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AOR AR-DV1 Manual Addendum Instructions

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Note about the supplied power supply: By design, switched-mode power supplies are source of power line harmonics, which can produce noise on some frequencies received by the radio receiver. The supplied telescopic antenna is more likely to pickup these harmonics than an outdoor antenna, due to its proximity to the power supply. Thank you for your kind understanding.

Contents

The AR-DV1 firmware can be easily updated per SD card*!

Check **http://www.aorusa.com/support/firmware.html** for new firmware with bug fixes and improved functionality. Operation details of new functions are described on the same page.

* The receiver supports SD/SDHC cards up to 32GB in size. Please note that the bigger the card, the longer is the card access time when you insert the card in the receiver (in some cases it might take about 60 seconds).

It is acknowledged that some cards might be incompatible with AR-DV1, depending on the IC type it is using. In that case, either the SD card icon does not appear on the LCD, or starting a recording might freeze the receiver. However, a reboot will put the receiver back into operation.

Following features have been added

- DMR slot selection (since v.1509F)

  If in DMR mode, press the main dial to activate the slot selection. Rotate the dial for the desired slot(s) and validate with ENT. If in digital AUTO mode, press the main dial twice to activate the slot selection. Rotate the dial for the desired slot(s) and validate with ENT.

- DMR color code (since v.1512A)

  If in DMR mode, press the main dial twice to access the color code selection. Rotate the dial to select "ON" followed by a dial press to access the color code input menu. With the ten-key, input the desired 2-digit color code and validate with ENT. If in digital AUTO mode, press the main dial until you arrive at the DMR settings and proceed as above.

- P25 network access code (NAC) (since v.1512A)

  If in P25 mode, press the main dial to access the NAC selection. Rotate the dial to select "ON" followed by a dial press to access the NAC input menu. Rotate the dial to select the first of the 3 digits of the NAC code. Go to the next digit with the blue down arrow key. When all 3 digits have been input, validate with ENT. If in digital AUTO mode, press the main dial until you arrive at the P25 settings and proceed as above.

- NXDN radio access number (RAN) (since v.1512A)

  If in D-CR (=NXDN) mode, press the main dial twice to access the RAN selection. Rotate the dial to select "ON" followed by a dial press to access the RAN input menu. With the ten-key, input the desired 2-digit color code and validate with ENT. If in digital AUTO mode, press the main dial until you arrive at the NXDN settings and proceed as above.

- NXDN Descramble function

  (For 15-bit digital scrambling mode NXDN signals. Does not support encrypted mode NXDN signals.)

- Select the NXDN mode (=D-CR) or AUTO mode.

  Once the desired signal is received:

- Click once on the main dial

- Long press on MODE button

  The blinking question marks means that AR-DV1 is searching for the descrambling code. It just takes 1 or 2 seconds if reception conditions are good. Once found, it will the scramble code such as 000015 for example and you will hear the decoded voice.

  Please note that although the display shows "ENC.CODE", it actually means "descramble" code. No relation to encryption.

- CTCSS "reverse tone" (since v.1702D) To enable this feature, F+1 then turn the dial until [RTN] appears and validate with ENT. The frequency of the reverse tone is set in CTCSS parameters. The reverse tone squelch is a function to mute (close) the squelch only when AR-DV1 receives a frequency matching the programmed tone

frequency. It unmutes (opens) the squelch when it receives a frequency which is not the programmed tone frequency. This function is not generally used in ham radio operation, but rather by some taxi and bus drivers.

- D-CR user code now displayed. (since v.1702D)

Discriminator direct recording on SD (did not work with versions 1812.dv1 and 1903.dv1)

Whereas AR-DV1 features a discriminator output (AUX socket), with a little trick the discriminator signal can also be recorded directly to its SD card! Here is how:

1. On your PC, open a text file and type the word "DISC" (in capitals, just the letters DISC).
2. Save this file as DISC.txt
3. Copy this file to the SD card.
4. Put the SD card into AR-DV1.

Whenever the receiver sees this file, it will record the received audio in "discriminator" format. (In FM mode, only 6kHz, 15kHz and 30kHz bandwidth supported)

In case you don't know, discriminator audio is an unfiltered signal, also called baseband audio. It is required by some PC applications decoding data signals such as CTCSS, SCA, FSK, RTTY, FAX, Pager data, and trunked system control data, etc. For details we invite you to ask Google.

TETRA voice decoding (2 modes) (since v.1812A)

T-DM mode: DMO MOBILE TO MOBILE (also called "direct mode")

T-TC mode: Traffic channels of trunked Tetra networks

TETRA reception only works in manual mode selection. Unfortunately, it cannot be part of the AUTO MODE detection mode because Tetra is very CPU intensive.
-In SCAN mode, do not mix TETRA and non-TETRA modes. All frequencies in your SCAN bank should be preset as T-DM or TTC
Encryption is not and can never be supported. (Usually, governmental operators do use encryption whereas commercial operators don't)
Advice for best performance:
-LEVEL SQUELCH is strongly recommended for Tetra. As the IF bandwidth of Tetra is very large, the "noise squelch" filter is not suitable for that use. (Press and hold the SQL knob for 2 seconds to display SQL settings.)

Understanding trunked Tetra networks:

TYPICAL TETRA TRUNKING SPECTRUM (step 25kHz)

If you want to manually tune to a traffic channel (VFO)

(In the following instructions, it is assumed that all receiver settings are factory default.)
Set the receive mode to T-TC: MODE key + rotate the large dial until T-TC + ENT key
Enter the frequency with the numeric keypad + ENT key
Set the SQL level to 0.
You can let the receiver automatically select the Tetra slot where there is speech, or manually select 1 of the 4 slots: Press the main dial
Turn the main dial until the desired slot number, or AUT for automatic.
ENT key

If you know all frequencies of the target Tetra trunking network (SCAN)

(In the following instructions, it is assumed that all your receiver banks are empty and that all receiver settings are factory default.)
First save those frequencies in a SCAN BANK:
Set the receive mode to T-TC: MODE key + rotate the large dial until T-TC + ENT key
Enter a frequency with the numeric keypad + long press on ENT key + 3 times ENT key
Repeat for each frequency.
To start scanning: 2 times SCAN key
Squelch adjustment: It's the opposite from what you are used to, use the SQL dial to set the maximum value first (99) and then gradually reduce when you reached a good balance of caught signals vs. scanning speed. The higher the SQL level, the faster is the scan, however it it's set too high, you might miss some talk.
To stop scanning and return to VFO screen: VFO key

If you only know the lowest and highest frequencies of the target Tetra trunking network (SEARCH)

(In the following instructions, it is assumed that all your receiver banks are empty and that all receiver settings are factory default.)
Create a SEARCH BANK to scan between those frequencies:
F key + 6 key
ENT key
Enter the lowest frequency with the numeric keypad + ENT key
Enter the highest frequency with the numeric keypad + ENT key
Rotate the main dial until 25k for the STEP value + ENT key
Rotate the main dial until T-TC for the MODE + ENT key
3 times ENT key
To start SEARCH: SRCH key

Squelch adjustment: It's the opposite from what you are used to, use the SQL dial to set the maximum value first (99) and then gradually reduce when you reached a good balance of caught signals vs. search speed. The higher the SQL level, the faster is the search, however it it's set too high, you might miss some talk.

To stop search and return to VFO screen: VFO key

Advice on how to improve scan speed

SCAN runs fastest when analog mode frequencies and digital/auto mode frequencies to be scanned are saved into separate banks, as switching from one complex algorithm to the other uses a lot of CPU cycles, therefore time.

LCD direction: (since v.1903A)
The LCD display can now be mirrored and flipped, for special vehicle applications.
F + 7
Press down arrow until "LCD DIRECTION" line
Turn mail dial for selection (0 = normal, 1 = mirror, 2 = vertical + mirror, 3 = 180 degrees) ENT

IF direction: (since v.1907B)

– The IF direction can now be set. Advanced only. Useful when connecting another receiver's IF OUT to the antenna input of AR-DV1, for digital decoding tests.

Press F+9
Go to the "IF DIR" line with the DOWN arrow.
Select NOR or REV by rotating the main dial.
Validate with ENT.

AR DATA EDITOR: (Requires v.1907B to support the Tetra slot number feature)

A convenient browser-based memory data editor for AR-DV1 at **http://www.aorja.com/AR-DATA-EDITOR/help.html**

- Load, edit and save your receiver's memory channel data.
- Create new frequency databases
- File format conversion between AR-DV1 and AR-DV10. In other words, a frequency database of one receiver can be opened and saved into a format the other receiver can understand.

Optional PRO feature: Tetra GSSI user group filtering: (since v.2101C)
(This PRO feature is fitted as standard on the high-end AR5700D receiver, but a chargeable option for the AR-DV1.)
– To activate this PRO feature, first you have to purchase an activation key at: **https://www.aordirect.jp/**.
Then, the 15-digit activation key has to be registered into your receiver as follows:
Press F+7
Go to the "TETRA ACTIV." line with the UP arrow.
Press ENT
Input the 15-digit key via the numeric keypad. After the last digit has been input, the screen will be automatically reverted to the standard VFO mode.

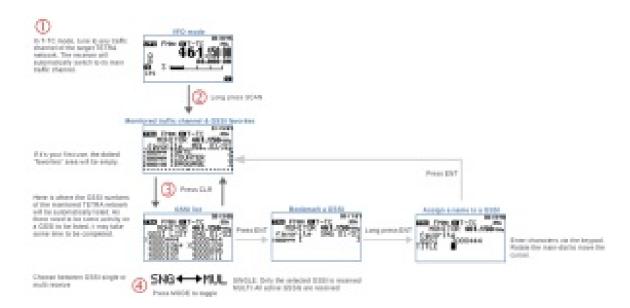To check if activation has been successful:
Press F+7
Go to the "FIRM VER." line with the UP arrow. If a "T" amends the firmware version number (for ex. 2101CT),

activation has been successful.
If unsuccessful, re-enter carefully the activation code as described above.

The activation code will remain in memory even after a firmware update (to a higher version), a system reset and a full reset.

How to use the optional TETRA GASSI user group filtering PRO feature for AR-DV1

Selected GSSI	>3000444
GSSI received now	3000109**
GSSI with activity	3000106*
Muted GSSI	X3000109
GSSI list page	01/03

To leave the GSSI function: Press VFO.

Rotate the main dial to change the selection. If in SINGLE mode, only the selected GSSI will be heard.
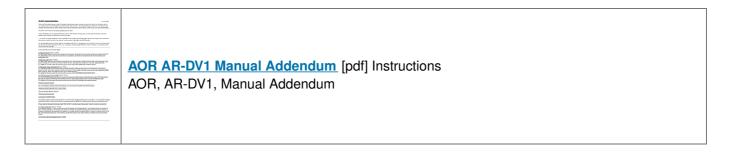
Press PASS to mute or unmute this GSSI.
GSSI list page number. Maximum 7 pages (or 50 entries).

How to delete a bookmark

Select the bookmark with the main-dial and press FUNC + CLR.

Documents / Resources

AOR AR-DV1 Manual Addendum [pdf] Instructions
AOR, AR-DV1, Manual Addendum

References

- 🌐 **AR Data Editor:Help**
- 🌐 **Firmware Updates | Download Area | Support | AOR U.S.A., INC. Authority On Radio Communications**