

YAESU

COMMUNICATIONS RECEIVER

VR-500

OPERATING MANUAL

YAESU MUSEN CO., LTD.

1-20-2 Shimomaruko, Ota-Ku, Tokyo 146-8649, Japan

YAESU U.S.A.

17210 Edwards Rd., Cerritos, CA 90703, U.S.A.

YAESU EUROPE B.V.

P.O. Box 75525 1118 ZN, Schiphol, The Netherlands

YAESU UK LTD.

Unit 12, Sun Valley Business Park, Winnall Trading Estate
Winchester, Hampshire, SO23 0LB, U.K.

YAESU GERMANY GmbH

Am Kronberger Hang 2, D-65824 Schwalbach, Germany

YAESU HK LTD.

11th Floor Tsim Sha Tsui Centre, 66 Mody Rd.,
Tsim Sha Tsui East, Kowloon, Hong Kong

YAESU MUSEN CO., LTD.

FCC ID: K66VR-500

EXHIBIT #: 6

Contents

Introduction	1	Memory Mode	17
Controls & Connections	2	Memory Storage	17
Display Icons & Indicators	3	Simple Storage	17
Keypad Functions	4	Designated Memory Storage	18
Accessories & Options	6	Memory Recall	19
Installations of Accessories	7	Labeling Memories	20
Battery Installation	7	Memory Channel Scan	21
Low Battery Indication	7	Preferential Memory Scan (PMS)	21
Antenna Installation	7	Memory Bank Scanning	22
Belt Clip Installation	8	Mode Scan	23
AC Operation using the optional NC-60 AC Adapter	8	Deleting Memory Channels	23
BASIC Operation	9	Alpha-Numeric Memory Recall	24
Turning the Power On/Off	9	Memory Channel Copying	25
Adjusting the Volume and Squelch	9	Memory Channel Swap	25
RF Squelch System Setup	9	Memory Bank Copy	26
Mode Selection	9	Memory Bank Swap	26
Frequency Navigation	10	Clearing of a Memory Bank	27
Tuning DIAL	10	Memory Channel Check	27
Direct Keypad Frequency Entry	10	Band Scope	28
VFO Search	11	To Activate the Band Scope	29
Changing the Direction of VFO		Dual Watch	30
Search Scanning	11	Priority Monitoring	32
How to Skip (Omit) a Frequency		Smart Search™	33
During VFO Search	12	Reset	35
Pre-Programmable Frequency Search	13	System Reset	35
Changing the Channel Steps	15	All Reset	35
Preset Mode	16	Set Mode	36
		Specifications	43



Introduction

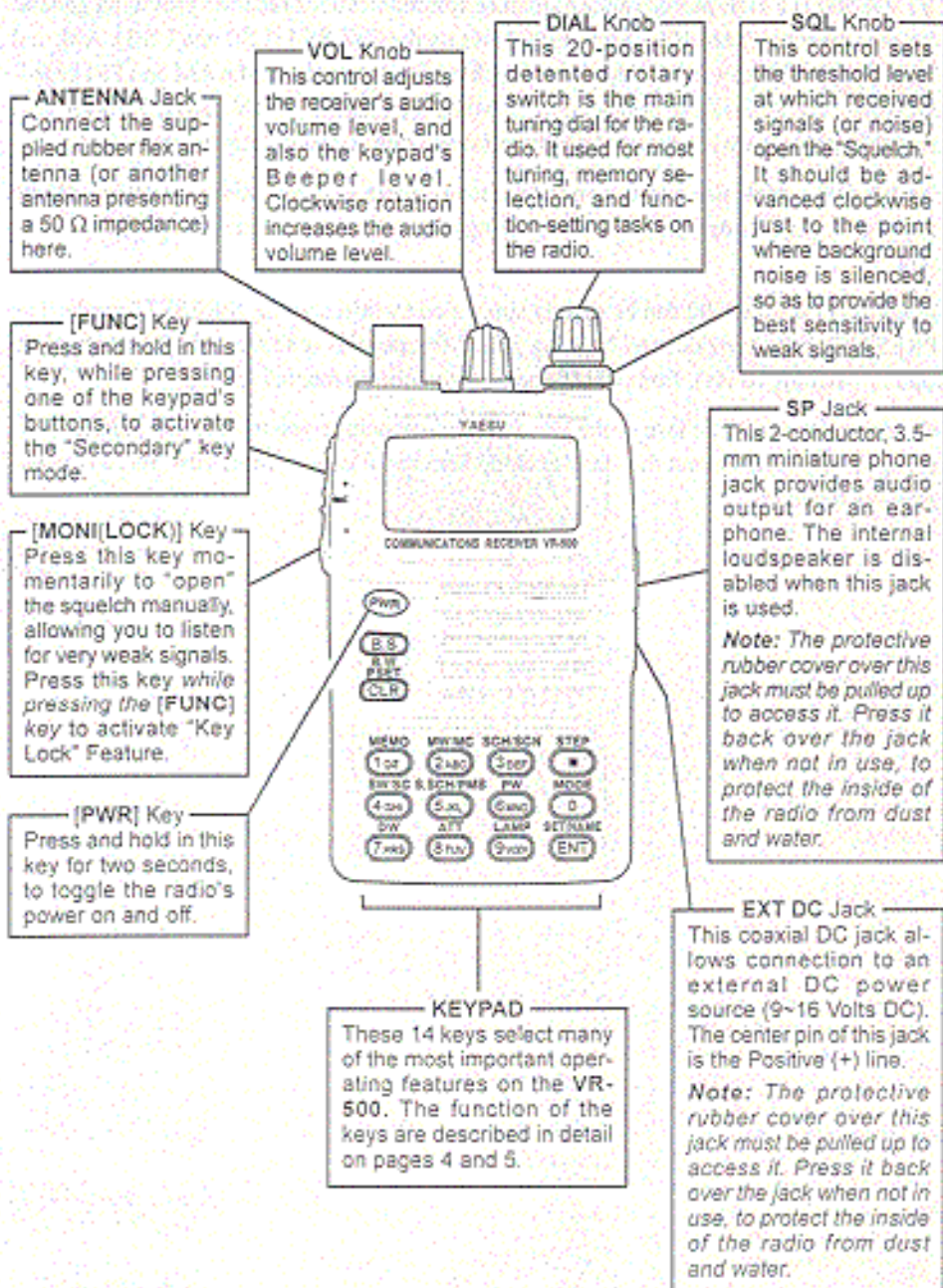
The VR-500 is a high-performance miniature communications receiver providing general coverage reception from 100 kHz to 1300 MHz on the CW, SSB (LSB and USB), AM, and FM (Wide and Narrow bandwidths) modes (this coverage includes the AM and FM broadcast bands, HF Short-wave Bands up to 16 MHz, VHF and UHF TV bands, the VHF AM aircraft band, and a wide range of commercial and public safety frequencies!).

The VR-500's small size allows you to take it anywhere - hiking, skiing, or while walking around town, and its operating flexibility brings the user many avenues of operating enjoyment.

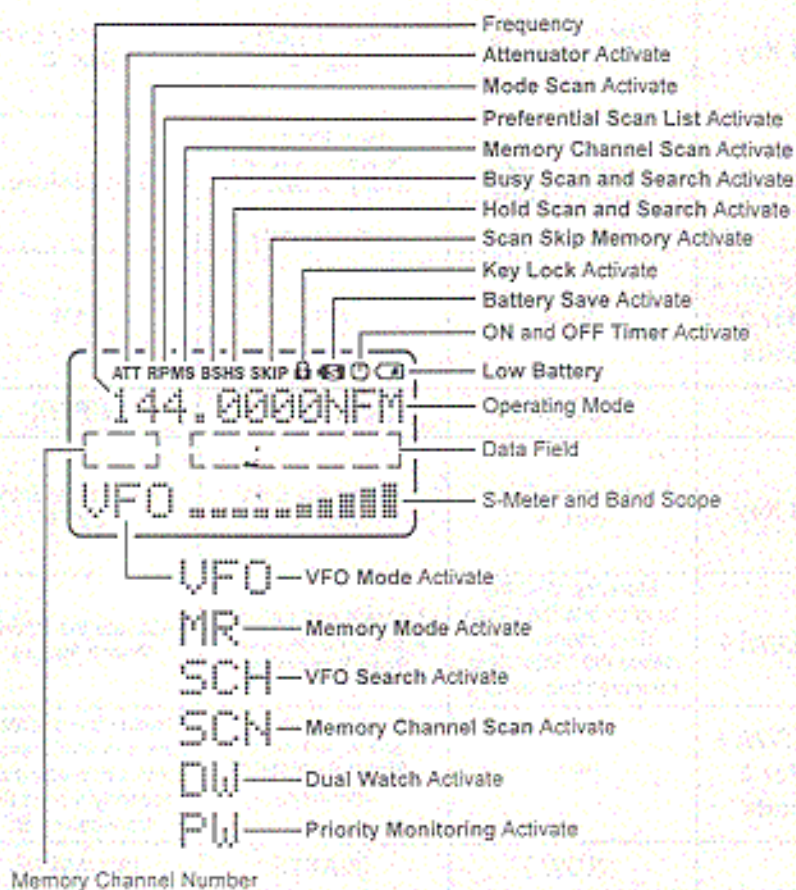
Operation of the VR-500 can be greatly simplified by utilizing the "PRESET" mode. The "PRESET" mode provides ten "starting point" frequencies (one frequency in each of ten popular listening bands), from which you may then begin manual tuning.

We appreciate your purchase of the VR-500, and encourage you to read this manual thoroughly, so as to learn about the many exciting features of your exciting new Yaesu communications receiver!

Controls & Connections



Display Icons & Indicators



Keypad Functions

	[1(MEMO)]	[2(MW/MC)]	[3(SCH/SCN)]
Press Key	Frequency Entry Digit "1"	Frequency Entry Digit "2"	Frequency Entry Digit "3"
Press [F/W] +	Switch to the "Memory" Mode.	Store the VFO frequency into the memory, or delete the current memory channel's data.	Start scanning.
Press [F/W] + Key for 2 seconds	None	None	None
	[4(SW/SC)]	[5(S.SCH/PMS)]	[6(PW)]
Press Key	Frequency Entry Digit "4"	Frequency Entry Digit "5"	Frequency Entry Digit "6"
Press [F/W] +	Store the VFO frequency into the "Scan Skip" memory, or delete the "Scan Skip" memory channel data.	Program and activate Preferential Memory Scan™ operation.	Activate the Priority Watch feature.
Press [F/W] + Key for 2 seconds	None	Program and activate Smart SearCH™ operation.	Display the operating time and total transmit time since you most recently turned the transceiver on.
	[7(DW)]	[8(ATT)]	[9(LAMP)]
Press Key	Frequency Entry Digit "7"	Frequency Entry Digit "8"	Frequency Entry Digit "9"
Press [F/W] +	Activate the Dual Watch feature.	Engage the receiver front-end attenuator.	Activate the back-lighting lamp for the display and keypad keys for 5 seconds.
Press [F/W] + Key for 2 seconds	Store the VFO frequency pair for the Dual Watch feature into the Dual Watch Memory channel.	None	None

Keypad Functions

[.(STEP)]	[B.S(B.W)]	
Input of the "Decimal Point" frequency entry digit (".").	Activate the Band Scope feature.	Press Key
Select the synthesizer steps to be used during VFO operation.	Select the Band Scope sweep width.	Press [F/W] +
None	None	Press [F/W] + Key for 2 seconds
[0(MODE)]	[CLR(P.SET)]	
Frequency Entry Digit "0"	Cancel the frequency entry or Menu mode setting.	Press Key
Select the operating (receiving) mode.	Toggle the operating mode between the "Preset Mode" and the "Normal Mode."	Press [F/W] +
None	None	Press [F/W] + Key for 2 seconds
[ENT(SET/NAME)]	[MONI(LOCK)]	
Enter the frequency entry digit into the VFO.	"Open" the squelch manually	Press Key
Activate the "Set" (Menu) mode, or enable programming of the Alpha/Numeric name tag for the current memory channel.	Activate "Key Lock" feature.	Press [F/W] +
None	None	Press [F/W] + Key for 2 seconds

Accessories & Options

ACCESSORIES SUPPLIED WITH THE VR-500

Antenna
Belt Clip
Hand Strap
Operating Manual
Warranty Card

AVAILABLE OPTIONS FOR YOUR VR-500

- | | |
|-----------|------------------------------|
| ① NC-60 | AC Adapter |
| ② E-DC-5B | DC Cable w/Noise Filter |
| ③ E-DC-6 | DC Cable; plug and wire only |
| ④ CSC-72 | Soft Case |
| ⑤ CT-35 | Cloning Cable |



Availability of accessories may vary. Some accessories are supplied as standard per local requirements, while others may be unavailable in some regions. Consult your Yaesu Dealer for details regarding these and any newly-available options. Connection of any non-Yaesu-approved accessory, should it cause damage, may void the Limited Warranty on this apparatus.

Installations of Accessories

BATTERY INSTALLATION

- ❑ Referring to Figure 1, slide the Battery Cover toward the bottom to remove it.
- ❑ Referring to Figure 2, insert 2 fresh AA batteries into the Battery Holder. When installing batteries, insert the (-) end first, then press in the (+) end so the battery snaps into place. Always replace two batteries at the same time.
- ❑ Replace the Battery Cover, as shown in Figure 3.



Figure 1



Figure 2

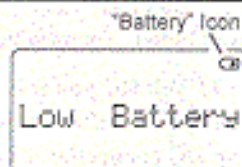


Figure 3

Notes: If you do not use the VR-500 for a long time, remove the Batteries from the radio, as battery leakage could cause damage to the VR-500.

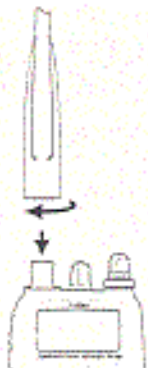
LOW BATTERY INDICATION

When the battery voltage becomes too low, the display will indicate "Low Battery" and "Battery" icon, indicating the batteries should be replaced. As battery voltage drops further, the VR-500 will shut off.



ANTENNA INSTALLATION

- ❑ To attach the supplied antenna to the VR-500, grasp the base of the antenna firmly, and exert a moderate "pinching" pressure on the base as you press the antenna onto the radio's antenna connector. While exerting this pressure, rotate the antenna *clockwise* 1/4 turn to lock the antenna in place.
- ❑ To remove the antenna from the VR-500, grasp the base of the antenna firmly, and pinch the base of the antenna while rotating the antenna *counter-clockwise* 1/4 turn. You may now lift the antenna away from the radio.



Installations of Accessories

BELT CLIP INSTALLATION

To install the Belt Clip, first place the Hand Strap into the hole at the top of the Belt Clip, then insert the mounting screw through the belt clip, and affix it snugly to the mounting hole on the back of the **VR-500**.

Do not install the supplied Belt Clip Mounting Screw if you are not installing the Belt Clip! The screw will cause a "Short circuit" to the internal circuitry, causing serious damage!

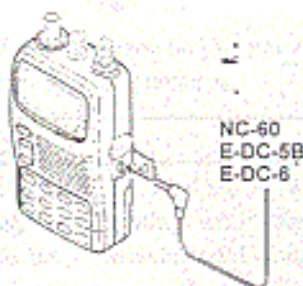


AC OPERATION USING THE OPTIONAL NC-60 AC ADAPTER

The **VR-500** may be operated from your house current by use of the optional **NC-60** AC Adapter.

To use the **NC-60**, turn the radio off, then plug the miniature connector of the AC Adapter into the **EXT DC** jack on the side of the radio. Now plug the AC Adapter into the wall outlet. You may now turn on the radio.

If 12 Volt DC power is available, the optional **E-DC-5B** or **E-DC-6** DC Cable may be used for operation. When making DC connection via the **E-DC-5B** or **E-DC-6** DC Cable, be absolutely certain to observe the proper voltage level and polarity guidelines. Do not connect this radio directly to a DC source which exceeds 15.0 Volts DC, nor to AC power of any kind.



BASIC Operation

TURNING THE POWER ON/OFF

- ① Press and hold the orange **[PWR]** Key for two seconds to turn the radio on or off.
- ② When you turn on the radio, a "Welcome" message will appear on the display for two seconds. After this interval, the frequency display will appear. Using the Menu system, you can change the "Welcome" message yourself; see page 40 for details.

ADJUSTING THE VOLUME AND SQUELCH

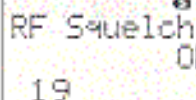
- ① Rotate the **VOL** knob to adjust the receiver's audio volume. Clockwise rotation of the **VOL** knob increases the volume level.
- ② The VR-500's Squelch system allows you to mute the receiver's audio output when no signals are being received. This reduces battery consumption, and reduces annoying background noise.
- ③ To set the squelch, turn the **SQL** knob fully counter-clockwise, then turn it clockwise just past the point where background noise is silenced. Do not rotate the **SQL** knob much beyond this threshold point; if you do, the receiver will respond to weak signals.

RF SQUELCH SYSTEM SETUP

A special "RF Squelch" feature is provided on this radio. This feature allows you to set the squelch so that only signals exceeding a user-defined signal level will open the squelch.

To set up the RF Squelch circuit for operation, use the following procedure:

- ① From the VFO mode, press the **[ENT(SET)]** key *while pressing the* **[FUNC]** key to activate the "Set" (Menu) mode.
- ② Rotate the **DIAL** knob to select Menu #19 "[RF Squelch]."
- ③ Rotate the **DIAL** knob *while pressing the* **[FUNC]** key to select the desired signal strength level for the RF Squelch threshold (1 - 9 or OFF).
- ④ Press the **[ENT(SET)]** key *while pressing the* **[FUNC]** key to save your new setting and exit to normal operation.

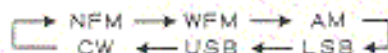


RF Squelch
OFF
19

MODE SELECTION

The **VR-500** automatically selects a default receiving mode according to the frequency band on which you are operating. However, many bands (especially HF Shortwave) may use a variety of transmission modes in a particular frequency segment.

If you want to change the receiving mode, press the **[0(MODE)]** key *while pressing the* **[FUNC]** key. The receiving modes available are:



BASIC Operation

FREQUENCY NAVIGATION

Tuning DIAL

Rotating the **DIAL** allows frequency tuning in the steps pre-programmed at the factory. Clockwise rotation of the **DIAL** causes the radio to be tuned to toward a *higher* frequency, while counter-clockwise rotation will *lower* the operating frequency.

If you rotate the **DIAL** while pressing the [**FUNC**] key, the frequency will change in 1 kHz steps (SSB/CW) or 1 MHz steps (AM/NFM/WFM). This feature is extremely useful for making rapid frequency excursions over the wide tuning range of the radio. This step size "1 MHz" can be changed; see the "Changing the Channel Steps" section on page 15 for details.

Direct Keypad Frequency Entry

The desired operating frequency may be entered directly from the keypad.

To enter a frequency from the keypad:

- ① Enter the "MHz" portion of the frequency on which you wish to operate.
- ② Enter the decimal point after the "MHz" portion by pressing the [**• (STEP)**] key.
- ③ Enter four more digits to complete the frequency.
- ④ If there are "zeroes" at the end of the frequency, you may press the [**ENT (SET/NAME)**] key after the final non-zero digit.

Examples:

To enter 146.5200 MHz: Press [**1**] → [**4**] → [**6**] → [**•**] → [**5**] → [**2**] → [**0**] → [**0**].

To enter 810 kHz: Press [**•**] → [**8**] → [**1**] → [**0**] → [**0**].

To enter 445.4000 MHz: Press [**4**] → [**4**] → [**5**] → [**•**] → [**4**] → [**ENT**].

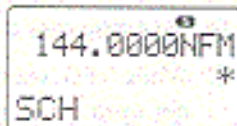
BASIC Operation

VFO SEARCH

The VFO Search feature causes the radio to scan the band, looking for active frequencies.

Before initiating a VFO Search, set the Squelch so that background noise is silenced. If you are hearing background noise, the VFO Search feature will not initiate scanning.

From the VFO mode, press the [3(SCH/SCN)] key *while pressing the [FUNC] key*. The radio will initiate a VFO Search, tuning toward a *higher* frequency, and will stop when it receives a signal strong enough to break through the Squelch threshold. The radio will then hold on that frequency according to the setup of the "RESUME" mode.



To verify and/or modify the "RESUME" mode, again press the [3(SCH/SCN)] key *while pressing the [FUNC] key*. The current "RESUME" mode is indicated at the top of the Display (except for "Pause," which is the default setting).

The following "RESUME" modes are available:

Pause → Busy → Hold → Pause → ...

Pause (Default): In this mode, the VFO search will halt on a signal it encounters, and will hold there for 5 seconds. If you do not take action to disable the VFO search within that time period, the VFO search will resume even if the station is still active.

Busy: In this mode, the VFO search will halt on a signal it encounters. Two seconds after the carrier has dropped because the other station(s) ceased transmission, the VFO search will resume. In this mode, the "BS" (Busy Search) icon will appear at the top of the display.

Hold: In this mode, the VFO search will halt on a signal it encounters. It will not restart unless you re-initiate a VFO search. In this mode, the "HS" (Hold Search) icon will appear at the top of the display.

To stop the VFO search manually, just rotate the **DIAL** one click.

Changing the Direction of VFO Search Scanning

If you wish to reverse the direction of the scan (i.e. toward a *lower* frequency, instead of a *higher* frequency), rotate the **DIAL** one click to stop the VFO search, then rotate the **DIAL** one click *in the counter-clockwise direction*. The VFO search direction will be reversed.

*Note: If VFO Search has "paused" on a busy channel, it is only necessary to rotate the **DIAL** one click in the counter-clockwise direction.*

To revert to VFO search toward a *higher* frequency once more, rotate the **DIAL** one click, then rotate it one click clockwise. If paused on a busy channel, just rotate the **DIAL** one click clockwise.

Press the [CLR(P.SET)] key to cancel the VFO search.

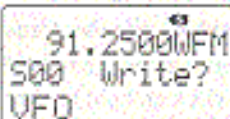
BASIC Operation

How to Skip (Omit) a Frequency During VFO Search

If the VFO search stops on a frequency or frequencies that you do not need (such as a spurious radiation from a television), such frequencies can be "skipped" during VFO Search scanning. This is accomplished by storing these frequencies in a special "Frequency Skip Memory Bank" reserved for this purpose.

To skip a frequency during VFO Search scanning:

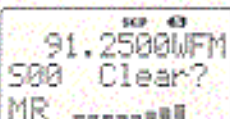
- ① While VFO Search is stopped on the frequency that you do not need, press the **[4(SW/SC)]** key *while pressing the [FUNC] key*. The display will indicate "Snn WRITE?" as a request for command confirmation (see next step).
- ② Now, press the **[4(SW/SC)]** key *while pressing the [FUNC] key again*, to store the frequency into the VFO Frequency Skip Memory (VFO Frequency Skip Memory Write), it is to be ignored during VFO search.



Note that the VR-500 has 100 VFO Frequency Skip Memory Channels (channel number "S00 ~ S99").

To re-institute the frequency into the VFO search loop:

- ① Press and hold in the **[FUNC]** key, then press the **[1(MEMO)]** key, repeatedly if necessary, to recall the VFO Frequency Skip Memory mode ("Snn" will appear at the left side of the display).
- ② Rotate the **DIAL** knob to select the channel to be re-instituted.
- ③ Press the **[4(SW/SC)]** key *while pressing the [FUNC] key*. The display will indicate "Snn CLEAR?" as a request for command confirmation (see next step).
- ④ Now, press the **[4(SW/SC)]** key *while pressing the [FUNC] key again*; this action will *delete* the channel from the VFO Frequency Skip Memory, so as to *re-institute* the frequency into the VFO Search scanning loop.



BASIC Operation

Pre-Programmable Frequency Search

The VR-500 allows you to program up to ten band segments within which VFO Search scanning can be limited. This allows your radio's search to be concentrated on the most active band segments in your local area, without wasting time in unused frequency segments.

To confine your search within one of the pre-programmed segments, you must first set Menu #12 ("[Search Mode]") to the "LIMIT" option, per the following procedure:

- ① Press and hold in the [FUNC] key; while holding it in, press the [ENT(SET/NAME)] key to activate the "Set" (Menu) mode.
- ② Rotate the DIAL knob to select Menu #12 [Search Mode].
- ③ Press and hold in the [FUNC] key; while holding it in, rotate the DIAL knob to select "LIMIT" as the VFO Search mode.
- ④ Press the [CLR(P.SET)] key to exit to the VFO mode.

Search Mode
LIMIT
12

The VR-500 has been pre-programmed at the factory with default band limits. These are grouped as "Search Band Memories" per the list below:

Search Band Memory #	Pre-Programmed Frequency Range	Search Band Memory #	Pre-Programmed Frequency Range
0	0.5200 ~ 1.8000 MHz	5	50.0000 ~ 54.0000 MHz
1	1.8000 ~ 3.6000 MHz	6	88.0000 ~ 108.0000 MHz
2	3.6000 ~ 10.5000 MHz	7	144.0000 ~ 148.0000 MHz
3	10.500 ~ 21.0000 MHz	8	430.0000 ~ 450.0000 MHz
4	21.0000 ~ 30.0000 MHz	9	1240.0000 ~ 1300.0000 MHz

Here is the procedure for initiating VFO Search Scanning within one of the above bands:

- ① Press and hold in the [FUNC] key; while holding it in, press the [3(SCH/SCN)] key; the radio will begin VFO Search Scanning (at this point, the frequency range is unimportant).
- ② While VFO Search is active, press (momentarily) the key corresponding with the *Search Band Memory* as shown above. The VFO Search will now shift to the band segment within the *Pre-Programmed Frequency Range* associated with that memory number. For example, if you press [7] after initiating VFO Search Scanning, the search will be limited to the frequency range 144.0-148.0 MHz. While VFO Search Scanning is in progress, you may change ranges by just pressing one of the numbered keys momentarily; the radio will jump to that range instantaneously, and will immediately begin VFO Search Scanning inside the new range.
- ③ Other aspects of the VFO Search feature within the pre-programmed band limits, such as the "Resume" mode, are the same as during "regular" VFO Search Scanning.
- ④ Press the [CLR(P.SET)] key to halt the search and return to manual tuning via the DIAL knob.

144.0000NFM
SCH
7

BASIC Operation

You can customize the Pre-Programmed Frequency Range for any of the bands shown above, so as to allow you to scan just the band segments you want.

To program the Pre-Programmed Frequency Ranges :

- ① Select the *Lower Frequency Limit* for the Pre-Programmed Frequency Range using direct keypad frequency entry or the main tuning **DIAL**.
- ② Press and hold in the **[FUNC]** key; while holding it in, press the **[3(SCH/SCN)]** key for 2 seconds. The display will indicate "SCH A Write!" briefly, then the frequency display will return.
- ③ Next, select the *Higher Frequency Limit* for the Pre-Programmed Frequency range.
- ④ Press and hold in the **[FUNC]** key; while holding it in, press the **[3(SCH/SCN)]** key for 2 seconds. The display will indicate "SCH B Write!"
- ⑤ Now press the **[3(SCH/SCN)]** key *momentarily* while pressing the **[FUNC]** key. This activates the VFO Search Scanning mode.
- ⑥ Finally, press and hold in (for 2 seconds) in the numbered key of the Search Band Memory into which you wish to store these band limits.

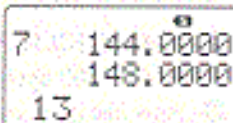
Example: Store the band limits 9.450 MHz and 9.850 MHz into Search Band Memory #2.

- ① Select 9.450 MHz as the *Lower Frequency Limit* using direct keypad frequency entry. Press **[9] → [.] → [4] → [5] → [ENT(SET/NAME)]**.
- ② Press and hold in the **[FUNC]** key; while holding it in, press the **[3(SCH/SCN)]** key for 2 seconds. The display will indicate "SCH A Write!" briefly, then the frequency display will return.
- ③ Next, select 9.850 MHz as the *Higher Frequency Limit*.
- ④ Press **[9] → [.] → [8] → [5] → [ENT(SET/NAME)]**.
- ⑤ Press and hold in the **[FUNC]** key; while holding it in, press the **[3(SCH/SCN)]** key for 2 seconds. The display will indicate "SCH B Write!"
- ⑥ Now press the **[3(SCH/SCN)]** key *momentarily* while pressing the **[FUNC]** key. This activates the VFO Search Scanning mode.
- ⑦ Finally, press and hold in the **[2(MW/MC)]** key for 2 seconds.

BASIC Operation

You can check the frequency ranges of the Search Band Memories quickly, to see if you want to re-program other ranges. To do this:

- ① From the VFO mode, press the [ENT(SET)] key while pressing the [FUNC] key to activate the "Set" (Menu) mode.
- ② Rotate the **DIAL** knob to select Menu #13 [SRCH Memory].
- ③ Rotate the **DIAL** knob while pressing the [FUNC] key to review the programming of the Search Band Memories. The Search Band Number (0 – 9) will appear at the left side of the display, while the current frequency range for that Search Band Memory will appear at the right side of the display.
- ④ Press the [ENT(SET)] key while pressing the [FUNC] key to exit to normal operation.



CHANGING THE CHANNEL STEPS

This radio's synthesizer provides the option of utilizing channels steps of 0.05/0.1/1/5/6.25/9/10/12.5/15/20/25/30/50/100 kHz per step, as well as an automatic step selection based on the current listening frequency ("AUTO").

To change the Channel steps:

- ① Press the [• (STEP)] key (momentarily) while pressing the [FUNC] key.
- ② Rotate the **DIAL** knob to select the new step size.
- ③ Rotate the **DIAL** knob while pressing the [FUNC] key to select the new step size.
- ④ Press the [• (STEP)] key while pressing the [FUNC] key to save the new setting and exit to normal operation.



BASIC Operation

PRESET MODE

Operation of the VR-500 can be greatly simplified by utilizing the "PRESET" mode. The PRESET mode provides ten "starting point" frequencies (one frequency in each of ten popular listening bands), from which you may then begin manual tuning.

To operate in the PRESET mode:

- ① Press the [CLR(P.SET)] key (momentarily) while pressing the [FUNC] key to change the VR-500 operating mode to PRESET.
- ② Now just press one of the numbered keys on the keypad to recall the Pre-Programmed Frequency corresponding to that key, as shown below.

Channel Number	Pre-Programmable Frequency
1	0.5200 MHz (AM)
2	3.5000 MHz (LSB)
3	7.0000 MHz (LSB)
4	14.0000 MHz (USB)
5	50.0000 MHz (CW)
6	88.0000 MHz (WFM)
7	144.0000 MHz (CW)
8	430.0000 MHz (NFM)
9	1240.0000 MHz (NFM)
*	Weather Channel
0	This is a special "PRESET" key which toggles through the Pre-Programmed Frequencies, per the following selections:

520 kHz(AM) → 1.800 MHz(AM) → 3.8000 MHz(LSB)

1240.0000 MHz(NFM) ↓ 10.5000 MHz(AM)

430.0000 MHz(NFM) ↓ 21.0000 MHz(USB)

144.0000 MHz(CW) ← 88.0000 MHz(WFM) ← 50.0000 MHz(CW)

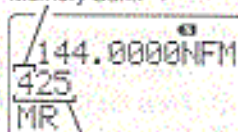
- ③ Once you have chosen a PRESET band segment, you can move off of the Pre-Programmed Frequency by rotating the DIAL knob. However, you cannot perform direct frequency entry, as each keystroke will select a new Pre-Programmed band segment.
- ④ Press the [CLR(P.SET)] key again, while pressing the [FUNC] key, to disable the PRESET mode and return to normal operation.

Memory Mode

The VR-500 provides 1000 “standard” memory channels, numbered “000” through “999.” Memory channels may be used to store frequencies of particular interest, for convenient recall without the need to scan through an entire operating band.

These memories are partitioned into ten Memory Banks, each holding up to 100 memory channels. The Memory Bank number is the first digit of the Memory Channel number, so Memory Channel 005 is in Memory bank “0,” while Memory Channel 425 is in Memory Bank “4.”

Memory Bank “4”



Memory Channel “425”

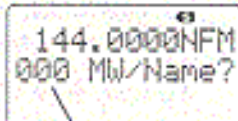
MEMORY STORAGE

Two forms of memory storage are available on the VR-500:

- “Simple” memory storage automatically memorizes the desired frequency into the next-available unused memory channel register (without regard to any particular memory channel number).
- “Designated” memory storage allows you to assign the frequency data to any desired memory channel number.

Simple Storage

- ① While operating in the VFO mode, select the desired frequency and reception mode (AM, NFM, etc.) for the station to be memorized.
- ② Press and hold in the [FUNC] key, then press the [2(MW/MC)] key momentarily. The microprocessor will automatically select the next-available “open” memory channel (a memory register on which no data has been stored). On the left side of the display, a three-digit number will appear, indicating the channel number which will be used for channel data storage. On the right side, “MW/NAME?” will appear (“MW” stands for “Memory Write”).
- ③ If you wish to append an alpha-numeric label (name) to the channel, press and hold in the [FUNC] key, then press the [ENT(SET/NAME)] key. Now skip to step ③ of the Labeling Memories section below, and perform steps ③ through ⑤.
- ④ Now, press the [2(MW/MC)] key once more while still holding in the [FUNC] key. This stores the frequency into the memory. “WRITE!” will appear on the right side of the display, to confirm that the frequency data was successfully stored.



“Open” Memory Channel

Note: You must press the [2(MW/MC)] key per this step whether or not you are appending an alpha-numeric label to a memory.

Memory Mode

Designated Memory Storage

If you wish to store the frequency into a particular memory channel number, use the "Designated Memory" storage procedure:

- ① While operating in the VFO mode, select the desired frequency and reception mode (AM, NFM, etc.) for the station to be memorized.
- ② Press the [2(MW/MC)] key while pressing the [FUNC] key.
- ③ If you wish to append an alpha-numeric label (name) to the channel, press and hold in the [FUNC] key, then press the [ENT(SET/NAME)] key. Now skip to step ③ of the Labeling Memories section below, and perform steps ③ through ⑦.
- ④ Now enter the three-digit memory channel number to be "stored" from the keypad. When you touch the third digit of the memory channel number, "Write!" will appear at the right side of the display, confirming that the frequency data has been stored into the designated memory channel.

Example: Store 162.550 MHz into Memory Channel 005:

- ① Use the keyboard to enter the desired frequency.
Press [1] → [6] → [2] → [.] → [5] → [5] → [ENT(SET/NAME)].
- ② Press the [FUNC] key, then press [2(MW/MC)]. A channel number will appear at the left side of the display, and "MW/Name?" will appear at the right side.
- ③ Now press [0] → [0] → [5]. The display will indicate "005 Write!" momentarily, after which the display will revert to 162.550 MHz, which is the current VFO frequency. Memory storage into channel #005 is now complete.

Example: Store 162.450 MHz into Memory Channel 010, and append the label "NOAA 450" to the channel data:

- ① Use the keyboard to enter the desired frequency.
Press [1] → [6] → [2] → [.] → [4] → [5] → [ENT(SET/NAME)].
- ② Press the [FUNC] key, then press [2(MW/MC)]. A channel number will appear at the left side of the display, and "MW/Name?" will appear at the right side.
- ③ Press the [FUNC] key, then press [ENT(SET/NAME)]. You may now release the [FUNC] key.
- ④ You will observe a space blinking on the LCD; this indicates that you are in the alpha-numeric label entry mode.
- ⑤ Press [6 MNO] → [6 MNO] to enter "N" as the first character. Now press the [FUNC] key; while holding it in, rotate the DIAL one click clockwise to move on to the next digit.
- ⑥ Press [6 MNO] → [6 MNO] → [6 MNO] to enter "O" as the next character. Rotate the DIAL one click clockwise while holding in the [FUNC] key to move on to the next character.

Memory Mode

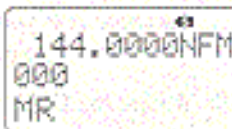
- ⑦ Press [2 ABC] to enter "A" as the next character. Rotate the **DIAL** one click clockwise while holding in the [FUNC] key to move on to the next character.
- ⑧ Press [2 ABC] to enter "A" as the next character. Now rotate the **DIAL** *two clicks* clockwise while holding in the [FUNC] key to insert a space and to move on to the next character.
- ⑨ We now need to change from letters to numbers, so release the [FUNC] key, and then rotate the **DIAL** one click so that "123" appears in the upper right-hand corner of the display.
- ⑩ Press the [4 GHI] key to enter "4" as the next character. Rotate the **DIAL** one click clockwise while holding in the [FUNC] key to move on to the next character.
- ⑪ Press the [5 JKL] key to enter "5" as the next character. Rotate the **DIAL** one click clockwise while holding in the [FUNC] key to move on to the next character.
- ⑫ Press the [0] key to enter "0" as the final digit of the alpha-numeric label.
- ⑬ Press [ENT (SET/NAME)] to save the alpha-numeric information.
- ⑭ Finally, press and hold in the [FUNC] key; while holding it in, press [0] → [1] → [0]. The display will indicate "010 Write!" momentarily, after which the display will revert to 162.450 MHz, which is the current VFO frequency.

You still are operating in the VFO mode, and you may store other channel frequencies into other memory channel registers in the same manner. To recall these memories, proceed to the next section.

MEMORY RECALL

Recall of memorized channels is very simple:

- ① Press the [1(MEMO)] key momentarily while pressing the [FUNC] key. You may now release the [FUNC] key. "MR" will appear in the bottom left-hand corner of the display, indicating that you are now operating in the Memory Recall mode.
- ② Rotate the **DIAL** knob to select the desired memory channel, or enter the desired three-digit memory channel number from the keypad.



144.0000NFM
000
MR

To return to the VFO mode from the Memory mode, just press the [CLR (P.SET)] key. "VFO" will appear in the bottom left-hand corner of the display.

Memory Mode

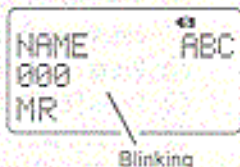
LABELING MEMORIES

You may wish to append an alpha-numeric "Tag" (label) to a memory or memories, to add in recollection of the channel frequency's significance (such as a Broadcast Station name, etc.). Alpha-numeric labels may be appended at the time of storage of the frequency data, or at a later time. In either case, the storage process is basically identical.

An example of alpha-numeric label programming was presented earlier in summary form. The section to follow will describe the process in more detail.

To label a previously-stored memory channel:

- 1 Recall the memory channel on which you wish to append a label.
- 2 Press the [ENT(SET)] key while pressing the [FUNC] key to enable programming of the name tag. You will notice the first entry's place blink.
- 3 In the upper right-hand corner of the LCD, you will also observe either "ABC" or "123." If "ABC" is present, this indicates that you are set up to enter *letters*; if "123" is present, this indicates that you are set up to enter *numbers*. Rotate the main tuning DIAL so that "ABC" or "123" appears, based on the label you wish to program.
- 4 Press the keyboard to enter the desired letter or number.



Example 1: If you selected "ABC" in the previous step, press the [2(MW/MC)] key repeatedly to toggle among the six available characters:

A → B → C → a → b → c → A...

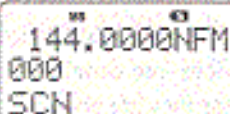
Example 2: If you selected "123" in the previous step, press the [2(MW/MC)] key to enter the digit "2."

- 5 Rotate the DIAL knob clockwise while pressing the [FUNC] key to move the next character.
- 6 Repeat steps 3 to 5 to program the remaining letters or numbers of the desired label. A total of eight characters may be used in the creation of a label.
- 7 When you have completed the creation of the label, press the [ENT(SET)] key momentarily to save the label.

Memory Mode

MEMORY CHANNEL SCAN

While using the Memory ("MR") mode, press the [3(SCH/SCN)] key while pressing the [FUNC] key to initiate Memory Channel Scanning. As with VFO Search, the scanner will halt on any signal encountered that is strong enough to open the squelch; it will then resume scanning according to the setting of the "RESUME" mode, described previously.



144.0000NFM
000
SCN

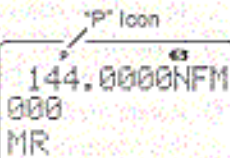
While Memory scanning, you can initiate Memory Bank Scanning, whereby only the channels in one of the ten Memory Banks will be scanned. To do this, start Memory Scanning per the above procedure, then press one of the numbered keys (e.g. press [3] to scan in Memory Bank 3 — channels 300 ~ 399).

Preferential Memory Scan (PMS)

This radio also allows you to set up a "Preferential Scan List" of channels which you can "tag" within the memory system. These channels are designated by a "P" icon when you have selected them, one by one, for the Preferential Scan List.

Here is the procedure for setting up the Preferential Scan List:

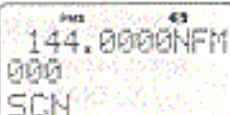
- ① Press the [1(MEMO)] key while pressing the [FUNC] key to enter the Memory mode, if you are not using memories already.
- ② Rotate the DIAL knob to select the channel which you wish to add to the Preferential Scan List.
- ③ Press the [5(S.SCH/PMS)] key while pressing the [FUNC] key. The "P" icon will appear at the top of the display, indicating that the channel is now in the Preferential Scan List.
- ④ To remove a channel from the Preferential Scan List, repeat the above procedure: rotate the DIAL knob to select the channel which you wish to delete from the Preferential Scan List, then press the [5(S.SCH/PMS)] key while pressing the [FUNC] key (the "P" icon will disappear).



144.0000NFM
000
MR

To initiate Preferential Memory Scan:

- ① Press the [3(SCH/SCN)] key while pressing the [FUNC] key to begin Memory Channel Scanning.
- ② Once you have engaged Memory Channel Scanning, press the [5(S.SCH/PMS)] key while pressing the [FUNC] key to initiate *Preferential Memory Scanning*. Only the channels which have a "P" icon appended to the channel number will now be scanned.
- ③ To return to *normal* Memory Channel Scanning, just press the [5(S.SCH/PMS)] key while pressing the [FUNC] key (the scanner will again scan *all* memory channels).



144.0000NFM
000
SCN

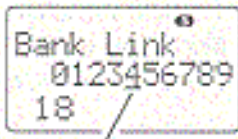
Memory Mode

Memory Bank Scanning

This feature allows you to scan one or more Memory Banks during Memory Channel Scanning, while ignoring other banks. For example, you may wish to load broadcast stations into certain Memory Banks for convenient recall, but *ignore* them during scanning (as they are always active, the scanner will halt on every such station).

To set up scanning of certain Memory Banks:

- ① If you are in the Memory mode, change to the VFO mode by pressing the [CLR (P.SET)] key.
- ② Press the [ENT(SET/NAME)] key while pressing the [FUNC] key to activate the "Set" (Menu) mode.
- ③ Rotate the **DIAL** knob to select Menu #18 [Bank Link].
- ④ Rotate the **DIAL** knob while pressing the [FUNC] key to select the Memory Bank which you wish to include while scanning. Now *release* the [FUNC] key.
- ⑤ Rotate the **DIAL** knob a few clicks; you will observe an underline (" _ ") icon toggling on and off below the Memory Bank number. The " _ " indicates that the Memory Bank is now in the Preferential Bank Scanning List.

A rectangular LCD display showing the text "Bank Link" at the top, followed by the memory bank number "0123456789", and the selected menu item "18" with an underline icon below it.
- ⑥ Now again press and hold in the [FUNC] key, and rotate the **DIAL** knob to select other Memory Banks to be included in (or excluded from) the Preferential Bank Scanning List. Release the [FUNC] key, and rotate the **DIAL** knob to apply or remove the underline from the selected Memory Bank.
- ⑦ Press the [ENT(SET)] key when all selections have been made.
- ⑧ Now rotate the **DIAL** knob to select Menu #17 [Bank Scan].
- ⑨ Rotate the **DIAL** knob while pressing the [FUNC] key to set this Menu Item to "ON".

A rectangular LCD display showing the text "Bank Scan" at the top, followed by the memory bank number "17", and the status "ON" to the right of the number.
- ⑩ Press the [CLR (P.SET)] key to exit to normal VFO operation.
- ⑪ Press the [1(MEMO)] key while pressing the [FUNC] key to enter the Memory mode.
- ⑫ Press the [3(SCH/SCN)] key while pressing the [FUNC] key to initiate Memory Bank Scanning. Only the channels in the Memory Bank which have an underline (" _ ") below the Memory Bank number will be scanned.
- ⑬ To return to *normal* Memory Channel Scanning, first press the [CLR (P.SET)] key to return to the VFO mode, then re-enter the "Set" (Menu) mode by pressing the [ENT(SET/NAME)] key while holding in the [FUNC] key. Rotate the **DIAL** knob to select Menu #17, and set Menu #17 to "OFF" by pressing the [FUNC] key and rotating the **DIAL** knob one click. Press the [CLR (P.SET)] key to exit the Menu mode.