YAESU

COMMUNICATIONS RECEIVER

VR-120

OPERATING MANUAL

Introduction

The YAESU VR-120 is a high-performance miniature communications receiver providing general coverage reception from 100 kHz to 1299.995 MHz on the AM and FM (Wide and Narrow bandwidths) modes; this coverage includes the AM and FM broadcast bands, HF Short-wave Bands, VHF and UHF TV bands, the VHF AM aircraft band, and a wide range of commercial and public safety frequencies!

The VR-120'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-120 can be greatly simplified by utilizing the "PRESET" mode. The "PRESET" mode provides twelve "starting point" frequencies (one frequency in each of twelve popular listening bands), from which you may then begin manual tuning.

We appreciate your purchase of the VR-120, 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

ANTENNA Jack

Connect the supplied rubber flex antenna (or another antenna presenting a 50-Ohm impedance) here.

VOL Knob

This control adjusts the receiver's audio volume level, and also the keypad's Beeper level. Clockwise rotation increases the audio volume level.

DIAL Knob

This 20-position detented rotary switch is the main tuning dial for the radio. It used for most tuning, memory selection, and function-setting tasks on the radio.

SQL Knob

This control sets the threshold level at which received signals (or noise) open the "Squelch." It should be advanced clockwise just to the point where background noise is silenced, so as to provide the best sensitivity to weak signals.

SP Jack

This 2-conductor, 3.5-mm miniature phone jack provides audio output for an earphone. The internal loudspeaker is disabled when this jack is used.

Note: The protective rubber cover over this jack must be pulled up to access it. Press it back

over the jack when not in use, to protect the inside of the radio from dust and water.

KEYPAD

These 4 keys select many of the most important operating features on the VR-120. The functions of the keys are described in detail on pages 4.

[PWR] Key

Press and hold in this key for two seconds to toggle the radio's power on and off.

[MONI (LOCK)] Key

Press this key momentarily to "Open" the squelch manually, allowing you to listen for very weak signals.

Press this key while holding in the [FUNC] key to activate the "Key Lock" Feature.

[FUNC] Key

Press and hold in this key, then press one of the keypad's buttons, to activate the "Secondary" key mode.

Display Icons & Indicators

Memory Channel Number
Frequency / Data Field
Battery Save Activated
Key Lock Activated
Operating Mode
OFF Timer Activated
Low Battery
S-Meter

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Keypad Functions

	BAND	V/M	SCAN	MODE
Press Key	Selects the operating (receiving) band (toward a higher frequency band).	Selects the operating VFO/Memory mode .	Starts scanning.	Selects the operating (receiving) mode, or toggles the display labels between the frequency and name tag formats.
Press F+	Selects the operating (receiving) band (toward a lower frequency band).	Stores the VFO frequency into a memory, or deletes the current memory channel's data. Stores the VFO frequency into a "Scan Skip" memory, or deletes the "Scan Skip" memory channel data.	Activates the "Set" (Menu) mode, or enables program-ming of the name tag for the current memory channel.	Engages the receiver front-end attenuator.
Press Key for 2 Seconds	Toggles the operating mode between the "Preset Mode" and the "Normal Mode."	Activates the Priority Watch and Dual Watch features.	Activates the Smart Search™ mode, or Programs and activates Preferential Memory Scan™ operaion.	Activates the channel counter mode.
Press F+ Key for 2 Seconds	Stores the Preset frequency into the memory.	Stores the frequency into the Priority memory Channel, or stores the VFO frequency pair for the Dual Watch feature into the Dual Watch Memory channel.	Stores the Scan frequency and Smart Search™ channels into the memory.	-----

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Accessories & Options

Accessories supplied with the VR-120

・Antenna

・Belt Clip

・Hand Strap

・Operating Manual

・Warranty Card

Available options for your VR-120

・CSC-72   Soft Case

・CT-35   Cloning Cable

・FNB-59   Rechargeable Battery Pack

・NC-??   Compact Wall Charger

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.

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Installation of Accessories

Battery Installation

o Referring to Figure 1, unlock the plate by pushing the latch in the "Open" direction.

o Remove the Battery Cover from the receiver.

o 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.

o Referring to Figure 3, replace the Battery Cover, then re-lock the bottom plate by carefully pressing the hinged latch cover back into its normal operating position.

Figure 1   Figure 2   Figure 3

Note: If you do not use the VR-120 for a long time, remove the batteries from the radio, as battery leakage could cause damage to the VR-120.

Low Battery Indication

When the battery voltage becomes too low, the "Battery" icon will appear in the display; indicating the batteries should be replaced. As battery voltage drops further, the VR-120 will shut off.

Antenna Installation

o To attach the supplied antenna to the VR-120, 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.

o To remove the antenna from the VR-120, 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.

Belt Clip Installation

To install the Belt Clip, first place the loop of the Hand Strap into the groove at the top of the Belt Clip, and run the loop of the strap around the round mounting ridge for the Belt Clip. Now insert the mounting screw through the belt clip, and affix it snugly to the mounting hole on the back of the VR-120, being careful not to allow the Hand Strap to become mis-aligned.

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Important Note!!

Do not install the supplied Belt Clip Mounting Screw if you are not installing the Belt Clip! Also, do not use an improper screw for mounting the Belt Clip! An improper screw may cause a "short circuit" to the internal circuitry, causing serious damage!

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 "VR-120" greeting message will appear on the display for two seconds. After this interval, the frequency display will appear.

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-120'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 not respond to weak signals.

Band Selection

The VR-120 automatically selects a default receiving band according to the frequency band on which you are operating.

If you want to change the receiving band, press the [BAD▲] key. The receiving bands available are:

BC band → SW band → HAM-1 band → FM band → AIR band → HAM-2 band →

→ VHF-TV band → ACT-1 band → HAM-3 band → UHF-TV band → ACT-2 band →

→ HAM-4 band → BC band → ・・・

Mode Selection

The VR-120 automatically selects a default receiving mode according to the frequency band on which you are operating.

If you want to change the receiving mode, press the [MODE] key. The receiving modes available are:

FM → WFM → AM → AUTO → FM → ・・・

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Frequency Navigation

Tuning DIAL

Rotating the DIAL allows frequency tuning in 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 MHz steps. 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.

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 [SCAN] 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 [SCAN)] 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 "B" 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 "B" ?? icon will blink at the top of the display.

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

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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 [V/M] key to cancel the VFO search.

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 Press and hold in the [FUNC] key; while holding it in, press the [SCAN] key to activate the "Set"(Menu) mode.

② Rotate the DIAL knob to select Menu #13 [MEMORY].

③ Press and hold in the [FUNC] key; while holding it in, rotate the DIAL knob to select "SKIP" (the VFO Skip mode).

④ While VFO Search is stopped on the frequency that you do not need, press the [V/M] key *while pressing the* [FUNC] *key*. The display will indicate " WRITE" as a request for command confirmation (see next step).

⑤ Now, press the [V/M] 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-120 has 64 VFO Frequency Skip Memory Channels (channels numbered 00 ~ 63.

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

① Press and hold in the [FUNC] key; while holding it in, press the [SCAN] key to activate the "Set"(Menu) mode.

② Rotate the DIAL knob to select Menu #13 [MEMORY].

③ Press and hold in the [FUNC] key; while holding it in, rotate the DIAL knob to

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select "SKIP" (the VFO Skip mode).

④ Press the [V/M] key, repeatedly if necessary, to recall the VFO Frequency Skip Memory mode ("Skip Memory " will appear at the left side of the display).

⑤ Rotate the DIAL knob to select the channel to be re-instituted.

⑥ Press the [V/M] key while pressing the [FUNC] key. The display will indicate "CLEAR" as a request for command confirmation (see next step).

⑦ Now, press the [V/M] 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.

Pre-Programmable Frequency Search

The VR-120 allows you to program up to eight 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 #11 ("[SEARCH]") to the "LIMIT" option, per the following procedure:

① Press and hold in the [FUNC] key; while holding it in, press the [SCAN] key to activate the "Set"(Menu) mode.

② Rotate the DIAL knob to select Menu #11 [SEARCH].

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 and hold in the [FUNC] key; while holding it in, press the [SCAN] key to exit to the VFO mode.

The VR-120 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
L 00	0.5220 ~ 1.8000 MHz	L 05	50.0000 ~ 54.0000 MHz
L 01	1.8000 ~ 3.6000 MHz	L 06	88.0000 ~ 108.0000 MHz
L 02	3.6000 ~ 10.5000 MHz	L 07	0.1000 ~ 1299.9950 MHz
L 03	10.5000 ~ 21.0000 MHz	L - - *	0.1000 ~ 1299.9950 MHz
L 04	21.0000 ~ 30.0000 MHz		(Default)

*: You can Customize this Pre-Programmed Frequency Range (see next Page)

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

① Press the [SCAN] key; the radio will begin VFO Search Scanning (at this point, the frequency range is unimportant).

② While VFO Search is active, press and hold in the [FUNC] key; while holding it in,

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rotate the DIAL knob to select 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, while you press and hold in the [FUNC] key, rotate the DIAL knob to select Search Band Memory "L 05." After initiating VFO Search Scanning, the search will be limited to the frequency range 50.0-54.0 MHz. While VFO Search Scanning is in progress, you may change ranges by just pressing and holding in the [FUNC] key; while holding it in, rotate the DIAL knob, and 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 [V/M] key to halt the search and return to manual tuning via the DIAL knob.

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

To program the Pre-Programmed Frequency Ranges :

①   Select the frequency you want to be the *Lower Frequency Limit* for the Pre-Programmed Frequency Range by rotating the main tuning DIAL.

②   Press and hold in the [FUNC] key; while holding it in, press the [SCAN] key for 2 seconds. The display will indicate "SCH A W" briefly, then the frequency display will return.

③   Next, select the frequency you want to be the *Higher Frequency Limit* for the Pre-Programmed Frequency range.

④   Press and hold in the [FUNC] key; while holding it in, press the [SCAN] key for 2 seconds. The display will indicate "SCH B W".

⑤   Now press the [SCAN] key. This activates the VFO Search Scanning mode.

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 [SCAN] key while holding in the [FUNC] key to activate the "Set" (Menu) mode.

②   Rotate the DIAL knob to select Menu #12 [SCHMEM].

③   Rotate the DIAL knob while pressing the [FUNC] key to review the programming of the Search Band Memories. The Search Band Number (0 ~ 7) will appear at the left

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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 [SCAN] key while pressing the [FUNC] key to exit to normal operation.

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Changing the Channel Steps

This radio's synthesizer provides the option of utilizing channel steps of 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"). Additionally, the digit of the frequency to be changed during "Fast" tuning may be selected, so as to allow rapid frequency excursions at the rate you prefer.

To change the channel steps:

①   Press the [SCAN] key while pressing the [FUNC] key to activate the "Set" (Menu) mode.

②   Rotate the DIAL knob to select Menu #00 [STEP].

③   Rotate the DIAL knob while pressing the [FUNC] key to select the desired frequency step size for normal tuning via the DIAL knob.

④   If you want to change the frequency digit which changes during "Fast" tuning, rotate the DIAL knob to select Menu #01 [F STEP]; press and hold in the [FUNC] key; while holding it in, rotate the DIAL knob to select the changed during fast tuning.

⑤   Press the [SCAN] key while pressing the [FUNC] key to save the new setting and exit to normal operation.

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Preset Mode

Operation of the VR-120 can be greatly simplified by utilizing the "PRESET" mode. The PRESET mode provides twelve "starting point" frequencies (one frequency in each of twelve popular listening bands), from which you may then begin manual tuning.

To operate in the PRESET mode:

① Press the [BAD▲] key for 2 seconds to change the VR-120 operating mode to PRESET.

② Press the [BAD▲] key to toggles the following Pre-Programmed Frequency.

Channel Number	Pre-Programmable Frequency
0	0.5220MHz (AM)
1	1.8000MHz (AM)
2	3.6000MHz (AM)
3	7.0000MHz (AM)
4	10.5000MHz (AM)
5	21.0000MHz (AM)
6	50.0000MHz (NFM)
7	88.0000MHz (WFM)
8	144.0000MHz (NFM)
9	430.0000MHz (NFM)
10	1240.0000MHz (NFM)
11	Weather Channel
12	This is a special "PRESET" key which toggles through the Pre-Programmed Frequencies, per the following selections:

```
  520 kHz (AM)  →  1.8000 MHz (AM)   →   3.6000 MHz (AM)
      ↑                                      ↓
   Weather Channel                      7.0000 MHz (AM)
      ↑                                      ↓
1240.0000 MHz (NFM)                    10.5000 MHz (AM)
      ↑                                      ↓
 430.0000 MHz (NFM)                    21.0000 MHz (AM)
      ↑                                      ↓
 144.0000 MHz (NFM) ← 88.0000 MHz (WFM) ←  50.0000 MHz (NFM)
```

③ Once you have chosen a PRESET band segment, you can move off of the Pre-Programmed Frequency by rotating the DIAL knob.

④ Press the [[BAD▲] key for 2 seconds, to disable the PRESET mode and return to normal operation.

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Memory Mode

The VR-120 provides 640 "standard" memory channels, numbered "000" through "639" 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 64 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 Storage

Two forms of memory storage are available on the VR-120:

① "Simple" memory storage automatically memorizes the desired frequency into the next-available unused memory channel register (without regard to any particular memory channel number).

② "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, FM, W-FM) for the station to be memorized.

② Press and hold in the [FUNC] key, then press the [V/M] 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 upper 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 NAM" 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 [SCAN] key. Now skip to step ③ of the Labeling Memories section below, and perform steps ③ through ⑦.

④ Now, press the [V/M] key once more while still holding in the [FUNC] key. This stores the frequency into the memory. "WRITE" will appear of the display, to confirm that the frequency data was successfully stored.

Note:: *You must press the* [V/M] *key per this step whether or not you are appending an alpha-numeric label to a memory.*

Designated Memory Storage

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

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Example: Store 162.450 MHz into Memory Channel 010, and append the label "NOAA450" to the channel data:

① While operating in the VFO mode, rotate the DIAL knob to select 162.450 MHz.

② Press the [FUNC] key, then press the [V/M] key. A channel will appear at the left upper side of the display, and "MW NAM" will appear.

③ Rotate the DIAL knob to select memory # 010.

④ Press the [FUNC] key, then press [SCAN]. You may now release the [FUNC] key.

⑤ You will observe a space blinking on the LCD; this indicates that you are in the alpha-numeric label entry mode.

⑥ Rotate the DIAL knob to select the "N" character.

⑦ Now press the [FUNC] key; while holding it in, rotate the DIAL one click clockwise to move on to the next digit. Release the [FUNC] key.

⑧ Rotate the DIAL knob to select the "O" character.

⑨ Now press the [FUNC] key; while holding it in, rotate the DIAL one click clockwise to move on to the next digit. Release the [FUNC] key.

⑩ Rotate the DIAL knob to select the "A" character.

⑪ Now press the [FUNC] key; while holding it in, rotate the DIAL one click clockwise to move on to the next digit. Release the [FUNC] key.

⑫ Rotate the DIAL knob to select the "A" character.

⑬ Now press the [FUNC] key; while holding it in, rotate the DIAL one click clockwise to move on to the next digit. Release the [FUNC] key.

⑭ Rotate the DIAL knob to select the "4" character.

⑮ Now press the [FUNC] key; while holding it in, rotate the DIAL one click clockwise to move on to the next digit. Release the [FUNC] key.

⑯ Rotate the DIAL knob to select the "5" character.

⑰ Now press the [FUNC] key; while holding it in, rotate the DIAL one click clockwise to move on to the next digit. Release the [FUNC] key.

⑱ Rotate the DIAL knob to select the "0" character.

⑲ Press the [V/M] key while pressing the [FUNC] key to save the alpha-numeric information.

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:

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① Press the [V/M] key to enter the Memory mode. The memory number will appear in the top 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.

□ Rotate the DIAL knob, while pressing the [FUNC] key, to recall the first memory channel of each memory bank.

③ To return to the VFO mode from the Memory mode, just press the [V/M] key.

Labeling Memories

You may wish to append an alpha-numeric "Tag" (label) to a memory or memories, to aid 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 [SCAN] key while pressing the [FUNC] key to enable programming of the name tag. You will notice the first entry's place blink.

③ Rotate the DIAL to select the first digit of the desired label.

④ Rotate the DIAL knob clockwise while pressing the [FUNC] key to move the next character. Now release the [FUNC] key.

⑤ Repeat steps ③ to ④ 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.

⑥ When you have completed the creation of the label, press the [V/M] key, while pressing the [FUNC] key, to save the label.

Memory Channel Scan

While using the Memory mode, press the [SCAN] 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.

Preferential Memory Scan (PMS)

This radio also allows you to set up a "Preferential Scan List" of channels which you can "flag" within the memory system. These channels are designated by a "PS" icon when

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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 [V/M] 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 [SCAN] key for 2 seconds. The "PS" icon will appear at the top of the display, indicating that the channel is now in the Preferential Scan List.
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 [SCAN] key for 2 seconds (the "PS" icon will disappear).

To initiate Preferential Memory Scan:

① Press the [SCAN] key to begin Memory Channel Scanning.

② Once you have engaged Memory Channel Scanning, press the [SCAN] key for 2 seconds to initiate Preferential Memory Scanning (the "P.S" icon will appear). 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 [SCAN] key for 2 seconds (the scanner will again scan all memory channels).

④ Press the [V/M] key to cancel the Preferential Memory Scanning.

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 [V/M] key.

② Press the [SCAN] key while pressing the [FUNC] key to activate the "Set" (Menu) mode.

③ Rotate the DIAL knob to select Menu #14 [SCAN].

④ Press and hold in the [FUNC] key; while holding it in, rotate the DIAL knob to select "BANK" as the Memory Bank mode

⑤ Now rotate the DIAL knob to select Menu #15 [B LINK].

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⑥ 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.

⑦ Rotate the DIAL knob a few clicks; you will observe an (".") icon toggling on and off below the Memory Bank number. The "." indicates that the Memory Bank is now in the Preferential Bank Scanning List.

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* "." *from the selected Memory Bank.*

⑧ Press the [SCAN] key while pressing the [FUNC] key to exit the Menu mode and return to normal operation.

⑨ Press the [V/M] key to enter the Memory mode.

⑩ Press the [SCAN] key to initiate Memory Bank Scanning. Only the channels in the Memory Bank which have an "." below the Memory Bank number will be scanned.

⑪ To return to normal Memory Channel Scanning, first press the [V/M] key to return to the VFO mode, then re-enter the "Set" (Menu) mode by pressing the [SCAN] key while holding in the [FUNC] key. Rotate the DIAL knob to select Menu #14, and set Menu #14 to "ALL" by pressing the [FUNC] key and rotating the DIAL knob one click .

⑫ Press the [SCAN] key while pressing the [FUNC] key to exit the Menu mode.

Deleting Memory Channels

You may wish to delete a certain Memory Channel's data, when you no longer have a reason to recall that channel.

To delete a channel's data:

① Recall the Memory Channel to be deleted.

② Press the [V/M] key while pressing the [FUNC] key. You will observe "CLEAR" on the display.

③ Press the [V/M] key again, while pressing the [FUNC] key, to delete the Memory Channel.

Important Note: Deleted Memory Channel data cannot be restored.

Clearing of a Memory Bank

This feature allows you to clear (discard) the data from all memory channels in a desired memory bank at the same time.

① Set the radio to the VFO mode by pressing the [V/M] key.

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② Press the [SCAN] key, while pressing the [FUNC] key, to activate the "Set" (Menu) mode.

③ Rotate the DIAL knob to select Menu #16 [BANKCL].

④ Rotate the DIAL knob one click clockwise while pressing the [FUNC] key to select the desired Memory Bank.

⑤ The display will now indicate "CLEAR" for about four seconds. Thereafter, clearing of the prescribed Memory Bank will be complete.

⑥ Press the [SCAN] key while pressing the [FUNC] key to exit to normal operation.

Important Note: *A cleared Memory Bank can not have its channels' data restored. All data for that bank will have to be re-entered.*

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One-Touch Memory

When you activate the OTM feature, you can recall up to four favorite frequencies directory via the [BAD▲], [V/M], [SCAN] and [MODE] keys. Memory channels "060," "061," "062," and "063" are assigned as "shortcuts" to the aforementioned panel keys, and data for these channels should be accomplished as described previously. Therefore, the [BAD▲], [V/M], [SCAN] and [MODE] keys become shortcut keys which recall memory channels "060," "061," "062," and "063" for quick access to those channels.

① Set the radio to the VFO mode by pressing the [V/M] key.
② Press the [SCAN] key while pressing the [FUNC] key to activate the "Set" (Menu) mode.
③ Rotate the DIAL knob to select Menu #24 [O T M].
④ Rotate the DIAL knob one click clockwise while pressing the [FUNC] key to select "ON."
⑤ Press the [SCAN] key while pressing the [FUNC] key. One touch memory now becomes operational.

Notes: ・When using OTM, only the ATT key can be used among the operating feature keys.

・When using OTM, it isn't possible to operate using the DIAL.

・To cancel OTM, return to step (2) above, and select and "OFF" when you get to Menu #24.

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Channel Counter

The channel Counter allows measuring of the frequency of a nearby transmitter, without knowing that frequency in advance. The frequency can be measured by bringing VR-120 close to the transceiver which it is transmitting.

   The VR-120 searches within a ±50 MHz range, at high speed, from the frequency displayed on the VR-120. When the strongest signal in that range is identified, the VR-120 displays the frequency of that (strongest) signal, and writes it into the special "channel counter memory.

Note: This channel counter is designed to provide an indication of the operating frequency of

   the incoming signal, one that is close enough to allow the user to tune precisely to the other station's frequency. This feature is not, however, designed to provide a precise determination of the other station's frequency.

① Set the radio to the VFO mode by pressing the [V/M] key.
② Bring VR-120 into close proximity to the transmitter to be measured.
③ Press the [MODE] key for 2 seconds.
   ・While searching, a "count-down" display will appear (COUNT4・・・COUNT1), and
     then the frequency of the nearby station will be displayed after the search ends.
   ・When the channel counter is active, the antenna circuit is detached. Therefore, only
     stations in close proximity may have their frequencies measured using this feature.
   ・When it isn't possible to determine the signal's frequency, "--NO--" will be displayed
     on the LCD, and the VR-120 will return to the VFO mode.
   ・The search width of the Channel Counter can be changed via the Menu mode (item
     #20).
   ・When the incoming signal level from the other station is extraordinarily high, you
     may need to increase the distance between the VR-120 and the other station, in
     order to get correct indication of the frequency.
④ Press the [V/M] key. The radio will begin Channel Counter operation.
   The memory of the channel counter is deleted each time a new search takes place.
<<are above steps in correct order (press MODE then V/M)?>>
<<Maybe the items in step 3 should be in step 4??>>

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Dual Watch

The Dual Watch feature allows you to monitor two frequencies, with the radio rapidly switching between the two channels, looking for activity. As with scanning operation, the VR-120 will halt when one of the channels becomes occupied by a signal strong enough to open the Squelch.

The Dual Watch system includes the option to use a bank of special memories which can store up to ten pairs of Dual Watch frequencies. These memories are pre-programmed at the factory, but can quickly be programmed by you for monitoring of your favorite frequencies on a priority basis.

To activate Dual Watch:

① Press the [SCAN] key, while pressing the [FUNC] key, to activate the "Set" (Menu) mode.

② Rotate the DIAL knob to select Menu #18 [DW/PW].

③ Press and hold in the [FUNC] key; while holding it in, rotate the DIAL knob to select "DW" as the Priority Monitoring mode.

④ Press the [SCAN] key, while pressing the [FUNC] key, to save the new setting and exit to normal operation.

⑤ Press and hold in the [V/M] key for 2 seconds. The radio will begin Dual Watch operation.

⑥ Once you have initiated Dual Watch operation, press and hold in the [FUNC] key; while holding it in, rotate the DIAL knob to the Dual Watch Memory as shown below. Dual Watch will cause the radio to switch back and forth (rapidly) between the Pre-Programmable Frequency pair selected (for example, if you rotate the DIAL knob [A06], Dual Watch will switch every 0.5 second between144.000 MHz and 430.000 MHz.

Dual Watch Memories	Pre-Programmed Frequency Pair	Dual Watch Memories	Pre-Programmed Frequency Pair
A00	0.5200 AM	A05	50.5000 FM
b00	1.8000 AM	b05	88.0000 WFM
A01	1.8000 AM	A06	88.0000 WFM
b01	3.6000 AM	b06	144.0000 FM
A02	3.6000 AM	A07	144.0000 FM
b02	10.5000 AM	b07	430.0000 FM
A03	10.5000 AM	A-- *	0.5200 AM
b03	21.0000 AM	b--	1.8000 AM
A04	21.0000 AM		(Default)
b04	50.5000 FM		

*: You can customize the Pre-programmed Frequency Pair.

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⑦　Dual Watch will halt when the VR-120 receives a signal strong enough to break through the Squelch threshold. The radio will then hold on that frequency according to the setting of the "RESUME" mode, described previously.

⑧　To stop Dual Watch manually, just rotate the DIAL knob one click. If you like, you can then tune manually back and forth between the two Dual Watch memories by rotating the DIAL knob.

⑨　Press the [V/M] key to cancel Dual Watch operation and return to the previous operating mode (VFO or Memory).

You can change any or all of the Dual Watch pre-programmed frequency pairs in accordance with your operating preferences.

To program a Dual Watch Memory frequency pair:

①　Press the [SCAN] key, while pressing the [FUNC] key, to activate the "Set" (Menu) mode.

②　Rotate the DIAL knob to select Menu #18 [DW/PW].

③　Press and hold in the [FUNC] key; while holding it in, rotate the DIAL knob to select "DW" as the Priority Monitoring mode.

④　Press the [SCAN] key while pressing the [FUNC] key to save the new setting and exit to normal operation.

⑤　Select one of the frequencies you wish to utilize for Dual Watch, using the main DIAL.

⑥　Press and hold in the [V/M] key for 2 seconds while pressing the [FUNC] key. "DWA W" (Dual Watch Channel "A") will appear on the display.

⑦　Now select the second frequency you wish to utilize for Dual Watch.

⑧　Press and hold in the [V/M] key for 2 seconds while pressing the [FUNC] key. "DWB W" (Dual Watch Channel "B") will appear on the display.

⑨　Press and hold in the [V/M] key for 2 seconds to activate Dual Watch between the above frequency pair.

⑩　Now, store this frequency pair into one of the eight available Dual Watch Memory registers. Just press and hold in the [FUNC] key; while holding it in, rotate the DIAL knob to the Dual Watch Memory register into which you want to store this frequency pair.

<<This is a good feature, because the default frequencies are of no use in USA>>

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Priority Monitoring

The "Priority" feature, which is somewhat similar to Dual Watch, allows you to monitor a VFO frequency while checking a "Priority Memory" channel every five seconds for activity. If the Priority Memory channel becomes active with a signal strong enough to open the Squelch, the radio will halt on that frequency and will hold there in accordance with the setting of the "RESUME" mode, described previously.

To set up Priority Monitoring:

⑪ Press the [SCAN] key, while pressing the [FUNC] key, to activate the "Set" (Menu) mode.

⑫ Rotate the DIAL knob to select Menu #18 [DW/PW].

⑬ Press and hold in the [FUNC] key; while holding it in, rotate the DIAL knob to select "PW" as the Priority Monitoring mode.

⑭ Press the [SCAN] key while pressing the [FUNC] key to save the new setting and exit to normal operation.

⑮ Select the frequency you wish to be the "Priority" frequency, using the main DIAL.

⑯ Press and hold in the [V/M] key for 2 seconds, while holding in the [FUNC] key, to store the frequency into the Priority Memory Channel.

⑰ Select the desired "main monitoring" frequency on the VFO.

⑱ Press and hold in the [V/M] key for 2 seconds to activate Priority Channel monitoring. The display will show both the VFO frequency and the Priority Memory Channel frequency, with a small arrow indicating the frequency being monitored. Every five seconds, you will notice the arrow jumping to the Priority Memory frequency. If activity appears on the Priority Memory, the radio will hold on that frequency per the programming of the "RESUME" mode.

⑲ Press the [V/M] key to cancel Priority Monitoring operation.

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Smart Search^{TM}

The Smart Search^{TM} feature allows you to load frequencies automatically according to where activity is encountered by your radio. This feature is especially helpful when visiting a new city, where you may not know the frequencies of active stations, The VR-120 includes a special 21-channel Smart Search^{TM} Memory Bank which is separate from the main memory system.

To set up Smart Search^{TM} operation:

① Set the radio to the VFO mode by pressing the [V/M] key, if necessary.
② Tune the radio to the frequency you wish to use as the lower frequency limit for the Smart Search^{TM} sweep.
③ Press and hold in the [SCAN] key for 2 seconds, then rotate the DIAL knob to select <<??>> ; store the Lower frequency limit into the Smart Search^{TM} "SL" memory. ???
④ Press and hold in the [SCAN] key for 2 seconds while pressing the [FUNC] key.
⑤ Tune the radio to the frequency you wish to use as the starting frequency for the Smart Search^{TM} sweep.
⑥ Press and hold in the [SCAN] key for 2 seconds, then rotate the DIAL knob to select; store the start frequency into the Smart Search^{TM} "SS" memory. <<??>>
⑦ Press and hold in the [SCAN] key for 2 seconds while pressing the [FUNC] key.
⑧ Tune the radio to the frequency you wish to use as the upper frequency limit for the Smart Search^{TM} sweep.
⑨ Press and hold in the [SCAN] key for 2 seconds, then rotate the DIAL knob to select; store the Upper frequency into the Smart Search^{TM} "SU" memory. <<?????>>
⑩ Press and hold in the [SCAN] key for 2 seconds while pressing the [FUNC] key.

To initiate Smart Search operation:

① Press and hold in the [SCAN] key for 2 seconds, then press and hold in the [SCAN] key for 2 seconds. Smart Search scanning will now begin.
All channels where activity is present (up to 10 in each direction) will be loaded into the Smart Search^{TM} memories. Whether or not all 21 memories are filled, the Smart Search^{TM} scan will stop after one sweep in each direction.
② Now you can turn the DIAL to select the Smart Search^{TM} memories.
③ To disable Smart Search^{TM} operation, press the [V/M] key.

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Reset Procedures

Occasionally, a static discharge or other anomaly will cause the microprocessor to go into erratic behavior. This can frequently be corrected by a "System Reset" whereby the microprocessor is cleared of all "soft" data. If you just want to clear the Menu and Function Mode settings to their factory defaults, without losing your frequency memories, use the "Function/Menu Reset" procedure

System Reset

(To clear all memories and other settings to factory defaults)

① Turn the radio off.

② Press and hold in the [FUNC] and [MONI] keys while turning the radio on (press the [V/M] key at this time to cancel the Reset procedure).

③ Press the [V/M] key, while pressing the [FUNC] key, to reset the all settings to their factory defaults.

Function/Menu Reset

(To reset the Function mode and Set mode settings to their factory defaults)

① Turn the radio off.

② Press and hold the [FUNC], [MONI] and [BAD▲] keys while turning the radio on (press the [V/M] key at this time to cancel the Reset procedure).

③ Press the [V/M] key, while pressing the [FUNC] key, to reset the all settings to their factory defaults.

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Set Mode

The VR-120 "Set" mode is an easy-to-use Menu system, which allows customization of many VR-120 configuration parameters.

Use the following "generic" procedure to engage the "Set" (Menu) mode:

① Set the radio to the VFO mode by pressing the [V/M] key.

② Press the [SCAN] key, while pressing the [FUNC] key, to activate the "Set" (Menu) mode. The Menu Item number and a brief title for the Menu Item will appear on the display.

③ Rotate the DIAL knob to select the Menu Item you wish to work on.

④ Rotate the DIAL knob, while pressing the [FUNC] key, to change the value or condition for the selected Menu Item.

⑤ Press the [SCAN] key, while pressing the [FUNC] key, to save the new setting and exit to normal operation.

Set Item 00 [STEP]

Function: Channel Steps

Available Values: AUTO / 5 / 6.25 / 9 / 10 / 12.5 / 15 / 20 / 25 / 30 / 50 / 100 kHz

Default: AUTO

Set Item 01 [F STEP]

Function: Channel Fast Steps

Available Values: 10 k / 100 k / 1M / 10 M / 100 MHz

Default: 1 MHz

Set Item 02 [LAMP]

Function: Select the LCD Lamp Mode

Available Values: AUTO / ON /OFF

                AUTO: Illuminates the LCD/Keypad lamp for 5 seconds when any key is pressed.

                ON: Pressing the LAMP key *toggles* LCD/Keypad lamp On/Off.

                OFF: Disable the LCD/Keypad lamp.

Default: AUTO

Set Item 03 [SAVE]

Function: Select the Battery Save Interval ("sleep" ratio)

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Available Values: OFF / 1:4 (1 sec) / 1:12 (3 sec) / 1:20 (5 sec) / 1:28 (7 sec) / 1:36 (9 sec)

Default: 1:4 (1 sec)

Note that the VR-120 receiving time is 250 ms when the Battery Save function is on.

Set Item 04 [OFFTIM]

Function: Set the "Sleep Timer" Time

Available Values: OFF / 30 / 60 / 90 min.

Default: OFF

Set Item 05 [PAUSE]

Function: Set the Delay time for scanning

Available Values: 1sec ~ 12sec

Default: 5 sec

This Set Item defines the length of time the scanner will hold on a frequency.

Set Item 06 [BEEP]

Function: Enable/disable the Keypad Beeper

Available Values: ON/OFF

Default: ON

Set Item 07 [VOLT]

Function: Checks Battery Voltage (1.9 ~ 3.5 V)

Set Item 08 [SM SEN]

Function: The setting of S meter sensitivity

Available Values: NORMAL / LOW (FM only)

                    NORMAL: Makes the sensitivity of the S meter "Normal."

                    LOW: Lowers the sensitivity of the S meter. (FM only)

Default: NORMAL

Set Item 09 [SM BUZ]

Function: Enable/disable the S-Meter Buzzer

Available Values: OFF/BUZZER

Default: OFF

<<What does this do??>>

Set Item 10 [GROUP]

Function: Select the Preset Mode (# P12)

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Available Values: GROUP0 / GROUP1 / GROUP2 / GROUP3 /

                GRPEX0 / GRPEX 1 / GRPEX2 / GRPEX3 / GRPEX4 / GRPEX5 /

                GRPEX6 / GRPEX7

                GROUP0: Memory Channel 800 ~ 831

                GROUP1: Memory Channel 832 ~ 863

                GROUP2: Memory Channel 900 ~ 931

                GROUP3: Memory Channel 932 ~ 963

                GRPEX0: Memory Channel 800 ~ 815

                GRPEX1: Memory Channel 816 ~ 831

                GRPEX2: Memory Channel 832 ~ 847

                GRPEX3: Memory Channel 848 ~ 863

                GRPEX4: Memory Channel 900 ~ 915

                GRPEX5: Memory Channel 916 ~ 931

                GRPEX6: Memory Channel 932 ~ 947

                GRPEX7: Memory Channel 948 ~ 963

Default: GROUP0

Set Item 11 [SEARCH]

Function: Select the VFO Scan Type

Available Values: VFO/LIMIT

            VFO: The VFO scanner scans frequencies between the 0.1 MHz and 1300 MHz.

            LIMIT: The VFO scanner scans frequencies between the pre-programmed frequency limits.

Default: VFO

Set Item 12 [SCHMEM]

Function: Displays the "Search Band" Memory frequency pair

            ①   Recall Set Item 12, then rotate the DIAL knob while pressing the [FUNC] key.

            ②   As you rotate the DIAL knob, the ten numbered "Search Band Memory" numbers will be displayed, along with the frequencies contained in those memories.

            ③   Press the [SCAN] key while pressing the [FUNC] key to return to the Menu item selection mode.

Set Item 13 [MEMORY]

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Function: Selects Memory Channel operation between the regular memories (VFO)

or skip memory (SKIP).   <<correct??>>

Available Values: VFO / SKIP

Default: VFO

Set Item 14 [SCAN]

Function: Enable / Disable Memory Bank Scanning

Available Values: ALL / BANK

ALL: Enables Memory Bank (only) Scanning

BANK: Disables Memory Bank Scanning

Default: ALL

Set Item 15 [B LINK]

Function: Set the Bank Link Feature

<<??>> <<Same name as #16 below>>

Set Item 16 [B LINK]

Function: Clear (mask) all the Memory Channels in a particular Memory Bank.

① After selecting Set Item 16, rotate the DIAL knob while pressing the [FUNC] key to select the Memory Bank number. The display will indicate "CLEAR" as a request for command confirmation. <<Do you do something then? How to cancel?>>

② Press the [SCAN] key, while pressing the [FUNC] key, to return to the Menu item selection mode

Set Item 17 [SKIPCL]

Function: Clear all Memory Channels in "Skip" Memory

① After selecting Set Item 17, rotate the DIAL knob one click clockwise while pressing the [FUNC] key to Skip Memory. The display will indicate "CLEAR" as a request for command confirmation.

② Press the [V/M] key while pressing the [FUNC] key again; this action will clear all the "Skip" Memories.

Set Item 18 [DW/PW]

Function: Dual Watch / Priority Monitoring

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Available Values: DW / PW

> DW: The Dual Watch feature allows you to monitor two frequencies.
>
> PW: The "Priority" feature, which is somewhat similar to Dual Watch, allows you to monitor a VFO frequency while checking a "Priority Memory" channel every five seconds for activity.

Default: DW

Set Item 19 [S SCH]

Function: Select the Smart Search operating mode

Available Values: SINGLE/CONTINUE

> SINGLE: The VR-120 sweeps once in each direction starting on the current frequency. All channels where activity is present are loaded into the Smart Search memories. Whether or not all memories are filled, the search stops after one sweep in each direction.
>
> CONTINUE: The VR-120 makes a sweep in each direction as with the "SINGLE" mode, but if all channels not filled after the first sweep, the VR-120 continues sweeping until they are all filled.

Default: SINGLE

Set Item 20 [CH CNT]

Function: Channel Counter Search Width

Available Values: ± 5 /± 10 / ± 50 / ± 100 MHz

Default: ± 50 MHz

Set Item 21 [FLEX S]

Function: Enable/disable the "flexible" frequency step feature

Available Values: ON/OFF

> OFF: When you change the receive mode, the channel steps remain the same.
>
> ON: When you change the receive mode, the VFO frequency will increment according to the current receive mode.

Default: OFF

Set Item 22 [AM ANT]

Function: Selection of the antenna used in the AM mode

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Available Values: EXT/BAR

                    EXT: Selects the rubber flex Antenna

                    BAR: Selects the internal Bar Antenna.

                                The Bar antenna is directional; rotate the VR-120 for

                                best reception.

Default: EXT

Set Item 23 [FM ANT]

Function: Selection of the antenna used in the FM mode

Available Values: EXT /EARPHO

           EXT: Selects the rubber flex Antenna

           EARPHO: Selects the Earphone Antenna. When receiving a weak

                      signal, reception may be noisy.

Default: EXT

Set Item 24 [O T M]

Function: Activation of One touch Memory

Available Values: OFF /ON

           OFF: One Touch Memory is disabled.

            ON: The [BAD▲], [V/M], [SCAN] and [MODE] function as One-Touch

              Memory Recall keys.

Set Item 25 [GAME]

Function: The setting of slot machine game mode <<??>>

           ①   After selecting Set Item 25, rotate the DIAL knob one click clockwise while pressing the [FUNC] key to game made. The display will indicate "READY" as a request for command confirmation.

           ②   Press the [BAD▲] key to start the slot machine game.

           ③   Next, it presses in the order of [V/M], [SCAN], [MODE] keys.

           ④   Once again, when wanting to start, it presses [BAD▲] key.

           ⑤   When wanting to end a game: Rotate the DIAL knob one click clockwise while pressing the [FUNC] key.

<<Please clarify—do not understand what is happening in this mode>>

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Cloning

The VR-120 includes a convenient "Clone" feature, which allows the memory and configuration data from one radio to be transferred to another VR-120. Here is the procedure for Cloning one radio's data to another:

① Turn both radios off.

② Connect the optional CT-35 cloning cable between the SP jacks of the two radios.

③ Press and hold in the [FUNC] and [BAD▲] keys while turning the radio on. Do this for both radios (the order of the switch-on does not matter).

④ On the Destination radio, press the [SCAN] key.

⑤ Now, on the Source radio, press the [MODE] key.
   If there is a problem during the cloning process, "ERROR" or "WAR" will be displayed. Check your cable connections and battery voltage, and try again.

⑥ If the data transfer is successful, "PASS" will appear on the displays of both radios. Press any key to exit to normal operation.

⑦ Turn both radios off and disconnect the CT-35.

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Specifications

Frequency Range:		100 kHz ~ 1299.995 MHz (Cellular Blocked)		
Receiving Mode:	AM/FM/WFM			
Circuit Type:	Triple Super-heterodyne			
Memory Channels:	640 Channels			
Memory Bank:	10 Banks (@ 64 Channels)			
Antenna Impedance:	50 Ω unbalanced, BNC receptacle			
Intermediate Frequencies:		248.45 MHz, 15 MHz, 450 kHz		
Sensitivity:	100kHz ~ 5 MHz:		AM	3.5 dBμ (1.5 μV)
	5 ~ 160 MHz:		AM	-4.4 dBμ (0.6 μV)
			FM	-10.4 dBμ (0.3 μV)
			WFM	-1.0 dBμ (0.9 μV)
	160 ~ 370 MHz:		AM	-4.4 dBμ (0.6 μV)
			FM	-10.4 dBμ (0.3 μV)
			WFM	-4.4 dBμ (0.6 μV)
	370 ~ 520 MHz:		FM	-10.4 dBμ (0.3 μV)
			WFM	0 dBμ (1.0 μV)
	520 ~ 1300 MHz:		FM	-3.0 dBμ (0.7 μV)
			WFM	9.5 dBμ (3.0 μV)
Selectivity:	WFM	200 kHz/-6 dB		
	AM/FM	16 kHz/-6 dB		
Conducted Spurious Emission:		Less than -54 dBm		
Supply Voltage:	2.2 ~ 3.5 V DC; InternalBattery (Nominal: 3.0 V DC)			
Current Consumption:	Approx. 95 mA (Receive, AF Output 50 mW, 8 Ω)			
	Approx. 15 mA (Standby, Saver 1:4 on)			
	Approx. 55 mA (Standby, Saver off)			
Operating Temp.:	-10 ºC ~ +50 ºC			
AF Output:	Approx. 80 mW (8 Ω)			
Case Size:	85 X 59 X 26 mm (H X W X D) w/o knob			
Weight:	Approx. 195 g w/battery & antenna			

Specifications are subject to change without notice.

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1. Changes or modifications to this device not expressly approved by VERTEX STANDARD could void the user's authorization to operate this device.
2. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions; (1) this device may not cause harmful interference, and (2) this device must accept any interference including interference that may cause undesired operation.
3. The scanning receiver in this equipment is incapable of tuning, or readily being altered, by the User to operate within the frequency bands allocated to the Domestic public Cellular Telecommunications Service in Part 22.

This device complies with RSS-210 of Industry Canada. Operation is subject to the following two conditions: (1) this device may not cause interference; and (2) this device must accept any interference, including interference that may cause undesirable operation of this device.

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YAESU

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