AOR

AR-2001

OPERATING MANUAL
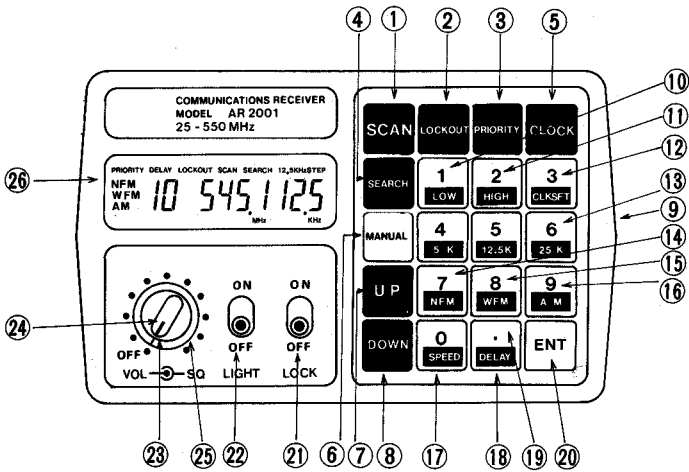
AOR, LTD.

2-6-4, MISUJI
TAITO-KU, TOKYO

OPERATING MANUAL

Thank you for your purchasing one of our
AR2001 receivers. Please read this
operating manual carefully to use the
receiver correctly.

COMMUNICATIONS RECEIVER
MODEL   AR 2001
25 - 550 MHz

PRIORITY DELAY LOCKOUT SCAN SEARCH 12,5KHzSTEP

NFM
WFM
AM

10 545.125

MHz   KHz

SCAN LOCKOUT PRIORITY CLOCK

SEARCH

1 LOW

2 HIGH

3 CLKSFT

MANUAL

4 5 K

5 12.5K

6 25 K

U P

7 NFM

8 WFM

9 A M

DOWN

0 SPEED

. DELAY

ENT

ON
OFF
VOL SQ LIGHT

ON
OFF
LOCK

V   REAR PANEL CONTROL

1. ANT   Antenna connector (BNC type)

2. LABEL

3. DC 12V   12V DC input jack

4. ATT   Attenuator (-10 db)

5. EXT SP   External speaker jack

(picture)
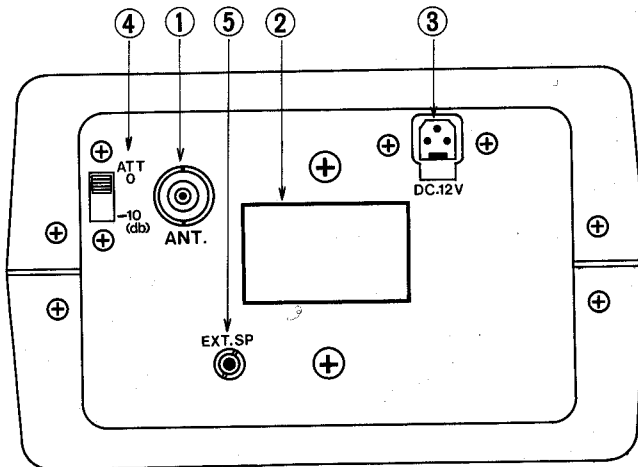
VI OPERATION

1. Connect 12V DC correctly. If you are using the optional AC adaptor, all connections must be firmly made.

2. Squelch control should be turned maximum clockwise prior to power switch is on. Turn on the power switch and rotate to 10 o'clock position.

3. The unit will automatically start scanning between CH01 and CH20 as soon as the power switch is on. (Certain frequencies are stored at factory for test.)

4. Make sure that LOCK OUT, SEARCH, PRIORITY, DELAY are OFF position (no indication on LCD display). If any of those are ON, turn it to OFF.

Squelch setting for correct operation.
The squelch control can be considered as setting the level of signal which will stop the scanning process, and allow the transmission to be heard. In the fully counterclockwise position, the squelch is open, and no scanning will take place.
Starting from the counterclockwise setting, rotate the squelch control clockwise until background noise from the speaker is cut off.
This is the most sensitive setting for the squelch control, but at this setting, it is possible for bursts of interference to stop the scanning, so it is advisable to advance the squelch slighly further clockwise to avoid this. The correct setting will be easily found by experience.
Now, your set is ready to work. Explanations as to how to input desired frequencies will follow hereunder.

** How to store frequencies in memory bank.

1. If you want to enter 128.80MHz with AM mode into CH01,depress button in the following sequence;

A. Depress [MANUAL] scan stops
B. Depress [AM][ENT] LCD shows AM mode
C. Depress [1][2][8][.][8][0][ENT]
        LCD shows 128.80 and receives signal.
D. Depress [0][1][ENT]
        The frequency is stored in CH01 and CH on LCD display ceases to flash. Note that channel input should be in 2 digit all the time like 01, 02, 03...20 instead of 1, 2, 3,...

2. Other example like 150.125MHz on NFM into CH02:

A. [MANUAL][NFM][ENT]
B. [1][5][0][.][1][2][5][ENT]
C. [0][2][ENT]

3. 468.3625MHz NFM in CH03

A. [MANUAL][NFM][ENT]
B. [4][6][8][.][3][6][2][5][ENT]
C. [0][3][ENT]

4. 82.500MHz WFM in CH04

A. [MANUAL][WFM][ENT]
B. [8][2][.][5]
C. [0][4][ENT]

CH indicator on LCD does not flash if entry of A and B have been made in the wrong order and no memory is stored. Depress ENT key and confirm CH indicator is flashing. Please restart the procedure correctly.
20 memory channels are provided.

I   MAJOR FEATURES

* Continuous coverage between 25MHz and 550MHz.
* Accurate receiving frequency by PLL synthesizer circuit.
* Multi-functional LCD display for receiving frequency, scan, mode, search, etc.
* Easy and efficient keyboard operation for frequency selection and various modes.
* Excellent electrical performances (receiving sensitivity, selectivity, spurious rejection, two-signal characteristics, etc.).
* Wide variety of receiving modes
  Wide FM (TV broadcast, FM broadcast)
  Narrow FM (Business band, Amateur Radio)
  AM (VHF/UHF Air Band, CB)
* State of art design by use of latest electronic components and circuitry.
* Go-anywhere versatility because of light compact design.

II OPERATING PRECAUTIONS

The receiver is designed for use on 12V DC only. Always use the correct power cord, making sure that positive and negative connections are made correctly. For home use, a properly regulated AC power supply is essential. The power supply voltage can be 12-14V DC output. Disconnect the power supply from the mains, if the receiver is not being used. Take care to avoid spillage or leakage of liquids into the receiver. Special care should be taken to prevent liquid entry via the power jack.

III CAUTION FOR PROPER HANDLING OF
    THE SET

Please pay your special attention to the
following regarding location of the set.

*   Avoid any place in the direct sun   or
    near   to   heating   instruments   where
    temperature may rise over 60   degrees
    centigrade.   Temperature may go up to
    100   degrees or more inside car   with
    all   windows closed if in the   direct
    sun, and this may cause   deformation
    of   the   case   and   deteriorate
    other parts of the unit.   Avoid also
    place   where   water   splash,   high
    moisture and dust are expected.

*   Clean the set with soft cloth.   Never
    use   any chemicals to clean   the   set
    like thinner or benzene,   etc.   which
    damage the cabinet surface.

*   We   recommend   you use   an   external
    aerial   when   you   wish   to   pick   up
    signals   from   a   distance,   or   weak
    signals.   Your dealer can advise   on
    suitable aerials.   When external aerial
    is erected,   be careful not to   erect
    close to nearby power lines, telephone
    lines or buildings.

*   For your reference, under the present
    Japanese   wireless radio code,   it is
    prohibited   to   monitor   transmission
    conducted between specific parties if
    the purpose is to reveal its presence
    or to misuse the contents.

IV.   CONTROL

1. [SCAN]   Key to start scanning
2. [LOCK OUT] Key to delete unwanted
                 channels   for   programmed
                 scan
3. [PRIORITY] Key to ON/OFF priority
                 channel
4. [SEARCH]   Key to ON/OFF search
5. [CLOCK]   Key to ON clock
6. [MANUAL]   Key to stop various
                 functions, and to input
                 manual channel selection
7. [UP]   Key to shift to higher
                 frequency
8. [DOWN]   Key to shift to lower
                 frequency
9. [1-0]   Key to input numeral
                 information like frequency
                 and time
10. [LOW]   Key to set lower frequency
                 for programmed search
11. [HIGH]   Key to set higher frequency
                 for programmed search
12. [CLOCK SET] Key to set time
13. [5KHz,12.5KHz,25KHz]
                 Key to select spacing of
                 frequency to search
14. [NFM]   Narrow FM reception
15. [WFM]   Wide FM reception
16. [AM]   AM reception
17. [SPEED]   Key to select speed of
                 scan and search, etc.
18. [DELAY]   Key to hold frequency for
                 a short time.
19. [.]   Decimal point
20. [ENT]   Entry key to input frequency,
                 channel and time, etc.
21. [LOCK]   Key to lock other keyboard
                 functions
22. [LIGHT]   Illuminate LCD display
23. [POWER SWICH]
24. [VOLUME CONTROL]
25. [SQUELCH]
26. [LCD]   Display of frequency,
                 channel number, etc.

** Priority

The set is provided with a priority channel. Enter frequency you want to monitor all the time into channel 01 and depress PRIORITY key. Channel 01 will be monitored at approx. 2 second interval checking for activity. If a signal appears on Channel 01, the receiver will automatically stop scanning on Channel 01. PRIORITY indication appears on LCD display when it is engaged. P indication also appears alongside CH number when a signal is received on priority channel.

** Delay

DELAY key is used to delay resumption of scanning for approx. 2.5 sec. during a pause in transmission.

** Time display and how to set clock

24-Hour clock is built-in feature of the AR-2001

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10  15  20   represents 10h 15m 20sec AM
18  45  50   represents  6h 45m 50sec PM
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To display time on LCD, depress:

A. [MANUAL]
B. [CLOCK]

Time will not be displayed if PRIORITY is engaged. Disengage PRIORITY in this case.

To release time display, depress any key in the followings;

[ENT]   Resume frequency
[SCAN]   Resume scanning
[SEARCH]   Resume searching

To enter time, for example, 7h 15m 20s AM, depress key in the following sequence;

A. [MANUAL][CLKSET][ENT]
B. [0][7][1][5][2][0]
C. [ENT] synchronizing with 10h 15m 20s
         by official time source

Another example, 6h 45m 50s PM

A. [MANUAL][CLKSET][ENT]
B. [1][8][4][5][5][0]
C. [ENT]

Time once stored will be retained by memory back-up system, for approx. one week even after power is disconnected though LCD does not show time hereafter until power is reconnected.

VII. SPECIFICATIONS

1. Receiving frequency :   25MHz-550MHz
2. Receiving sensitivity :
           Narrow FM 0.3uV (12 db SINAD)
           Wide   FM 1.0uV (12 db SINAD)
           AM   0.5uV (10 db S/N)
3. Receiving selectivity :
           NFM +-7.5KHz @ 6 db +-20KHz
               @ 70 db
           WFM +-50KHz @ 6 db +-250KHz
               @ 60 db
           AM +-5KHz   @ 6 db +-10KHz
               @ 70 db
4. Image and spurious rejection : -50 db
5. Number of memory channel: 20 channels
6. Intermodulation :   -50 db
7. Receiver circuitry : PLL Synthesizer
8. Scanning rate :   5 channels/sec.
9. Searching rate :   1MHz/6 sec.
10.Audio output :   1W at 10% distortion
11.Power requirements :   12-14V DC
12.Method of display :   LCD
13.Dimensions :   138 x 80 x 200mm
14. Weight :   1.1kgs

VIII. OPTIONAL ACCESSORIES

1. External speaker

2. Mobile mount bracket

3. DC power lead with car cigar lighter plug

4. External AC adaptor

** Selection of receiving frequency

If you want to listen to TV sound which
is on 95.75MHz, depress button in the
following sequence;

    A.[MANUAL]
    B.[9][5][.][7][5][ENT]
    C.[WFM][ENT]

** How to recall memory channel

In case you wish to recall frequency
stored in memory bank, for example
channel 15, depress key as follows;

    A.[MANUAL]
    B.[1][5][MANUAL]

(caution)
Do not enter 00 and any figure between
21 and 99 in the above process. Built-
in computer will transfer the frequency
once stored in a memory channel to
channel 20 to be retained if any of
those figures has been mistakenly
entered.

** Memory back-up

A specially made capacitor is employed
with the set to preserve frequencies in
the memory bank. There is no need to
replace battery for memory back-up like
other scanners in the similar class.
Please, however, note that frequency in
memory channel will vanish if power is
disconnected for approx. more than one
week owing to discharging of the
capacitor.

** Scanning

Any frequencies between 25MHz and 550MHz
can be stored in 20 memory channels with
designated mode. You can watch
frequencies in the memory channels
simply by scanning.

  * [SCAN] key allows to start scanning.
    PRIORITY must be OFF to start scan-
    ning.

  * Depress [MANUAL] key to stop scan-
    ning.

  * You can advance memory channel
    manually by depressing [MANUAL]
    key. Please refer to LOCK OUT for
    programmable scan.

A "beep" will follow each keystroke
entry indicating correct entry with high
tone and wrong entry with low tone.

** Search

The AR-2001 is capable of searching
either continuously from 25MHz to 550Mhz
or any programmed frequency range as you
desire in 5 or 12.5 or 25KHz step at
your choice.

1. Continuous search
   To search between 25MHz and 550MHz in
   5KHz step for example, depress:

   A. [MANUAL]
   B. [5KHz][ENT]
   C. [SEARCH]

2. Programmed search
   To search between 360MHz and 400MHz
   in 12.5KHz step with NFM, depress:

   A. [MANUAL]
   B. [LOW][ENT]
   C. [3][6][0][.][0][ENT]
   D. [HIGH][ENT]
   E. [4][0][0][.][0][ENT]
   F. [NFM][ENT]
   G. [12.5KHz][ENT]
   H. [SEARCH]

   Direction of search can be determined
   by depressing either UP or DOWN key.
   To change search speed, depress SPEED
   key.
   2 selectable search speeds are pro-
   vided.

** Lock out

You can program any combination of
memory channels you want to scan by
using LOCK OUT key. For example, if you
want to delete channel 10 from the
scanning operation, depress:

A. [MANUAL]
B. [1][0][MANUAL]
C. [LOCK OUT]

LOCK OUT will apear on LCD display, and
channel 10 will be jumped over. To
release LOCK OUT, repeat the same key
entry. LOCK OUT will disappear on LCD
display. If you delete all 20 channels
from scan operation, scan does not
function at all with PASS on LCD
display.

IX. TROUBLE SHOOTING

If your receiver does not function cor-
rectly, please check the following
points before sending it for repair;

1. Power is not supplied.

   * Power plug is not firmly connected.
   * Power cord, if AC adaptor in use, is
     not properly connected at power point.
   * Reverse polarity.

2. No audio output

   * Power switch is off.
   * Volume control is not sufficiently
     turned.
   * No noise is heard though squelch
     knob is fully turned counter-clock
     -wise.
   * Earphone plug is inserted in the
     external speaker jack.

3. The set does not function while
   operating.

   * Depress MANUAL key, and try to
     enter various inputs.
   * Turn squelch knob fully clockwise
     if scan and search do not function.

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