL: 0-7



### Procedure

- 1 Press [F], then press and hold [1] to display the VOICE SQL screen.
- 2 In VOICE SQL, turn the [Dial] to set it to ON.
- 3 Press [DOWN] to move the cursor to LEVEL.

- 4 Set the voice level value at LEVEL.

The higher the value, the louder the voice must be for the squelch to open.

- 5 Press [ENT] to confirm.

# Advanced Features

## Extended Squelch Functions (continued)

### CTCSS/RTN Tone Frequency List (Hz)

60.0	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	120.0	123.0
127.3	131.8	136.5	141.3	146.2	151.4	156.7
159.8	162.2	165.5	167.9	171.3	173.8	177.3
179.9	183.5	186.2	189.9	192.8	196.6	199.5
203.5	206.5	210.7	218.1	225.7	229.1	233.6
241.8	250.3	254.1	SRCH			

SRCH: Searches for the tone frequency. Use this when the tone frequency is unknown.

### DCS Code List

017	023	025	026	031	032	036	043	047	050
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	SRCH			

SRCH: Searches for the DCS code. Use this when the code is unknown.

## V. SCR Frequency

Setting range: 2000–7000 Hz (10 Hz steps)

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## Advanced Features

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### Priority Receive (PRIO)

Even while receiving on another frequency, the receiver checks the priority channel at the specified interval.

If a signal is found on the priority channel, it will keep receiving that channel with priority. When the signal disappears, it returns to interval checking.

Select one memory channel to use as the priority channel.

💡 Registering memory channels  P63

#### Register a Priority Channel

■ Max registrations: 1 ■ Interval: 1–99 s ■ Delay: OFF, 0.1–9.9 s

#### Procedure

① Press [F], then press and hold [4] to display the Priority settings screen.

② Press [UP/DOWN] to select an item.

● 00-00

Select the memory channel you want to use as the priority channel.

● **DELAY:** Set the time before returning after the priority channel signal disappears.

● **INTERVAL:** Set the time interval for checking the priority channel.

③ Press [ENT] to confirm.

<b>PRIORITY</b>	1/1
<b>02-02</b>	0131.87500
<b>DELAY</b>	OFF
<b>INTERVAL</b>	05
[▼][▲]:Move [0]-[9]:Input	

#### Start Priority Receive

■ Works in all modes: each VFO, VFO Search, Search mode, and Scan mode.

#### Procedure

① Press [F] → [4].

● “PRIO” appears and Priority Receive starts.

● Press [F] → [4] again to cancel.

16:21:56	
VFO AM8	25k
Z	128.000 00
LSQ _____ AGCF	
[ ] PRI [ ]	

💡 If the squelch is not set properly, Priority Receive will not work correctly.

💡 Noise may occur when the frequency switches during Priority Receive, this is not a malfunction.

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# Advanced Features

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## Offset Receive (OFFSET)

This function lets you quickly switch and check receive frequencies when receiving duplex (DUPLEX) or repeater communications where the base and mobile stations use different frequencies.

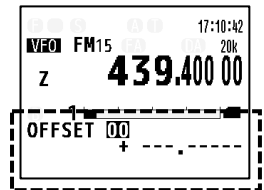
Press and hold [MONI] to receive on the offset frequency.

### Offset Receive Settings

- Maximum offset:  $\pm 500$  MHz

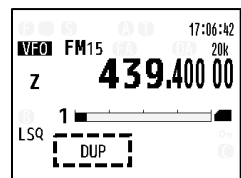
#### Procedure

- 1 Press [F] → [.] to display the Offset menu at the bottom of the screen.
- 2 Turn the [DIAL] to select an offset number.
  - OFFSET 00: Off
  - OFFSET 01–19: User-editable.  
Enter the offset frequency using the keypad.
  - OFFSET 20–39: Preset and cannot be changed.
- 3 Press [PASS] to change the offset direction (+/-).



- 4 Press [ENT] to confirm.

When Offset Receive is enabled, “DUP” appears on the display.



### Use Offset Receive

#### Procedure

- 1 Press and hold [MONI].  
The offset frequency will be received.
- 2 Release [MONI] to return to normal reception.

💡 While holding [MONI], the squelch is opened.

💡 In frequency ranges where Offset Receive is set automatically in Frequency Auto mode “F-AU”, changing the Offset Receive settings will not take effect. If you want to change it, select a mode other than Frequency Auto.

# Advanced Features

## Search Pass

(Search / VFO Search)

During Search or VFO Search, you can register frequencies you don't want to stop on (such as noise or unwanted signals) as Pass frequencies.

This makes searching more efficient.

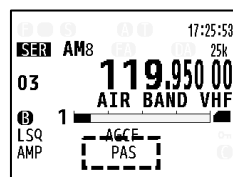
- Search Pass capacity
- Search: Up to 50 per bank
- VFO Search: Up to 50

### Register a Search Pass

#### Procedure

- 1 When it stops on an unwanted frequency, press [PASS].  
From then on, it will not stop on that registered frequency anymore.

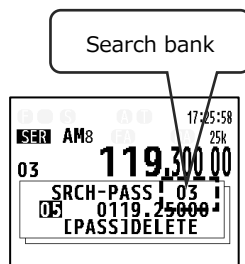
In Search or VFO Search, if at least one Pass frequency is registered, "PAS" is shown on the display.



### Delete a Search Pass

#### Procedure

- 1 In Search or VFO Search mode, press and hold [PASS] to display the DELETE menu.
- 2 (Search only) Turn the [DIAL] to select the search bank.
- 3 Press [DOWN].
- 4 Turn the [DIAL] to select the Pass frequency you want to delete.
- 5 Press [PASS] to delete.



### Delete Search Passes (by bank)

#### Procedure

- 1 In Search or VFO Search mode, press and hold [PASS] to display the Delete menu.
- 2 (Search only) Turn the [DIAL] to select the search bank.
- 3 Press [F] → [PASS] to delete.

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# Advanced Features

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## Memory Channel Pass

### (Scan / Memory Channel)

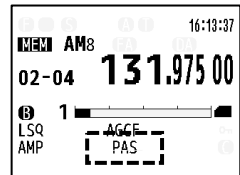
During scanning, you can register channels you don't want to stop on (noise or unwanted signals).

A memory channel registered as Pass will be skipped next time and the scan will not stop on it anymore.

### Register a Memory Channel Pass

#### Procedure

- 1 Press [SCAN] to enter Memory Channel Recall mode or Scan mode.
- 2 Select the channel you want to register as a Pass channel.



- 3 Press [PASS].

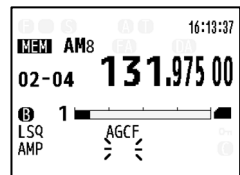
- In Memory Recall mode "MEM", Pass-registered channels are still displayed.
  - In Scan mode (SCN), Pass-registered channels are not displayed.
- 💡 Each press of [SCAN] changes the mode: "VFO" → "MEM" → "SCN".

### Delete a Memory Channel Pass

#### Procedure

- 1 Press [SCAN] to enter Memory Channel Recall mode.
- 2 Select the memory channel you want to unskip (remove Pass).
- 3 Press [PASS].

Pass is canceled and the "PAS" indicator disappears.



- 💡 Memory channel Pass registration is done per channel.

You cannot cancel Pass settings by bank.

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# Advanced Features

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## Audio Equalizer (EQ)

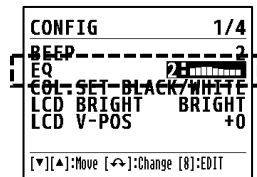
You can adjust the audio characteristics of sound received in analog demodulation modes. You can customize by frequency band and save up to five presets.

- This function is shared across “VFO”, “Search”, and “Memory Channel” modes.

### Select an Audio Preset

#### Procedure

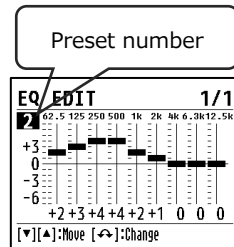
- 1 Press [F] → [7] to open the Config menu.
- 2 Press [DOWN] and select “EQ”.
- 3 Turn the [DIAL] to choose the audio preset you like.
- 4 Press [ENT] to confirm.



### Customize an Audio Preset

#### Procedure

- 1 Press [F] → [7] to open the Config menu.
- 2 Press [DOWN] and select “EQ”.
- 3 Press [8] to open the equalizer edit screen.
- 4 Turn the [DIAL] to select the preset number you want to edit.
- 5 Use [UP/DOWN] to move the cursor and choose the band you want to adjust.
- 6 Turn the [DIAL] to adjust the level.
- 7 Press [ENT] to save.



💡 Not supported in digital demodulation modes.

💡 With narrow audio-band communications such as SSB or AM, the equalizer effect may be limited.

# Advanced Features

## SD Card

The receiver can store and process following data on an SD card.

Data type	File extension
Recording	.WAV
Receive log	.WAV (included in the recording file)
Backup of memory data	.CSV
Firmware update	.DV3

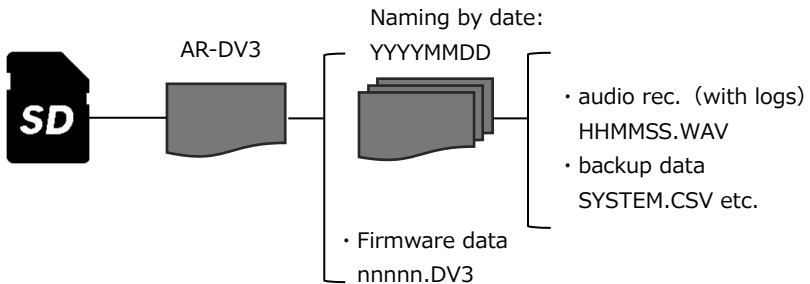
### ■ Supported media

- SDHC card (up to 32 GB)
- File system: FAT32

💡 Not sure if your card is properly formatted? Use the official “SD Memory Card Formatter” tool here: [www.sdcard.org/downloads/formatter/](http://www.sdcard.org/downloads/formatter/)

### SD Card Folder Structure

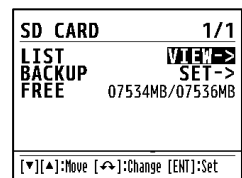
- When you insert an SD card into the unit, an “AR-DV3” directory (folder) is created automatically.
- When you record or back up, a date-named directory is automatically created under the AR-DV3 directory, and the data is saved inside it.
- Copy firmware files into the AR-DV3 directory.



### Check Data Saved on the SD Card

#### Procedure

- 1 Press [F] then [●] to display the SD card menu.
- 2 With “VIEW” selected, press [ENT] to display the data on the SD card.
- 3 Press [ENT] on a directory to view its contents.  
Press [PASS] to return to the previous screen.



- Play recorded audio P38
- Load backup data P40

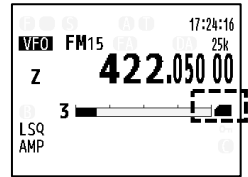
# Advanced Features

## SD Card Recording

You can record received audio to the SD card.

Recorded files can be played back on the unit or on a PC.

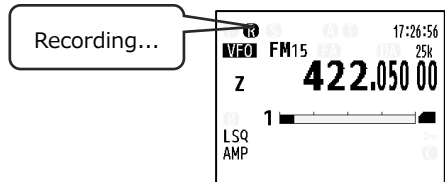
Insert the SD card into the unit's SD card slot. When it is recognized, the SD card icon appears.



### Record

#### Procedure

- 1 Press [●] to start recording.
- 2 Press [●] again to stop recording.



💡 Using the Squelch Skip function removes blanks without audio in recording. The recording is paused while the squelch is closed. P18

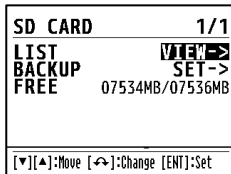
## Play a Recorded File (.WAV)

#### Procedure

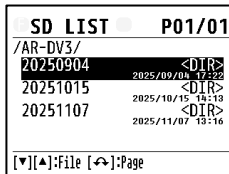
- 1 Press [F] → [●] to display the SD card menu.
- 2 Press [UP/DOWN] and select "LIST-VIEW".
- 3 Press [ENT] to display the SD LIST (directories).
- 4 Press [UP/DOWN] to select the desired directory (shown by creation date).
- 5 Press [ENT] to display the files in the directory.
- 6 Press [UP/DOWN] to select the "recording file .WAV".
- 7 Press [ENT] to play.

Press [CLR] to stop playback.

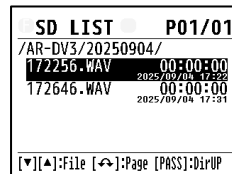
1 2



3 4



5 6



[PASS] to return to directory selection

💡 The SD card list also shows backup data (.CSV). P40

# Advanced Features

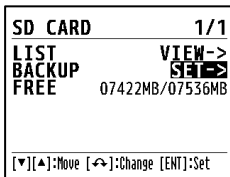
## Back Up Memory Data

You can save data registered in the unit—such as search banks and memory channels—to an SD card.

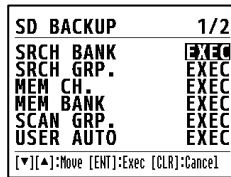
### Procedure

- ❶ Press [F] → [●] to display the SD CARD menu.
- ❷ Press [UP/DOWN] and select “BACK UP-SET”.
- ❸ Press [ENT] to display “SD BACKUP”.
- ❹ Press [UP/DOWN] to select the backup type you want (see the table below).
- ❺ Press [ENT] to start the backup.

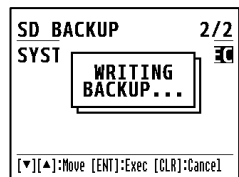
❶❷



❸❹



❺



Backup type (.CSV)	Description
SRCH BANK	All search bank data
SRCH GRP.	All search group settings
MEM CH.	All memory channel data
MEM BANK	All memory bank data
SCAN GRP	All scan group settings
USER AUTO	User data for Frequency Auto (F-AU)
<b>SYSTEM(ALL)</b>	<b>All data in the unit (including memory data)</b>

💡 Do not turn off the power while backup data is being written to the SD card.

💡 To protect against SD card data corruption or human error, we recommend backing up regularly to another media.

# Advanced Features

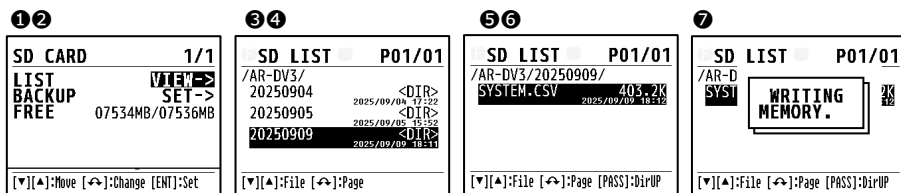
## Load Backup Data

You can load backup data saved on the SD card to restore settings and memory data.

Insert the SD card that contains the backup data into the receiver's SD card slot.

### Procedure

- 1 Press [F] → [●] to display the SD card menu.
- 2 Press [UP/DOWN] and select "LIST-VIEW".
- 3 Press [ENT] to display "SD LIST".
- 4 Press [UP/DOWN] to select the directory for the saved date.
- 5 Press [ENT] to display the data in the directory.
- 6 Press [UP/DOWN] to select the backup data (.CSV).
- 7 Press [ENT] to start restoring.



- 💡 Do not turn off the power while data is being loaded.
- 💡 Loading data will overwrite the unit's current data.

# Functions — Advanced Features

## Deleting data on the SD card

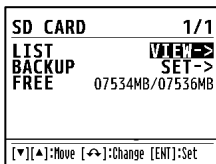
You can delete files (.CSV/.WAV) recorded on the SD card, as well as directories.

### Procedure

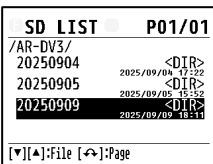
- 1 Press [F] then [●] to display "SD CARD".
- 2 Press [UP/DOWN] and select "LIST-VIEW".
- 3 Press [ENT] to display "SD LIST".
- 4 Press [UP/DOWN] and select the directory that contains the file you want to delete.
- 5 Press [ENT] to show the list of data in the directory.
- 6 Press [UP/DOWN] and select the data (.CSV/.WAV) you want to delete.
- 7 Press [F] then [CLR]. A delete confirmation message appears.
- 8 Press [ENT] to execute the deletion.

To cancel, press [CLR] to return to the previous screen.

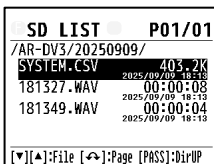
1 2



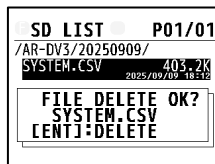
3 4



5 6



7 8



💡 Press [PASS] to go back one level while working with files.

💡 You can delete only one item per operation. To delete multiple items, repeat the steps from 4.

💡 To delete a directory, you must first delete all data inside it.

💡 Deleted data cannot be restored. Copy any important data to your PC, just in case.

# Functions — Advanced Features

## Alarm / Timer

This unit includes an “Alarm” function and a “Timer” function that operate at a specified date and time. Each support “SINGLE (one time)” and “WEEKLY (repeat on selected days)”. Up to 3 settings can be saved.

### Alarm function

It automatically powers on at the specified date/time and starts receiving.

You can specify the operating mode (VFO, search, etc.) and the volume.

The power turns off automatically at the specified end time.

If you operate any key while the alarm is running, the alarm is canceled and the unit returns to normal operation.

Mode	Description
SINGLE	Receive once at the specified date/time
WEEKLY	Repeat at the specified day(s) and time

### Timer function

It automatically powers on during the specified time period and starts/stops recording.



Useful for recording regular broadcasts, etc.

The power turns off automatically at the specified end time.

Press [CLR] during timer operation to stop recording.

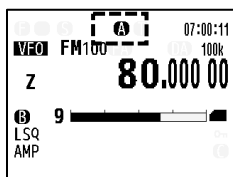
Mode	Description
SINGLE	Record once at the specified date/time
WEEKLY	Repeat recording at the specified day(s) and time period




Setting each function



- How to set the alarm (SINGLE/WEEKLY)  P43
- How to set timer recording (SINGLE/WEEKLY)  P44

### About the icon display

While an alarm or timer recording is running or on standby, the following icons appear at the top of the screen.



	Alarm on standby
	Alarm running (blinking)
	Recording in progress

	Timer on standby
	Timer running (blinking)

# Functions — Advanced Features

## How to set the alarm (SINGLE/WEEKLY)

Using the alarm function, you can automatically start receiving at a specified date and time. Choose “SINGLE (one time)” or “WEEKLY (weekly on selected days)” as needed.

### Procedure

- ❶ Press [F] then [3] to display CLOCK.
- ❷ On “ALARM/TIMER”, press [ENT] to display “ALARM/TIMER”.
- ❸ Select an item with [DOWN], then turn the [dial] to change it.

Item	Setting
NUMBER	Setting number 1–3
TYPE	Select “ALARM”.
REPEATS	Select “SINGLE” or “WEEKLY”.

ALARM/TIMER	1/3
NUMBER	1
TYPE	ALARM
REPEATS	SINGLE
[CLR]:Cancel [ENT]:Set	

### Date/Time & Day settings 2/3

- ❹ Press [DOWN] to move to the next page “2/3”.
- ❺ Enter the date/time using the keypad.

ALARM/TIMER	2/3
#2	[CH:MM]
START	18:00
END	19:00
Sun	Mon Tue Wed Thu Fri Sat
[PASS]:Set/Reset	

Item	Setting
START	Start date/time (SINGLE) or start time (WEEKLY only) [MM-DD HH:MM]
END	End date/time (SINGLE) or end time (WEEKLY only) [MM-DD HH:MM]
Days	Select day with the [dial], toggle on/off with [PASS]. <b>Mon</b> = Enabled <b>Thu</b> = Disabled

### Start-up settings 3/3

- ❻ Press [DOWN] to move to the next page “3/3”.
- ❼ Select each item with [DOWN], then turn the [dial] to change it.
- ❽ Press and hold the [POWER] knob to turn the power off.

ALARM/TIMER	3/3
#1 SRC	VFO
VFO-A	
ALARM VOL	05
SQL OPEN	OFF
[CLR]:Cancel [ENT]:Set	

Item	Setting
SRC	Select the receive mode at power-on: “VFO”, “VSR”, “SER”, “MEM”, “SCN”, “CYB”. For SER/MEM/SCN/CYB, also set the bank/channel next.
ALARM VOL	Volume at startup (recommended to check in advance)
SQL OPEN	ON/OFF. If you set SRC to SER or SCN, set this to “OFF”.

🔔 If you operate any key during alarm operation, the alarm is canceled and the unit returns to normal operation.

## Functions — Advanced Features

### How to set timer recording (SINGLE/WEEKLY)

With timer recording, you can automatically start and stop recording during a specified time period.

Choose “SINGLE (one time)” or “WEEKLY (weekly on selected days)” as needed.

#### Procedure

- 1 Press [F] then [3] to display “CLOCK”.
- 2 On “ALARM/TIMER”, press [ENT] to display “ALARM/TIMER”.
- 3 Select an item with [DOWN], then turn the [dial] to change it.

Item	Setting
NUMBER	Setting number 1-3
TYPE	Select “TIM.REC”.
REPEATS	Select “SINGLE” or “WEEKLY”.

ALARM/TIMER	1/3
NUMBER	1
TYPE	TIM.REC
REPEATS	SINGLE
[CLR]:Cancel [ENT]:Set	

Date/Time & Day settings 2/3

- 4 Press [DOWN] to move to the next page “2/3”.
- 5 Enter the date/time using the keypad.

ALARM/TIMER	2/3
#2	[HH:MM]
START	18:00
END	19:00
Sun	Mon Tue Wed Thu Fri Sat
[PASS]:Set/Reset	

Item	Setting
START	Start date/time (SINGLE) or start time (WEEKLY only) [MM-DD HH:MM]
END	End date/time (SINGLE) or end time (WEEKLY only) [MM-DD HH:MM]
Days	Select day with the [dial], toggle on/off with [PASS]. <b>Mon</b> = Enabled <b>Thu</b> = Disabled

Start-up settings 3/3

- 6 Press [DOWN] to move to the next page “3/3”.
- 7 Select each item with [DOWN], then turn the [dial] to change it.
- 8 Press and hold the [POWER] knob to turn the power off.

ALARM/TIMER	3/3
#1 SRC	VFO
VFO-A	
ALARM VOL	05
SQL OPEN	OFF
[CLR]:Cancel [ENT]:Set	

Item	Setting
SRC	Select the receive mode at power-on: “VFO”, “SER”, “MEM”, “SCN”. For SER/MEM/SCN, also set the bank and channel next.
ALARM VOL	Volume at startup (recommended to check in advance)
SQL OPEN	ON/OFF. If you set SRC to SER or SCN, set this to “OFF”.

- 💡 Press [CLR] during timer recording to stop recording and return to normal operation.
- 💡 The unit powers on 30 seconds before the set time.

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## Functions — Advanced Features

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### Sleep

With the sleep function, the unit's power turns off automatically after the set time has elapsed.

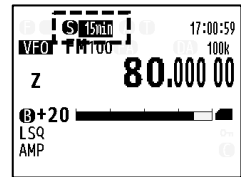
Handy to set before going to bed, etc.

- Sleep time can be selected from:  
15 min, 30 min, 60 min, 90 min, 120 min, 00 min (OFF)

#### Procedure

- ➊ Press [F] then [0]. "S min" appears at the upper left of the screen.
- ➋ Turn the [dial] to select the time (minutes) until sleep.
- ➌ Press [ENT] to confirm.

The remaining time is shown, and the unit turns off when the set time elapses.




- 💡 After sleep ends, turning the power on again will turn the sleep function off.
- 💡 If an alarm/timer start time occurs while sleep is active, the sleep function is disabled.

# Functions — Advanced Features

## Firmware update

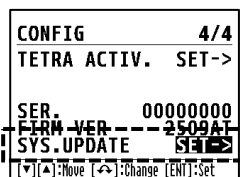
To improve operation, we recommend updating to the latest available firmware version.

### Preparation

- 1) Download the latest firmware from [www.aorja.com](http://www.aorja.com).
- 2) Save the downloaded firmware to an SD card.  
(When you insert an SD card into the unit, an “AR-DV3” directory is created automatically. Save the firmware data to the “AR-DV3” directory, not to the root of the card.  P37)
- 3) Insert the SD card into the unit.
- 4) Perform the update procedure.

### Procedure

- 1 Press [F] then [7] to display the configuration menu.
- 2 Press [UP/DOWN] and select “SYS.UPDATE-SET”.



- 3 Press [ENT] to display the firmware update menu.

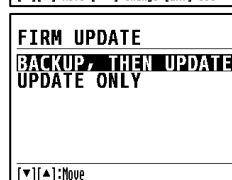
- 4 Press [UP/DOWN] to select.

- “BACKUP, THEN UPDATE”

Back up first, then update the firmware.

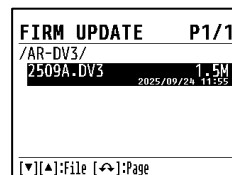
- “UPDATE ONLY”

Update the firmware only.



- 5 Press [ENT] to display the firmware file selection screen.

If you select “BACKUP, THEN UPDATE”, the firmware file selection screen appears after backup.



- 6 Press [UP/DOWN] to select the firmware data.

- 7 Press [ENT] to start the firmware update.

(All key backlights blink and a progress bar is shown.)

When the update is complete, the unit restarts automatically.

💡 Back up important data before updating.

💡 Do not turn off the power during the update.

💡 If the firmware update fails and the unit won't start, try the “Recovery” function.  P47

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# Functions — Advanced Features

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## Reset and Recovery

### Reset

Use this operation when the unit malfunctions or needs initialization.

There are two types of reset:

System reset (Sys Reset)	Initializes all settings but memory data remains.
Full reset (Full Reset)	Initializes all settings and erases memory data.

### System reset

#### Procedure

- 1 With the power off, press and hold the [POWER] knob while holding down [CLR]. Release the keys when “Sys. Reset” appears on the screen.
- 2 After the reset, press the [POWER] knob to restart.

### Full reset

#### Procedure

- 1 With the power off, press and hold the [POWER] knob while holding down [CLR] and the [SQL] knob. Release when “Full Reset” appears on the screen.
- 2 After the reset, press the [POWER] knob to restart.

💡 Back up important data before performing a reset.

### Recovery

An emergency recovery function used if a firmware update fails and the unit can no longer start normally. It loads a recovery firmware permanently stored in the unit and boots in recovery mode. After recovery, be sure to update to the latest available firmware.

#### Procedure

- 1 With the power off, press and hold the [POWER] knob while holding [9] and [CLR].
- 2 When the key backlights start blinking, release the keys. After about 30 seconds, the key lights go off and the clock is displayed—this indicates success.
  - 💡 Do not turn off the power during recovery.
- 3 Press the [POWER] knob to start up. (“Recovery” is displayed on the startup screen.)
- 4 Update to the latest firmware. 📖 P46

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## Functions — Advanced Features

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### Last-One Memory function

Stores the current reception settings so the next time you power on, the unit starts in the same state.

There are two ways to use Last-Once Memory, depending on the situation.

Description	How to operate
Save on shutdown	Press the [POWER] knob to turn the power off.
Forced save	While holding [F], press the [POWER] knob briefly once. “WRITING MEMORY” is displayed.

💡 Either method saves the state, but forced save is handy when you want to intentionally save.

💡 If the “PROTECT” function in the configuration menu is enabled, Last-Once Memory is disabled. 📄P18

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# ◆ ◆ Receiving

(For “Functions” see □P17)

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This unit offers three reception modes. Choose the one that fits what you want to do.

■ **VFO mode** □P50

Tune the frequencies manually to receive signals.

Use this mode when you want to start receiving right away without pre-registering any frequencies.

■ **VFO search mode** □P52

It searches the frequency range between VFO-A and VFO-B.

This is a quick search function that does not require registering a search bank.

■ **Search mode** □P54

Register a frequency range in a Search Bank, and the unit searches through that range continuously.

Use this mode to check whether signals are present in a specific band.

In addition to Normal Search, a faster Cyber Search mode is available.

■ **Memory Recall / Scan mode** □P60

If you already know the frequencies you want to monitor, register them in a Memory Bank.

In Scan mode, the unit scans the registered memory channels in order and continuously.

## Receiving — VFO mode

### VFO mode

Tune the frequencies manually to receive signals.

There are two types of VFO mode.

VFO mode	Description	Operation
VFO-Z	Receive one frequency	Press [F] → [VFO]
Two-VFOs (VFO-A, VFO-B)	Switch between two VFOs to receive	Each press of [VFO] switches A ↔ B.

💡 Pressing [ENT] in Search or Scan mode copies the settings to VFO-Z.

Basic functions available in VFO mode

Function	Operation	Ref.
Receive frequency	<ul style="list-style-type: none"> <li>Enter the frequency on the keypad, then press [ENT].</li> <li>Turn the [dial] to tune.</li> <li>Press [UP/DOWN].</li> </ul>	📖 P21
Demodulation mode (MODE)	Press [MODE].	📖 P23
IF bandwidth (IFBW)	Press [F] then [MODE].	📖 P23
Step frequency (STEP)	Press [F] then [2].	📖 P24
Step adjust (S-ADJ)	On the step input screen, press [PASS].	📖 P25
Attenuator / RF amp	Press [F] then [5].	📖 P28
AGC	Press [F], then press and hold [5].	📖 P29
Option selections	Press [F] then [9], select with [UP/DOWN] Turn the [dial] to change, then press [ENT].	📖 P27

Advanced functions available in VFO mode

Function	Operation	Ref.
VFO search	Press and hold [VFO] or [UP/DOWN].	📖 P52
SD card recording	Press [●] to record. Press [●] again to stop.	📖 P38
Priority reception	Press [F] then [4]. To set, press and hold [4].	📖 P32
Offset reception	Press [F] then [.]	📖 P33
Voice squelch	Press [F], then press and hold [1].	📖 P30
Extended squelch functions (CTC, DCS, VSCR)	Press [F] then [1]. (FM mode, IFBW 6 kHz / 15 kHz only)	📖 P30

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## Receiving — VFO Mode

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### VFO copy

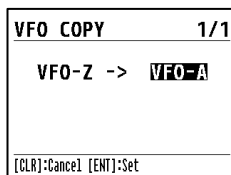
You can copy the current VFO settings to another VFO.

Example: VFO-Z → VFO-A

- VFO-A → VFO-B

#### Procedure

- ❶ Select the VFO you want to copy.
- ❷ Press [F] then [PASS] to display “VFO COPY”.
- ❸ Turn the [dial] to choose the copy destination.
- ❹ Press [ENT] to confirm.



# Receiving — VFO Mode

## VFO Search (VSR)

A search function that operates in VFO mode.

It searches the frequency range between VFO-A and VFO-B.

This is a quick search function that does not require registering a search bank.

IF bandwidth, demodulation mode, step frequency, etc. follow the settings of the starting side (VFO-A or VFO-B).

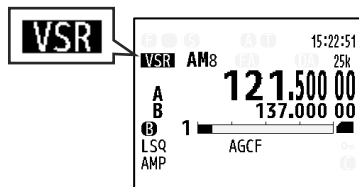
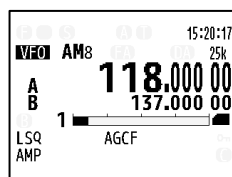
### Starting VFO Search

#### Procedure

❶ Press [VFO] to switch VFO-A/VFO-B, and set a frequency for each.

❷ Press and hold [VFO] or [UP/DOWN] to start VFO Search.

Adjust the squelch appropriately.



#### Operations during VFO Search

Operation	Description
Press the [dial] or [UP/DOWN]	Change search direction
Press [VFO]	End VFO Search
Press [ENT] while stopped	Copy the contents to VFO-Z
Press [PASS] while stopped	Register to Frequency Pass  P34

“Stopped” means the search has halted because a signal is being received.

💡 Even when operating from VFO-Z, VFO Search is performed between the two VFOs.

# Receiving — VFO Mode

## VFO Search settings

You can configure VFO Search functions.

Use the settings according to your monitoring needs.

### Procedure

- 1 Press [F], then press and hold [VFO] to display “VFO SEARCH”.

VFO SEARCH	1/1
DELAY	2.0
FREE	OFF
STORE	OFF
DEL.BK39	DELETE
[▼][▲]: Move [↔]: Change	

- 2 Select an item with [UP/DOWN], then turn the [dial] to change it.
- 3 Press [ENT] to confirm.

### Settings

Function	Description
DELAY (Delay)	Set the delay time (seconds) before search resumes after the signal disappears while stopped. Default: 2.0 s. OFF: no delay; HOLD: do not resume; range: 0.1–9.9 s.
FREE (Free)	Forces the search to resume after the set time even if a signal is still being received. OFF: disabled; 01–60 s. Default: OFF.
STORE (Store)	Automatically stores the frequency information received in VFO Search to memory bank 39. Default: OFF. OFF: do not store ON: store
DEL.BK39	Deletes all entries stored in memory bank 39. Select DELETE and press [ENT], then press [ENT] again on the confirmation screen.

- 💡 Memory bank 39 is the storage destination for VFO Search and Search auto-store. Search auto-store is set in the Search Group. P57

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## Receiving — Program Search Mode

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### Search mode (SRCH)

You can automatically look for signals within a specified frequency range.

Register the frequency range, demodulation mode, step frequency, etc. to a search bank in advance, then the unit searches within the bank in step increments.

When a signal is detected, the search stops and audio is output.

A link function lets you search multiple search banks in sequence.  P57

### Performing a search

Select a search bank and run the search.

When the squelch opens (signal present), the search stops and audio is output.

When the squelch closes (signal gone), the search resumes.

#### Procedure

- 1 Press [SRCH] to enter "Search mode".
  - 2 Turn the [SQL] knob to close the squelch; the search starts.
- Enter a 2-digit bank number on the keypad, or press [F] → [UP/DOWN] to change the bank. (After changing, press [F].)
  - Press [UP/DOWN] or turn the [dial] to change the search direction.

### Exiting Search mode


#### Procedure

- 1 Press [VFO].  
Returns to VFO mode.
- During searching, pressing [SRCH] or [ENT] copies the contents to "VFO-Z".
  - While stopped, pressing [ENT] copies the contents to "VFO-Z".

### Registering Search Pass

Register frequencies you don't want it to stop on, and it won't stop on them next time.

#### Procedure

- 1 While stopped on an unwanted frequency, press [PASS].  P34

# Receiving — Program Search Mode

## Search bank

To use Search mode, you must register a search bank in advance.

### Registering a search bank (SR.PROG)

Maximum: 40 (00–39)

Search bank program items

Bank number 00–39	IFBW
L. FREQ — Lower limit frequency	TITLE — Bank title
U. FREQ — Upper limit frequency	AMP/ATT
STEP	PROTECT
MODE	-

#### Procedure

- ❶ Press [F] → [6] to display “SRCH BANK”.
- ❷ At BANK, turn the [dial] or enter the bank number on the keypad.  
Press [UP/DOWN] to move the cursor.
- ❸ L. FREQ: Enter the lower frequency using the keypad.
- ❹ U. FREQ: Enter the upper frequency using the keypad.
- ❺ STEP: Turn the [dial] to set the step frequency.
- ❻ MODE: Turn the [dial] to select the demodulation mode.
- ❼ IFBW: Turn the [dial] to select the IF bandwidth.

SRCH BANK	1/2
BANK	05
L. FREQ.	-----
U. FREQ.	-----
STEP	10k
MODE	D-AU
IFBW	15k
[▼][▲]:Move [↔]:Change	

If you select a digital mode or “D-AU” in MODE, IFBW cannot be selected.

- ❽ TITLE: You can assign a name to the search bank.
  - Turn the dial to move the cursor
  - Use the keypad to enter characters
  - Press [UP] to delete one character
- ❾ AMP/ATT: Turn the [dial] to select the RF amp / attenuator.  
AMP → OFF (blank) → ATT
- ❿ PROTECT: Turn the [dial] to select ON/OFF.  
If set to ON, changes made in Search mode are not saved.  
However, changes can still be made in the Search Program menu (not protected).
- ⓫ Press [ENT] to confirm.

SRCH BANK	2/2
TITLE	██████████
AMP/ATT	AMP
PROTECT	OFF
[▼][▲]:Move [↔]:Change	

# Receiving — Program Search Mode

## Changing search bank contents

The following functions, which cannot be set via the SR.PROG key, can be set in Search mode instead, as follows.

Functions set in Search mode

CTCSS	P30	NR	P27
DCS	P30	DIG. DECODE	P27
SCR	P30	IF DIR	P27
RTN	P30	OFFSET(DUP)	P33
VOICE SQL	P30	PRIO	P32

If a search bank's PROTECT is ON, you can change these settings temporarily, but they are not saved.

If you want to save them, set PROTECT to OFF beforehand. P55

You can also change settings such as demodulation mode and IF bandwidth in Search mode.

## Deleting a search bank

You can delete search banks one at a time.

To delete multiple banks, repeat this operation.

### Procedure

- 1 Press [SRCH] to enter Search mode.
- 2 Use [F] → [UP/DOWN] or the keypad to select the search bank to delete.
- 3 Press [F] → [CLR] to display "DEL. SRCH. BANK".

- 4 After confirming the bank contents, press [ENT] to delete.

DEL.SRCH BANK	1/1
BANK	
L.FREQ	0118.00000
U.FREQ	0142.00000
TITLE	AIR BAND VHF
[CLR]:Cancel [ENT]:Delete	

## Search pass

If there are unwanted signals in Search mode, register them as pass so it won't stop on them next time.

### Procedure

- 1 Press [PASS]. P34

# Receiving — Program Search Mode

## Search group

In Search Group, you can set search conditions such as linking multiple search banks and pause time. Creating groups by purpose lets you run searches with the appropriate conditions when needed.

### Setting a search group (SR. GRP)

Can register: 10 (0–9)

Search group items	Default
Bank link	None
Delay	2.0
Free	OFF
Store	OFF
DEL, BK39	-

#### Procedure

- Press [F] → [SRCH] to display SRCH GROUP.
- At GROUP NO, turn the [dial] to select a group number.
- Press [DOWN] to move to BANK LINK.  
Turn the [dial] to select the bank(s) to link.
- Each press of [PASS] toggles link ON/OFF (highlighted when ON).  
💡 Bank linking is optional.
- Press [DOWN] to move to 2/2.

<b>SRCH GROUP</b>	<b>1/2</b>
<b>GROUP NO</b>	<b>0</b>
<b>BANK LINK</b>	(03:AIR BAND UHF)
00 01 02 03 04 05 06 07 08 09	
10 11 12 13 14 15 16 17 18 19	
20 21 22 23 24 25 26 27 28 29	
30 31 32 33 34 35 36 37 38 39	
[↔]:BankMove [PASS]:Link	

<b>SRCH GROUP</b>	<b>2/2</b>
<b>DELAY</b>	<b>2.0</b>
<b>FREE</b>	<b>01</b>
<b>STORE</b>	<b>OFF</b>
<b>DEL. BK39</b>	<b>DELETE</b>
[▼][*]:Move [↔]:Change	

2/2

Item	⑥ Procedure	Description
[DELAY] Delay	Select an item with [UP/DOWN]. Turn the [dial] to set the value.	Time before search resumes after the signal disappears. OFF: no delay; HOLD: do not resume; range: 0.1–9.9 s.
[FREE] Free		Forces the search to resume after the set time even if a signal is present. Setting range: OFF, 01–60 s.
[STORE] Auto store		Automatically stores detected frequency, demodulation mode, etc. to memory bank 39. ON/OFF.
[DEL, BK39] Delete bank 39		Deletes all memory channels in memory bank 39.

- Press [ENT] to confirm.

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# Receiving — Program Search Mode

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## Selecting a search group

Performs a search using the conditions registered in the search group.

### Procedure

- 1 Press [F] → [SRCH] to display “SRCH GROUP”.
- 2 At GROUP NO, turn the [dial] to select the group number.
- 3 Press [ENT] to exit the menu.
- 4 Press [SRCH] to enter Search mode.
- 5 Turn the [SQL] knob to close the squelch; the search starts.

SRCH GROUP										1/2
GROUP NO										0
BANK LINK (03-11# BANK-UNIT)										
00	01	02	03	04	05	06	07	08	09	
10	11	12	13	14	15	16	17	18	19	
20	21	22	23	24	25	26	27	28	29	
30	31	32	33	34	35	36	37	38	39	
[↩]:BankMove [PASS]:Link										

- Enter a 2-digit bank number on the keypad,  
Or press [F] → [UP/DOWN] to change the bank.  
(After changing, press [F].)
- Press [UP/DOWN] to change the search direction.

💡 If you select a bank that is not specified in Bank Link, it will not be linked, and the unit searches that single bank as in normal search.

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# Receiving — Program Search Mode

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## Cyber Search (CYB)

This unit includes “Cyber Search” for high-speed processing.

Unlike normal step-by-step search, it uses FFT (Fast Fourier Transform) to analyze a 500 kHz bandwidth at once. The wider the search range and the smaller the step, the more effective Cyber Search becomes.

Search speed performance

- Normal search: 100 ch/s
- Cyber Search: 67 ms per 500 kHz

Search time comparison (example: FM mode, 100 MHz range, 6.25 kHz step)

- Normal search:  $100\text{MHz} / 6.25\text{kHz} / 100\text{ch} \approx 160 \text{ s}$
- Cyber Search:  $0.067 \times 100\text{MHz} / 0.5 \approx 13.4 \text{ s}$  ← about 12× faster

In SSB/AM modes, AGC effects, and in digital modes, signal detection processing may make it slower than the times above.

### Procedure

- 1 Press and hold [SRCH] to start Cyber Search.

Adjust the squelch appropriately.

- 2 Bank selection

- Enter a 2-digit bank number on the keypad, or press [F] → [UP/DOWN]. (After changing, press [F].)

- 3 Change search direction

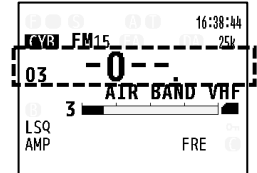
- Press [UP/DOWN]
- Or turn the [dial].

💡 Each time the search makes one full sweep, the “0” indicator shifts by one position. The direction the “0” moves shows whether you are searching up or down.

💡 Press and hold [SRCH] to copy the contents to VFO-Z.

- 4 End Cyber Search.

Press any of [VFO], [SRCH], or [SCAN] to end.



### Functions available in Cyber Search

- Search group P57

(Even with Bank Link enabled, the “0” indicator shifts by one position per bank.)

- Search pass P34

# Receiving — Memory Channels

## What you can do by registering memory channels

You can receive in Memory Channel Recall Mode (MEM) or in Scan mode.

### Memory channel

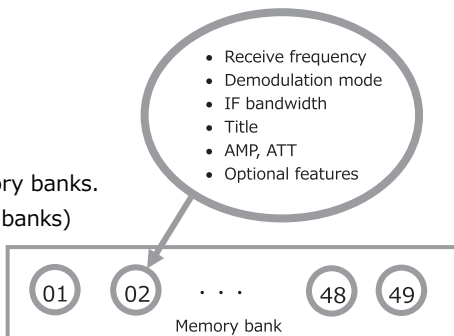
In addition to receive frequency, demodulation mode, IF bandwidth, etc. can be registered in a memory channel.

In Memory Channel Recall Mode (MEM)

You can recall and receive.

Memory channels are registered to memory banks.

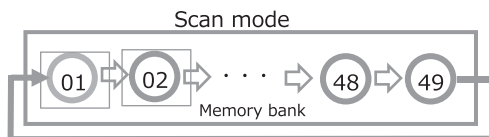
- Max entries: 2000 (50 channels × 40 banks)



### Scan mode (SCAN)

Automatically checks for signals across multiple memory channels registered in a memory bank.

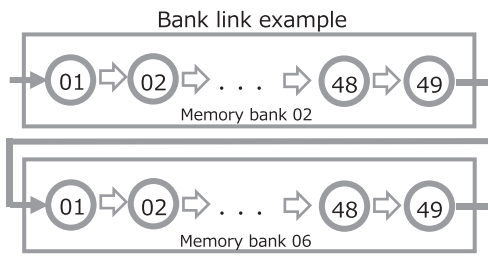
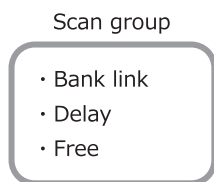
When a signal is present, the squelch opens, scanning stops, and audio is output.



### Scan group

Besides “bank link,” which lets you select multiple banks and scan them continuously, you can also set scan conditions like delay.

- Max entries: 10 groups (0–9)



⋮

# Receiving — Memory Channels

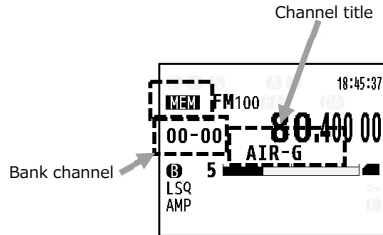
## Memory channels (MEM/SCN)

### Memory Channel Recall Mode (MEM)

You can recall a memory channel and receive.

#### Procedure

- 1 Press [SCAN] to enter MEM mode.



- 2 MEM mode operations

Operation target	Procedure	Examples / Notes
Specify Bank and channel number	Enter 4 digits on the keypad	Ex: Selecting bank 05, channel 12 Enter [0][5][1][2]
Browsing bank numbers	Press [F] → [UP/DOWN]	(After changing, press [F] to exit function mode.)
Browsing channels	<ul style="list-style-type: none"><li>• Turn the [dial].</li><li>• Press [UP/DOWN]</li></ul>	
Copy to VFO-Z	Press [ENT]	

💡 If no memory channels are registered, pressing [SCAN] will trigger a beep and the recall screen is not displayed.

# Receiving — Memory Channels & Scan Mode

## Scan mode (SCN)

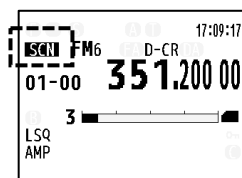
Scans memory channels registered in a memory bank.

When a signal is present (when squelch opens), scanning stops and audio is output.

When the signal disappears, scanning resumes.

### Procedure

- 1 Press [SCAN] and select SCAN.
- 2 Turn the squelch knob to close squelch; scanning starts.



### 3 Operations during scanning

Operation target	Procedure	Notes
Change bank	Press [F] → [UP/DOWN].	(After changing, press [F] to exit function mode.)
	Enter 2 digits on the keypad.	
Change scan direction	Turn the [dial].	Clockwise = Ascending Counterclockwise = Descending
Copy to VFO-Z	Press [ENT].	Only while scan is stopped
Register a pass frequency	Press [PASS].	Only while scan is stopped

💡 If no memory channels are registered, pressing [SCAN] triggers a beep and the recall screen is not displayed.

💡 The Scan Group function can be used.

Specify the scan group number before starting the scan. P57

# Receiving — Memory Channels & Scan Mode

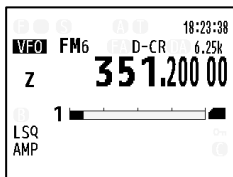
## Registering a memory channel

In a memory channel, you register the receive frequency, demodulation mode, IF bandwidth, etc.

Registered memory channels can be used in Scan mode.

### Procedure

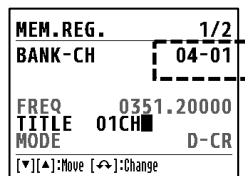
- ❶ Press [VFO] to enter VFO mode.  
(VFO-Z, VFOA, VFOB)
- ❷ Set the settings you want to register to the memory channel.



💡 Memory channel contents can be edited even after registration. [P64](#)

Registerable settings	Ref.
Receive frequency	<a href="#">P21</a>
Demodulation mode	<a href="#">P23</a>
IF bandwidth	<a href="#">P23</a>
Step frequency	<a href="#">P24</a>
Step adjust	<a href="#">P25</a>
AMP/ATT	<a href="#">P28</a>
AGC	<a href="#">P29</a>
Option functions	<a href="#">P27</a>
Extended squelch functions	<a href="#">P30</a>
Digital Selective Receive function	<a href="#">P26</a>

- ❸ Press and hold [ENT] to display “MEM. REG.”. Specify which bank/channel to register to.
  - Enter bank–channel as 4 digits on the keypad or turn the [dial] to select.

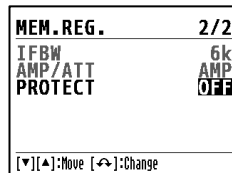


- ❹ Press [DOWN] and enter TITLE. (Optional)  
The TITLE can be up to 12 characters long.

- [Dial]: Move cursor
- [Keypad]: Select alphanumeric (see key labels)
- [UP]: Delete one character

After entering the title, press [DOWN].

- ❺ Select PROTECT [P64](#)
- ❻ Press [ENT] to complete registration.



# Receiving — Memory Channels & Scan Mode

## Change memory channel contents

Change various settings while recalling a memory channel or while scan is stopped.

### Procedure

- 1 In MEM mode, select the memory channel you want to change.

Or, while scanning is stopped in Scan mode.

- 2 When you change any setting, "WRITING MEMORY" is displayed and the memory channel is overwritten.

💡 If the memory channel's PROTECT is ON, it cannot be overwritten.

If you want to set PROTECT to OFF, change it in Memory Edit as described next.

Changeable settings	Ref.
Demodulation mode	📄 P23
IF bandwidth	📄 P23
Step frequency	📄 P24
Step adjust	📄 P25
AMP/ATT	📄 P28
AGC	📄 P29
Option functions	📄 P27
Extended squelch functions	📄 P30
Digital Selective Receive function	📄 P26

### Change in Memory Edit (MEM. EDIT)

Change the registered contents of a memory channel using Memory Edit.

Changes are possible even if the memory channel's PROTECT is ON.

### Procedure

- 1 Press [F] → [8] to display MEM. EDIT.
- 2 Enter bank-channel as 4 digits on the keypad, or turn the [dial] to select.

Changeable settings
Receive frequency (FREQ)
Title (TITLE)
Demodulation mode (MODE)
IF bandwidth (IFBW)
AMP/ATT
PROTECT

- 3 Press [DOWN] to select the item you want to change.
  - For FREQ (receive frequency), enter the frequency on the keypad.
  - For other items, turn the [dial] to change.
- 4 Press [ENT]. "WRITING MEMORY" is displayed and the memory channel is overwritten.

💡 Immediately after editing in Memory Edit, the change is not reflected on the MEM screen. The change is applied when you perform an operation such as changing channels.

# Receiving — Memory Channels & Scan Mode

## Memory Bank Settings (MEM BANK)

You can set the memory bank title and PROTECT.

The memory bank title is shown in the PC software “AR-DV3 DataUtility”. Not shown on the unit itself.

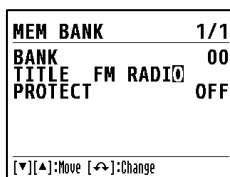
### Procedure

- 1 Press and hold [F] → [SCAN] to display “MEM BANK”.
- 2 BANK: Turn the [dial] to select the bank number.
- 3 Press [DOWN] to enter a bank title. (Optional)
  - [Dial]: Move cursor
  - [Keypad]: Select alphanumerics (see key labels)
  - [UP]: Delete one character

After entering the title, press [DOWN].

- 4 Select PROTECT.
- 5 Press [ENT] to complete registration.

If you set PROTECT to ON, you can no longer edit the bank contents in MEM or SCAN mode.

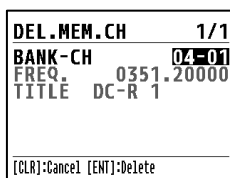


## Delete memory channel (DEL. MEM. CH)

You can delete a specified memory channel.

### Procedure

- 1 Press [SCAN] to enter MEM mode.
- 2 Select the channel you want to delete.
- 3 Press [F] → [CLR] to display “DEL, MEM, CH”.
- 4 After confirming the channel to delete, press [ENT] and “DELETE?” is displayed.
- 5 To delete, press [ENT].
- 6 “WRITING MEMORY” is displayed and deletion is executed.



💡 To delete multiple channels, repeat the above steps.

You cannot delete by bank.

You can erase all registrations in this unit by performing a reset. P47

💡 If PROTECT is ON for memory channels or memory banks, you cannot delete them. Set PROTECT to OFF and try again.

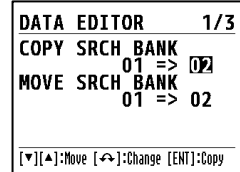
# Receiving — Memory Channels & Scan Mode

## Data Editor (EDIT)

You can copy or move search banks, memory banks, and memory channels.

### Procedure

- ❶ Press and hold [F] → [8] to display “DATA EDITOR”.
- ❷ Press [UP/DOWN] to move the cursor.
- ❸ Turn the [dial], or enter the bank/channel number with the keypad.
- ❹ Press [ENT] on the item you want to run to execute it.



Item	Description
COPY SRCH BANK	Copy a Search Bank
MOVE SRCH BANK	Move a Search Bank
COPY MEM BANK	Copy a Memory Bank
MOVE MEM BANK	Move a Memory Bank
COPY MEM CH	Copy a Memory Channel
MOVE MEM CH	Move a Memory Channel



Source data      Destination data

Press [ENT] after the destination number has been set.

- 💡 If you execute Move, the original data is deleted.
- If you execute Copy, the original data is not deleted.
- 💡 Banks/channels with no registered memory data are not shown in the source data.

# Receiving — Memory Channels & Scan Mode

## Scan group

In Scan Group, you can set scan behavior such as bank linking.

Initially, group number 0 is selected.

There are ten Scan Groups, from 0 to 9.

### Procedure

- ❶ Press [F] → [SCAN] to display "SCAN GROUP".
- ❷ At GROUP NO, turn the [dial] to select the group number.
- ❸ Press [DOWN] to move to the Bank Link settings.

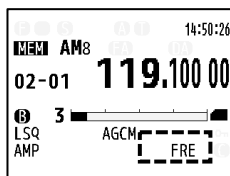
The bank link function is optional. (Default: no bank link)

<b>SCAN GROUP</b>		<b>1/2</b>							
<b>GROUP NO</b>		<b>0</b>							
<b>BANK LINK</b>									
00	01	02	03	04	05	06	07	08	09
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
[▼][*]:Move [↔]:Change									

- ❹ Press [DOWN] to move to the next item.

Item	Description
BANK LINK	<ul style="list-style-type: none"> <li>• Turn the [dial] to move the cursor.</li> <li>• On the bank number you want to link, press [PASS].</li> </ul> <p>Example: To scan bank 3 and 5 continuously, press [PASS] on 3 and 5 to highlight them.</p>
DELAY	<p>Sets the wait time from when the signal disappears after scan stops until scanning resumes. (Default: 2.0 s)</p> <ul style="list-style-type: none"> <li>• OFF: No wait; resume immediately.</li> <li>• 0.1–9.9 s: Time until scanning resumes.</li> <li>• HOLD: Hold (do not resume scanning)</li> </ul>
FREE	<p>A function that forces scanning to resume even while a signal is present after scan stops.</p> <p>(Default: OFF)</p> <ul style="list-style-type: none"> <li>• OFF: Disabled.</li> <li>• 01–60 s: Time until it resumes.</li> </ul>




























- ❺ Press [ENT] to confirm.



Indication that FREE is enabled.

## Before you suspect a malfunction

Please check the following before contacting us or requesting servicing.

Power does not turn on	• Is the AC adapter connected correctly?	 P10
	• Is it a USB-PD compatible power supply with DC 15V(min.30W) output? (When using the USB-PD terminal)	 P10
No sound	• Is AF GAIN (volume) set to minimum?	 P19
	• Is the squelch closed?	 P20
	• Is Voice Squelch / Tone Squelch enabled?	 P30
No reception	• Is the antenna connected correctly?	 P11
	• Is the receive frequency set correctly?	 P21
Poor reception sensitivity	• Is the attenuator (ATT) ON?	 P28
	• Is RF GAIN enabled?	 P29
Received audio sounds strange	• Are the demodulation mode and IF bandwidth set correctly? Try Auto mode as well.	 P23
	• Is Voice Scrambler enabled?	 P30
	• Is the D-CR scramble code set correctly?	 P26
The unit does not respond to operation	• Is Key Lock enabled?	 P15
	• Is it in Remote Mode?	 P13
The squelch knob does not work	• Is RF GAIN enabled?	 P29
Auto mode (F-AU) gets cancelled	• If you change demodulation mode, IF bandwidth, step, etc., Auto mode will be cancelled.	 P22
Cannot search/scan	• Is the squelch adjustment appropriate?	 P20
Search/scan does not stop even though there is a signal	• Is the squelch level set too high?	 P20
	• Is it registered as PASS/SKIP?	 P34
	• Are Tone Squelch / DSC, etc. set?	 P30
Search/scan restarts by itself	• Is the FREE function enabled?	 P57
Cannot change memory channel contents	• Is Memory Channel PROTECT set to ON?	 P64
Frequency is off (shifted)	• If the receive frequency is not an exact multiple of the step frequency, Step Adjust is required.	 P25
Frequency display changes by itself	• Is the Priority function active?	 P32
Some digital transmissions cannot be received	• Not all digital modes are supported.	 P23
Clock display has drifted	• It is not as accurate as a clock. Please adjust it sometimes.	 P16
Will not start after firmware update	• Try the Recovery function.	 P47

Still having trouble? Send us a message at [mail@aorja.com](mailto:mail@aorja.com)

# Specifications

AR-DV3 specifications			
Frequency coverage ※1		100kHz-3000MHz (Min. tuning step 10Hz)	
Digital receive modes	TETRA	Direct mode and traffic channels. The GSSI user group filtering function is an optional activation.	
	COSPAS-SARSAT	This function is an optional activation.	
	DMR	TIER 1 and TIER 2	
	NXDN/D-CR	RALCWI variant not supported	
	P25	Phase 1 only	
	dPMR	dPMR446 Tier 1 only	
	D-STAR	DV mode only	
	YAESU	C4FM V/D and Voice FR (VW) wide	
	ALINCO	EJ-47U only	
	On screen info	D-CR WC/UC, NXDN RAN, DMR slot/color, P25 NAC, TETRA slot, D-STAR CAL/RPT	
User configurable	D-CR 15-bit code/WC, NXDN RAN, DMR slot/color, P25 NAC, Tetra slot		
Analog receive modes	FM	6kHz/15kHz/30kHz/100kHz/200kHz	
	FM SQL	CTCSS, DCS, reverse tone, analog voice inversion descrambler ※1	
	AM	3.8kHz/5.6kHz/8kHz/15kHz	
	SAH/SAL	3.8kHz/5.6kHz	
	SSB(USB/LSB)	1.8kHz/2.6kHz	
	CW	200Hz/500Hz (pitch fixed at 600Hz)	
Digital auto-mode selection		For all digital modes, except TETRA and COSPAS.	
Receiver architecture		100kHz-18MHz Direct sampling 18MHz-3000MHz Double superheterodyne	
Frequency stability		±1ppm (0~50°C, after 5 min. warm-up)	
Sensitivity (Typical values) ※2	SSB (10dB S/N)	<0.3µV	
	AM (10dB S/N)	<1.0µV	
	FM (12dB SINAD)	0.1MHz-18MHz	<0.5µV
		18MHz-1500MHz	<0.3µV
		1500MHz-3000MHz	<0.5µV
WFM (12dB SINAD)	60MHz-108MHz	<1.0µV	
Memories	VFOs	3 (A/B/Z)	
	MEMORY CHANNELS	2000 (50 channels × 40 banks)	
	SEARCH BANKS	40	
	PASS FREQUENCIES	Up to 50 per BANK or per VFO	
Attenuator		0dB / 20dB	
RF Preamp		Approx.14 dB (above 18 MHz)	
Power requirements		DC 12V (10.7-16V) via 5.5-2.1 mm plug, or USB-PD 15V (30W or higher) via USB Type-C	
Current draw		<1A	
Audio output		1.5W into 8Ω load	
Dimensions		178(W)×50(H)×180(D)mm (excluding projections)	
Weight		Approx 1.5kg	
Operating temperature		0-50°C	
I/O connectors		Antenna: BNC 50Ω PHONES: 3.5 mm stereo mini jack (mono audio) SP OUT: 3.5 mm stereo mini jack (mono audio) LINE OUT: 3.5 mm stereo mini jack (mono), or 12 kHz-offset analog IF (selectable) DC input: 12V (10.7-16V), 5.5-2.1 mm Rear USB: USB-PD Type-C power input, DC 15 V (30 W or higher) Front USB (Type-C): PC control and "USB audio class 1" or 12 kHz-offset analog IF (selectable) SD Card Slot: For full-size SDHC (max 32 GB, FAT32). Used for audio recording with logs, memory data backup, and firmware updates.	
Supplied accessories		User manual only. The international model does not include the AC power supply or telescopic rod antenna; these items are sold separately.	

※1 As per FCC rules, the US consumer version has cellular frequencies blocked and the analog voice descrambler function deactivated by hardware. These restrictions are final and cannot be reversed by firmware change nor command input

※2 Sensitivity Measurement Conditions:

FM: 1 kHz tone, 3 kHz deviation, IFBW 15 kHz

WFM: 1 kHz tone, 50 kHz deviation, IFBW 100 kHz

AM: 1 kHz tone, 60% modulation, IFBW 8 kHz, AGC=ON

SSB: 1 kHz tone, 60% modulation, IFBW 2.6 kHz, AGC=OFF

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MEMO





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