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YUPITERU MVT-9000 Owner's Guide

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Warning

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If the radio is being used with standard alkaline batteries, do not use

the AC or car power adapters. External power should only be applied to the radio when it has been equipped with rechargeable batteries or the batteries have been removed from the radio.

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Features

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1000 channels
500 search pass frequencies
20 memory banks
20 search bands
18 step sizes
10 priority channels
7 receive modes
Large, full function, custom LCD
Bandscope with marker
Selectable AM antenna
Duplex receive
Dual VFOs
Squelch monitor
Auto-store
Rotary control
Attenuator
Alpha-tagging (opening message, banks, bands & channels)
Programmable battery save
Programmable lighting
Programmable locking
Programmable beep

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Resources

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1000 Memory channels (0-999)
500 Search pass frequencies
50 Channels/bank
20 Memory banks (A-J & a-j)
20 Search bands (A-J & a-j)
18 Step sizes (50/100/200/500Hz
1/5/6.25/8/9/10/12.5/15/20/25/30/50/100/125kHz)
10 Priority channels (1000-1009 = bank P)
7 Receive modes (AM/NAM/FM/WFM/USB/LSB/CW)
176 Alpha-tag characters
1 blank
26 A-Z
5 symbols

1 blank
26 a-z
5 symbols
1 blank
5 symbols
56 Kanji
2 punctuation
1 blank
5 Greek
26 symbols
10 0-9
6 symbols

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Memory Organization

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Bank	Channels	Key	Bank	Channels	Key	Bank	Channels
A	000 - 049	1	a	500 - 549	.1	P	1000 - 1009
B	050 - 099	2	b	550 - 599	.2		
C	100 - 149	3	c	600 - 649	.3		
D	150 - 199	4	d	650 - 699	.4		
E	200 - 249	5	e	700 - 749	.5		
F	250 - 299	6	f	750 - 799	.6		
G	300 - 349	7	g	800 - 849	.7		
H	350 - 399	8	h	850 - 899	.8		
I	400 - 449	9	i	900 - 949	.9		
J	450 - 499	0	j	950 - 999	.0		

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Definitions & Terms

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Here are some basic definitions as well as terms used in the MVT-9000 Instruction Manual that will help you to use this guide more effectively.

Alpha-tagging

A feature allowing you to create your own labels and assign them to various resources for easier identification. The MVT-9000 allows you to name memory banks, memory channels and search bands. There is also a message which is displayed when the radio is powered on which is also customizable.

Attenuator

A device which is used to diminish the strength of an incoming signal. This is typically used to alleviate overloading of the front end radio circuitry by very strong, and usually nearby, transmissions. The MVT-9000 allows you to set the attenuator for individual memory channels as well as while performing a search.

Bandscope

A feature allowing activity on adjacent frequencies to be displayed using a graphical representation. The MVT-9000 has a special marker function which can be used to aid in the numeric identification of adjacent frequencies as well as listen to them.

Duplex Shift

A lot of radio systems use one frequency for transmitting and another for receiving (usually the inputs and outputs to a repeater site). The difference between these two frequencies is referred to as the duplex shift width. The MVT-9000 allows this shift width to be programmed so that these two frequencies can be monitored easily with a simple keypress.

Index

The MVT-9000 has a feature called index which allows a paused scan or search to resume after a fixed time. Normally, during a scan or search, if an active transmission is detected, the scanning or searching operation will be paused until the transmission ceases. Once the transmission goes away, the scanning or searching operation resumes. If you have the index feature enabled, scanning or searching will pause on an active transmission for at most 4 seconds before resuming.

Memory bank

An association of memory channels. This radio has 20 memory banks (A-J & a-j). Since it also has 1000 memory channels, this means there are 50 memory channels per memory bank.

Memory channel

A location used to store a frequency and its associated settings such as receive mode, attenuator, duplex width and alpha-tag. The MVT-9000 has 1000 memory channels which are divided into 20 banks.

Offset

Normally, the MVT-9000 will automatically round frequencies down to the closest integral frequency of the current step size. For example, if the step size were 5kHz and you were to enter 155.502MHz, the radio would round this to 155.500MHz (an integral multiple of 5kHz). If you wish to override this safety precaution, the OFFSET feature is used so that frequencies are kept exactly as they are entered.

Pass

Refers to scanning and searching operations. A memory channel can be passed so that it is not checked during a scan operation. A frequency can be passed so it is not checked during a search operation. See Scan Pass and Search Pass for more information.

Preset

This radio comes already programmed with regard to the receive mode, step size and duplex shift width that will be used dependent on the active frequency. When you key in a frequency, the radio will automatically select a receive mode and step size based on the range your frequency falls in. You will find a number of places where this data is not correct due to differences in national frequency bandplans. When the radio is in its "auto" mode, the PRESET indicator will be visible in the LCD. If you manually change the receive mode or step size from these auto settings, the PRESET indicator will disappear.

NOTICE : It appears that units shipped for sale outside of Japan do NOT come with the PRESET feature. Unless you purchased this radio in/from Japan, you will have to ignore sections of this guide which pertain to the PRESET feature since your radio will NOT have it.

Priority Channels

Special memory channels that can be checked on a periodic basis for active transmissions. These are usually programmed with very important frequencies that you do not want to miss activity on. The MVT-9000 has 10 priority channels which are collectively referred to as bank P.

Receive Mode

The method by which radio transmissions will be demodulated so that the resultant audio portion may be directed to the speaker. Available receive modes are :

AM - Amplitude Modulation (below 30MHz, amateur radio, commercial and military aircraft)
NAM - Narrow AM (mainly used below 25MHz)
FM - Frequency Modulation (most VHF/UHF communications)
WFM - Wide FM (for FM radio and TV audio)
USB - Upper Sideband (mainly used below 25MHz & amateur radio bands)
LSB - Lower Sideband (mainly used below 25MHz & amateur radio bands)
CW - Continuous Wave (amateur radio Morse code)

Scan Pass

Most receivers refer to this feature as channel lockout. Once a frequency has been programmed into memory, a scanning operation will stop on this channel if an active transmission is detected. Certain frequencies may contain transmissions which are very or always active. To keep the scanning operation from stopping on these channels, they can be locked-out/skipped/passed during a scan.

Scanning

The act whereby memory channels are successively checked for active radio transmissions of their programmed frequencies.

Search band

A feature which allows a pre-defined frequency range to be programmed so that it can be repeatedly searched for active transmissions. Stored with each search band are a starting frequency, ending frequency, receive mode, step size, attenuator, alpha-tag and more. The MVT-9000 has 20 search bands.

Search Pass

Some receivers refer to this feature as search-skip. If you have a known frequency which you would like to skip while performing a search, it can be placed in a special memory. Yupiteru refers to this as the Search Pass Memory. Once placed in this memory, this frequency will not be tested for an active transmission, or in other words it's skipped/passed when performing a search. The MVT-9000 has 500 search pass frequencies.

Searching

The act whereby a frequency is incremented or decremented successively to detect active radio transmissions in a given frequency range. Searching is usually performed on a programmed Search Band.

Step size

A value in Hertz (Hz) or kiloHertz (kHz) that indicates the amount by which a frequency will be changed due to user or radio control while searching for active transmissions or using a VFO. Available step sizes are :

Hz : 50/100/200/500
kHz : 1/5/6.25/8/9/10/12.5/15/20/25/30/50/100/125

S-meter

A feature used to graphically represent the strength of the signal being received. It is usually calibrated to a dB (logarithmic) scale. A bar graph is used where more bars indicate a stronger signal.

VFO

A temporary location to store a frequency so that a memory channel does not have to be programmed. Associated with this frequency are various settings such as receive mode, step size, attenuator, preset, offset, etc. The MVT-9000 has 2 VFOs (A & B).

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Available Modes
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Bandscope

The radio is in Bandscope mode when the bandscope is displayed at the bottom of the LCD in place of the bank/band name and S-meter. This is a sub-mode of VFO, Memory, Scan and Search modes.

Marker

The radio is in Marker mode when the CENT and MARK indicators are displayed along with the bandscope display. This is a sub-mode of Bandscope mode.

Memory

The radio is in Memory mode when a memory channel number is visible in the upper left corner next to the CH indicator. Pressing the MR key toggles between Memory and VFO modes.

Priority

Priority mode is enabled when the PRI indicator is visible. This is a mode independent of the VFO, Memory, Scanning or Searching modes.

Scanning

In this mode, the scanning operation checks the specified banks for active transmissions on the programmed frequencies within those banks. There are three scanning modes with three scanning sub-modes for a total of nine different types of scan that can be performed.

The three modes are :

Continuous : scanning of all non-empty banks
Bank : quick and dirty scanning of up to four banks
Select Bank : scanning any combination of the 20 banks

The three sub-modes are :

Normal : a normal scan
Mode : scans only those channels with the specified receive mode
Program : scans only those channels which have been program tagged

This gives us the following nine scan mode types :

Continuous Normal
Continuous Mode
Continuous Program
Bank Normal
Bank Mode
Bank Program
Select Bank Normal
Select Bank Mode
Select Bank Program

Search Band Programming

In this mode, the search bands (A-J, a-j) used to perform searches are programmed with starting and ending frequencies as well as step sizes and receive modes.

Searching

In this mode, the searching operation checks for active transmissions on the frequencies in the specified search range. There are three searching

modes and two searching sub-modes for a total of six different types of search to be performed.

The three modes are :

VFO : starts searching from the current VFO frequency
Band : quick and dirty search of up to 4 search bands
Select Band : searching any combination of the 20 search bands

The two sub-modes are :

Normal : a normal search
Auto-Store : stores active transmissions in Bank j

This gives us the following six search mode types :

VFO Normal
VFO Auto-Store
Band Normal
Band Auto-Store
Select Band Normal
Select Band Auto-Store

Search Pass

The radio is in Search Pass mode when a blinking P indicator is visible and the contents of the Search Pass memory are being displayed.

VFO

The radio is in VFO mode when VFOA & VFOB are displayed. Pressing the MR key toggles between VFO and Memory modes.

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Terminology
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When you see 'FUNC + key'
Press FUNC
You will hear a beep (if enabled) and FUNC will be displayed
Press 'key'
When you see 'FUNC2 + key'
Hold FUNC until you hear two beeps (if enabled)
FUNC will be blinking
Press 'key'

Mode Operations

VFO Mode

Basics

Two VFOs : VFOA & VFOB
Frequency cursor points to active VFO (the one being received)
Press ENT to toggle between active VFOs

Each VFO has its own

Frequency
Step size
Receive mode
Preset
Offset
Duplex mode
Priority channel
Attenuator

Both VFOs share

Duplex shift width
Delay
Index
AM antenna setting
Beep
Battery saver
Bandscope

How to change the frequency

Simply key in the desired frequency

1. Enter the frequency
2. If you make a mistake during entry
   A. Press C/AC
   B. Use arrow keys to select digit to be corrected
   C. Change digit using key press or rotary control
   D. Press ENT when completed
3. Press ENT

NOTE : Instead of correcting at step 2 above, simply press C/AC twice and start over with the frequency entry.

Use the rotary control or arrow keys

Use the rotary control or arrow keys to increase or decrease the currently displayed frequency by the currently set step size. Holding down an arrow key will change the frequency rapidly. If you press FUNC before using the rotary control or arrow keys, the frequency will be changed by 10 times the currently set step size.

Use the ad-hoc approach

This approach allows you to change one or more of the individual MHz digits of the current frequency. Press FUNC + MHz. Use the arrow keys to select the digit to be changed (it will blink faster than the other digits). Press the appropriate number key or use the rotary control to select it. Repeat as necessary to change any other digits. Press ENT to finish entry or C/AC to cancel the changes.

Regardless of how you change the frequency, be sure to verify the receive mode and step size are set appropriately.

Preset

If the PRESET indicator is visible, the radio will automatically select the receive mode, step size and duplex shift width based on the frequency. If you wish to change the receive mode and/or step size, you must disable PRESET. Once PRESET is disabled (turned off), the currently selected receive mode and step size will remain regardless of what frequency is entered. To change the receive mode, step size or PRESET setting, refer to the applicable instructions in this section.

NOTE : Be sure to see the disclaimer for PRESET in the Definitions & Terms section of this guide.

Offset

If the OFFSET indicator is visible (OFFSET enabled), the radio will leave frequencies exactly as they are entered or changed. If OFFSET is disabled (OFFSET not visible), the radio will automatically round every frequency to the closest integral multiple of the

current step size. To change the OFFSET setting, refer to the section below on changing the step size. Most of the time you will want OFFSET disabled (OFFSET indicator not visible).

Changing receive mode

To disable PRESET

1. Press FUNC + MODE
2. Use rotary control or arrow keys to select receive mode
3. Make sure PRESET is not visible
4. Press ENT to accept change or C/AC to cancel

NOTE : once PRESET is disabled, the receive mode will remain regardless of the frequency that is entered.

NOTE : The preset receive mode for the frequency being displayed can be selected with PRESET enabled or disabled. All other receive modes automatically disable PRESET.

NOTE : Be sure to see the disclaimer for PRESET in the Definitions & Terms section of this guide.

To enable PRESET

1. Press FUNC + MODE
2. Use rotary control or arrow keys to select receive mode until PRESET is visible
3. Press ENT to accept change or C/AC to cancel

NOTE : once PRESET is enabled, the receive mode will be automatically selected based on the frequency that is entered.

NOTE : The preset receive mode for the frequency being displayed can be selected with PRESET enabled or disabled. All other receive modes automatically disable PRESET.

NOTE : Be sure to see the disclaimer for PRESET in the Defiintions & Terms section of this guide.

Changing step size

To disable PRESET

1. Press STEP
2. Use rotary control or arrow keys to select step size
3. Make sure PRESET is not visible
4. Press ENT to accept change or C/AC to cancel
5. Notice that OFFSET is now blinking
6. To enable OFFSET press ENT (OFFSET stops blinking), or press C/AC to disable it (OFFSET disappears)

NOTE : once PRESET is disabled, the step size will remain regardless of the frequency that is entered.
NOTE : The preset step size for the frequency being displayed can be selected with PRESET enabled or disabled. All other step sizes automatically disable PRESET.
NOTE : Be sure to see the disclaimer for PRESET in the Definitions & Terms section of this guide.

To enable PRESET

1. Press STEP
2. Use rotary control or arrow keys to select step size until PRESET is visible
3. Press ENT to accept change or C/AC to cancel
4. Notice that OFFSET is now blinking
5. To enable OFFSET press ENT (OFFSET stops blinking), or press C/AC to disable it (OFFSET disappears)

NOTE : once PRESET is enabled, the step size will be automatically selected based on the frequency that is entered.
NOTE : Be sure to see the disclaimer for PRESET in the Definitions & Terms section of this guide.

Duplex Shift

The duplex shift function can be used once the radio is placed in duplex mode. Each VFO has its own duplex mode setting but both share the same duplex shift width.

To check the current shift width

1. Select the desired VFO by pressing ENT
2. Press FUNC2 + DUPSET
3. The non-selected VFO frequency will be replaced by the current shift width. The presence of '-' indicates the shift width will be subtracted from the VFO frequency, otherwise it will be added to it.
4. Press ENT to exit

To change the shift width

1. Select the desired VFO by pressing ENT
2. Press FUNC2 + DUPSET
3. The non-selected VFO frequency will be replaced by the current shift width.
4. Use the keypad to enter a new shift width between 10 kHz and 999.990 MHz. It must be a multiple of 10 kHz.

5. Press ENT to accept or C/AC to cancel
6. Use rotary control or arrow keys to select the shift direction. The presence of '-' indicates the shift width will be subtracted from the VFO frequency, otherwise it will be added to it.
7. Press ENT to accept or C/AC to cancel

To enable duplex shifting

1. Disable PRESET for the desired VFO (see the sections for changing the step size or receive mode)
2. Select the desired VFO by pressing ENT
3. Press FUNC + DUPLEX
4. Note that DUP is displayed
5. To disable duplex shifting, press FUNC + DUPLEX (note DUP disappears) or make sure that PRESET is displayed

To receive the duplex frequency

1. Select the desired VFO by pressing ENT
2. Make sure duplex mode is enabled by the presence of the DUP indicator
3. To receive the duplex frequency, press and hold MONI
4. DUP will blink and the VFO frequency will be replaced by the shifted frequency

Programming Memory

Once a favorite frequency has been entered in VFO mode, it can be programmed into one of the 1000 memory channels (0-999) or one of the 10 priority channels (1000-1009).

When frequency data is copied from a VFO to a memory channel, a specific channel number can be specified or the current memory channel can be used.

To copy to a specific memory channel

1. Enter the 3-digit channel number (0-999)
2. Press FUNC + MW
3. A double-beep is heard

To copy to the current memory channel

1. Press FUNC + MW
2. A double-beep is heard

NOTE : The current memory channel can be noted by pressing MR to enter Memory mode, noting the channel number, then pressing MR to return to VFO mode.

NOTE : When a VFO is copied to memory, the following settings are also copied to that memory channel

1. Frequency
2. Step size
3. Receive mode
4. PRESET setting
5. OFFSET setting
6. Attenuator setting
7. Duplex shift width

Each time a memory write (copying VFO to memory) is performed, the current memory channel is incremented by one. To write successive memory channels, simply enter the frequency data and use the method to copy this frequency to the current memory channel.

When frequency data is copied from a VFO to a priority channel, a specific channel number must be specified.

To copy to a specific priority channel

1. Enter the 4-digit channel number (1000-1009)
2. Press FUNC + MW
3. A double-beep is heard

Bandscope

Press BS to enable and disable Bandscope Mode. For best use, be sure to turn off the Battery Saver feature.

See Bandscope Mode for an explanation of how bandscope works and how it can be used in VFO Mode.

Searching

Searching for new frequencies can be performed using either of the VFO frequencies as a starting point. Refer to Searching Modes for further details.

Bandscope Mode

The bandscope is used to give a graphical representation of activity on frequencies adjacent to the one currently being displayed. The bandscope can be enabled while in VFO, Memory, Scan and Search modes by simply pressing BS.

Once enabled, the bottom two lines of the LCD are used to display the bandscope and adjacent frequency activity. While the bandscope is being displayed, the S-meter and bank/band alpha-tags can not be displayed.

Active transmissions on adjacent frequencies are indicated by the presence of vertical bars. The taller the bar, the stronger the signal.

The number of frequencies for which activity can be displayed depends on the step size and resolution setting. The maximum bandscope width is 1.6MHz or stated slightly differently, the currently displayed frequency +/- 0.8MHz.

Mode	Step	Standard	Narrow
Not WFM	25kHz	65	33
Not WFM	30/50kHz	33	15
Not WFM	100kHz	15	15
Not WFM	125kHz	13	13
WFM	25kHz	65	33
WFM	30/50kHz	33	33
WFM	100kHz	15	33
WFM	125kHz	13	33

To toggle the resolution between Standard and Narrow, press FUNC + SPAN. The amount of time it takes to refresh the display will depend on the resolution setting and step size.

VFO Mode

In VFO mode, the Bandscope displays activity on the frequencies adjacent to the active VFO (frequency cursor). Change the active VFO by pressing ENT. Change the active VFO frequency as you normally would. When Bandscope is active, the S-meter will not be visible.

For best use, be sure to turn off the battery saver feature.

Memory Mode

In Memory mode, the Bandscope displays activity on the frequencies adjacent to the displayed memory channel frequency. When Bandscope is active, neither alpha-tags nor the S-meter will be visible.

For best use, be sure to turn off the battery saver feature.

Scan Mode

In Scan mode, the Bandscope displays activity on the frequencies adjacent to the displayed memory channel frequency. The Bandscope can be enabled either before or after the scan is started. When the scan stops on an active transmission, the Bandscope will be displayed and it will continue to be refreshed until the transmission stops and the scan operation resumes.

When the Bandscope is active, neither alpha-tags nor the S-meter will be visible.

Search Mode

In Search mode, the Bandscope displays activity on the frequencies adjacent to the displayed frequency. The Bandscope can be enabled either before or after the search is started. When the search stops on an active transmission, the Bandscope will be displayed and it will continue to be refreshed until the transmission stops and the search operation resumes.

Marker functions

Press FUNC + MARKER to enable and disable Marker mode.

See Marker Mode for an explanation of how the marker function works and how it can be used in Bandscope Mode.

Marker Mode

The marker is used during Bandscope mode to aid in the identification of displayed frequency activity. The marker can be enabled only when in VFO or Memory mode (i.e. can't be used in Scan or Search modes).

To enable the marker

1. Make sure Bandscope is enabled
2. Press FUNC + MARKER

NOTE : If receiving a Wide-FM signal and the Bandscope is in Narrow mode, the marker can not be enabled.

Notice that VFOA changed to CENT, VFOB changed to MARK and a square

element is now visible at the top of the Bandscope display. The top frequency (CENT) is used to represent the middle of the range around which the Bandscope is displaying frequency activity. The bottom frequency (MARK) is used to indicate the frequency at which the marker is sitting.

To move the marker around the bandscope display
1. Turn rotary control or press the arrow keys

To change the CENT frequency
1. Enter new frequency using digit keys
2. Press ENT

As the marker moves, the MARK frequency is changed to represent its new location. When the Bandscope displays frequency activity, place the marker over the vertical bar to determine the frequency.

To listen to frequency activity on the MARK frequency
1. Press and hold MONI
2. The graphical marker indicators disappear, the frequency cursor points to the MARK frequency and blinks and, the Bandscope display is centered on the MARK frequency
3. Release MONI to return to normal bandscope receive

NOTE : If there is no activity on the MARK frequency when MONI is pressed, the squelch will remain closed.

To copy the MARK frequency to the CENT frequency
1. Press and hold MONI
2. Press ENT

To disable the marker
1. Press FUNC + MARKER

Memory Mode

Memory mode is used to display the contents of memory which consists of the normal 1000 memory channels and the 10 priority channels. Memory mode can be verified by the appearance of a single frequency, the channel number in the upper-left corner and possible alpha-tag information.

See the VFO Mode section for details on memory channels are programmed.

Entering Memory Mode

To enter Memory mode from VFO or Scan mode
1. Press MR

To enter Memory mode from Search mode
1. Press MR
2. Now in VFO mode
3. Press MR

To enter Memory mode from Search Pass mode
1. Press C/AC
2. Now in VFO mode
3. Press MR

Displaying Memory Channel Data

The 1000 memory channels have been broken down into 20 banks which are labeled from A-J and a-j. Each bank consists of 50 channels with each starting at an even frequency (0, 50, 100, etc.).

To move around within the memory channels
1. Use the rotary control or arrow keys
2. When the end of memory is reached in either direction, it will simply wrap around to the other end and continue

To display a specific memory channel
1. Key in the 3-digit channel number (0-999)
2. Press MR

Displaying Priority Channel Data

The Priority channels constitute a single bank, P, which contains 10 frequencies which start at channel number 1000.

To display a specific priority channel
1. Key in the 4-digit channel number (1000-1009)
2. Press MR
3. Channel number is displayed as 'Pn' where n is 0-9

To move around within the priority channels, use the rotary control or arrow keys.

NOTE : The memory channels and priority channels have been separated so that they do not become confused with each other. The rotary control or arrow keys can not be used to move between them; it

will remain within the set of channels being displayed.

Copying Memory Channel To VFO

To copy a memory channel frequency and its settings to one of the two VFOs

1. Display the memory channel to be copied
2. Press FUNC + M>V
3. VFO mode will be displayed with a blinking frequency cursor
4. Use the rotary control or arrow keys to select the other VFO
5. Press ENT to copy or C/AC to cancel

NOTE : Priority channels can not be copied to the VFO.

Copying A Memory Channel To Another

To copy the contents of one memory channel to another

1. Display the memory channel to be copied
2. Press FUNC + M.COPY
3. Memory bank information will be displayed
4. Use the rotary control or arrow keys to select the destination memory bank
5. Press ENT to continue or C/AC to cancel
6. Memory channel information will be displayed
7. Use the rotary control or arrow keys to select the destination memory channel
8. Press ENT to continue or C/AC to cancel
9. The new memory channel data will be displayed briefly

NOTE : Memory channels can not be copied to priority channels and vice versa.

Editing Memory Alpha-tags

Initially all channels are empty which can be verified by the lack of a displayed frequency. The alpha-tag of the bank or a channel can be edited as deemed necessary.

To edit a MEMORY BANK alpha-tag

1. Go to VFO mode
2. Press FUNC + EDIT
3. Press up/right arrow key - BANK is selected
4. Press ENT
5. Use rotary control or arrow keys to select bank letter
6. Press ENT

7. Press up/right arrow key
8. Enter 9 character alpha-tag using arrow keys to select the character and the rotary control to change it
9. Press ENT when done
10. Repeat steps 5 - 9 to enter alpha-tags for other banks
11. Press C/AC at any time to return to the previous menus. Multiple presses will eventually return to VFO mode.

To edit a MEMORY/PRIORITY CHANNEL alpha-tag

1. Go to VFO mode
2. Press FUNC + EDIT
3. Press up/right arrow key - Bank is selected
4. Press ENT
5. Use rotary control or arrow keys to select bank letter
6. Press ENT
7. Use the rotary control to select the channel
8. Press down/left arrow key
9. Enter 9 character alpha-tag using arrow keys to select the character and the rotary control to change it
10. Press ENT when done
11. Repeat steps 5 - 10 to enter alpha-tags for other channels
12. Press C/AC at any time to return to the previous menus. Multiple presses will eventually return to VFO mode.

If bank or channel data has been programmed with an alpha-tag, this information will be alternatively displayed next to the bank letter. If no alpha-tag information has been programmed, only the bank letter will be visible.

Erasing Memory Channel Data

Once a memory/priority channel has been programmed to memory, it is easy to erase the channel contents.

To erase the contents of a memory/priority channel

1. Display the desired channel
2. Press FUNC + MW

NOTE : When all channels have been erased from a bank, the alpha-tag for that bank will also be erased.

Receiving Empty Channel Signals

Due to the design of this receiver, if an empty memory channel is being displayed, the radio circuitry will be trying to receive the

frequency of the last non-empty channel that was accessed. While this causes no harm, it can be surprising when it occurs.

Attenuator

The attenuator setting for each memory channel can be changed at any time. The current status can be view by looking for the ATT indicator.

To change the attenuator setting

1. Display the desired memory/priority channel
2. Press FUNC + ATT

Bandscope

Press BS to enable and disable Bandscope Mode. For best use, be sure to turn off the Battery Saver feature.

See Bandscope Mode for an explanation of how bandscope works and how it can be used in Memory Mode.

Duplex Shift

The duplex shift function can be used once the radio is placed in duplex mode.

To enable duplex shifting

1. Press FUNC + DUPLEX
2. Note that DUP is displayed

NOTE : When in Memory mode, duplex shifting is enabled or disabled for all channels.

To receive the duplex frequency

1. Select the desired memory channel
2. Make sure duplex mode is enabled by the presence of the DUP indicator
3. To receive the duplex frequency, press and hold MONI
4. DUP will blink and the frequency will be replaced by the shifted frequency

NOTE : The duplex frequency can not be received for a memory channel which has PRESET on.

NOTE : Be sure to see the disclaimer for PRESET in the Definitions & Terms section of this guide.

To disable duplex shifting

1. Press FUNC + DUPLEX
2. Note that DUP disappears

Scan Pass

Associated with each memory channel is a setting which allows that channel to be skipped during scan operations. This feature is called scan pass and is covered in more detail under Scanning Modes.

To set scan pass

1. Display the desired memory channel
2. Press FUNC + PASS
3. Note that CH blinks

NOTE : Priority channels can not set scan pass.

To clear scan pass

1. Display the desired memory channel
2. Press FUNC + PASS
3. Note that CH does not blink

Program Scan

This feature allows up to ten channels in each bank to be specially tagged so that they may be scanned separately from the rest of the channels in that bank. This feature is called program scan and is covered in more detail under Scanning Modes.

To Tag A Memory Channel

1. Display the desired memory channel
2. Press FUNC + PGM
3. The PGM indicator appears

NOTE : Priority channels do not support program scan and therefore can not be tagged.

To Untag A Memory Channel

1. Display the desired memory channel
2. Press FUNC + PGM

3. The PGM indicator disappears

Scanning Modes

The MVT-9000 offers nine different ways to scan the contents of memory. There are three major and three minor modes of operation. By combining a major mode with a minor mode, nine different scanning types are available.

The three major modes are

Continuous

This mode allows for the scanning of every non-empty bank.

Bank

This mode allows for up to four specified banks to be scanned. Up to four banks from memory banks A-J or up to four banks from memory banks a-j can be specified. Banks from both A-J and a-j can not be specified together.

Select Bank

This mode allows for any combination of banks to be scanned. A menu is provided to allow banks to be added or removed from the list of banks to be scanned.

The three minor modes are

Normal

This mode simply scans all non-empty memory channels.

Mode

This mode scans memory channels with the specified receive mode (AM/CW/FM/LSB/NAM/USB/WFM)

Program

This mode scans memory channels which have been specially tagged.

Scan Pass

Regardless of the chosen scanning mode, channels that have been

marked as 'pass' will not be scanned. On most radios, this feature is referred to as channel lockout.

To Enable Channel Pass/lockout
---

1. Display the specified memory channel
2. Press FUNC + PASS
3. Note the CH indicator blinks

To Disable Channel Pass/lockout
---

1. Display the specified memory channel
2. Press FUNC + PASS
3. Note the CH indicator does not blink

While Scanning

If the scan stops on a channel that you do not wish to have scanned in the future, this channel can be passed by

1. Press FUNC + PASS
2. A double beep is sounded and the scan resumes

Changing Scan Direction

All scanning modes start at the lowest applicable channel and work towards the highest. To change the direction to scan from highest to lowest once the scan has started, turn the rotary control in a counter-clockwise direction or press the down/left arrow key. At any time, the scanning direction can be reversed by simply using the rotary control or arrow keys.

Resuming Scanning

If the scan stops on an active channel that you do not wish to monitor, simply use the rotary control or arrow keys to resume the scan.

Canceling Scan

To cancel a scan while it is running, simply press SCAN or MR.

The Nine Scanning Modes

Continuous Normal

This mode is used to scan every programmed memory channel in every bank. To start this mode

1. Press SCAN
2. The SCAN indicator appears

Continuous Mode

This mode is used to scan every programmed memory channel in every bank which has the specified receive mode. To start this mode

1. Press FUNC + M-SCAN
2. Receive mode will blink
3. Use rotary control or arrow keys to select receive mode
4. Press ENT
5. The SCAN indicator appears and receive mode blinks

Continuous Program

This mode is used to scan every programmed memory channel in every bank which has been specially tagged with the program scan setting (PGM indicator). To start this mode

1. Press FUNC + P-SCAN
2. The SCAN indicator appears and PGM blinks

Bank Normal

This mode is used to scan up to four specified banks from either A-J or a-j. Think of this as a quick-n-dirty way to start a scan. To start this mode

1. Specify up to four banks from A-J by pressing the appropriate digit key or up to four banks from a-j by pressing '.' then the appropriate digit key.
2. Press SCAN
3. The B-SCAN indicator appears

NOTE : The specified banks must all come from A-J or from a-j; they can not be mixed.

NOTE : The selected banks are always scanned in alphabetical order (A-J or a-j) regardless of the order in which they were entered.

Bank Mode

This mode is used to scan the channels of up to four specified banks from either A-J or a-j which have the specified receive mode.

To start this mode

1. Specify up to four banks from A-J by pressing the appropriate digit key or up to four banks from a-j by pressing '.' then the appropriate digit key.
2. Press M-SCAN
3. Receive mode will blink
4. Use rotary control or arrow keys to select receive mode
5. Press ENT
6. The SCAN indicator appears and receive mode blinks

NOTE : The specified banks must all come from A-J or from a-j; they can not be mixed.

NOTE : The selected banks are always scanned in alphabetical order (A-J or a-j) regardless of the order in which they were entered.

Bank Program

This mode is used to scan every programmed memory channel which has been specially tagged with the program scan setting (PGM indicator) from up to four specified banks from either A-J or a-j. To start this mode

1. Specify up to four banks from A-J by pressing the appropriate digit key or up to four banks from a-j by pressing '.' then the appropriate digit key.
2. Press FUNC + P-SCAN
3. The SCAN indicator appears and PGM blinks

NOTE : The specified banks must all come from A-J or from a-j; they can not be mixed.

NOTE : The selected banks are always scanned in alphabetical order (A-J or a-j) regardless of the order in which they were entered.

Select Bank Normal

This mode is used to scan every programmed memory channel in every specified bank. Any combination of the 20 banks is allowed. To start this mode

1. Press .
2. Press SCAN
3. The Bank Check Menu is displayed with the bottom two rows of the LCD displaying the selected banks. Any bank which is not selected appears as a '-'.
4. To change the selected banks

A. Press ENT
B. Memory bank information will be displayed
C. Use rotary control or arrow keys to display the desired bank
D. Press MONI to select the bank or C/AC to deselect it. There will be no visible confirmation of your choice; only a beep will sound.
E. Press ENT when your selections are complete
F. The Bank Check Menu is again displayed to verify your selections. To make further selections, repeat this process starting at A.

5. Press SCAN
6. The SELB-SCAN indicator appears

Select Bank Mode

This mode is used to scan every programmed memory channel in every specified bank having the specified receive mode. Any combination of the 20 banks is allowed. To start this mode

1. Press .
2. Press FUNC + M-SCAN
3. Receive mode will blink
4. Use rotary control or arrow keys to select receive mode
5. Press ENT
6. The Bank Check Menu is displayed with the bottom two rows of the LCD displaying the selected banks. Any bank which is not selected appears as a '-'.
7. To change the selected banks
   A. Press ENT
   B. Memory bank information will be displayed
   C. Use rotary control or arrow keys to display the desired bank
   D. Press MONI to select the bank or C/AC to deselect it. There will be no visible confirmation of your choice; only a beep will sound.
   E. Press ENT when your selections are complete
   F. The Bank Check Menu is again displayed to verify your selections. To make further selections, repeat this process starting at A.
8. Press SCAN
9. The SELB-SCAN indicator appears and receive mode blinks

Select Bank Program

This mode is used to scan every programmed memory channel in every

specified bank which has been specially tagged with the program scan setting (PGM indicator). Any combination of the 20 banks is allowed. To start this mode

1. Press .
2. Press FUNC + P-SCAN
3. The Bank Check Menu is displayed with the bottom two rows of the LCD displaying the selected banks. Any bank which is not selected appears as a '-'.
4. To change the selected banks
   A. Press ENT
   B. Memory bank information will be displayed
   C. Use rotary control or arrow keys to display the desired bank
   D. Press MONI to select the bank or C/AC to deselect it. There will be no visible confirmation of your choice; only a beep will sound.
   E. Press ENT when your selections are complete
   F. The Bank Check Menu is again displayed to verify your selections. To make further selections, repeat this process starting at A.
5. Press SCAN
6. The SELB-SCAN indicator appears and PGM blinks

Attenuator

The attenuator may be used during scanning to reduce signal strength.

See Attenuator in the Other Features section for further details.

Bandscope

Press BS to enable and disable Bandscope Mode.

See Bandscope Mode for an explanation of how bandscope works and how it can be used while scanning.

Delay

The delay may be used during scanning to lengthen the scan resume delay time from 2 to 4 seconds.

See Delay in the Other Features section for further details.

Index

The index feature may be used during scanning to make sure the scan does not stay on any active frequency more than 4 seconds.

See Index in the Other Features section for further details.

Search Band Programming Mode

The MVT-9000 has 20 search bands (A-j, a-j) which are used to perform band searches. Before a band is used to perform a search, it should be programmed with a starting and ending frequency as well as a step size and receive mode to be used during the search. To start this mode

1. Press FUNC2 + BW
2. Use the rotary control or arrow keys to select the band
3. Press ENT
4. Frequency cursor blinks next to the top frequency
5. Enter the starting search frequency
6. Press ENT
7. Frequency cursor blinks next to the bottom frequency
8. Enter the ending search frequency
9. Press ENT
10. The PRESET indicator blinks
11. Press ENT to accept the preset step size and receive mode. To program a different step size and/or receive mode, press C/AC then
    - A. Receive mode blinks
    - B. Use rotary control or arrow keys to select the receive mode
    - C. Press ENT
    - D. Step size blinks
    - E. Use the rotary control or arrow keys to select the step size
    - F. Press ENT
    - G. The OFFSET indicator blinks
    - H. Press ENT to enable OFFSET or press C/AC to disable it
12. Cursor blinks over alpha-tag
13. Enter 9 character alpha-tag using arrow keys to select the character and the rotary control to change it
14. Press ENT
15. Repeat at step 2 to program further search bands or press C/AC to exit this mode

NOTE : Be sure to see the disclaimer for PRESET in the Definitions & Terms section of this guide.

Editing Search Band Alpha-tags

A user-specified alpha-tag can be added to each of the twenty search

bands allowing for easy identification when searching that band. When programming the search band, you can specify an alpha-tag then. To edit the alpha-tag any time after that

1. Go to VFO mode
2. Press FUNC + EDIT
3. Press down/left arrow key - BAND is selected
4. Press ENT
5. Use rotary control or arrow keys to select band letter
6. Press ENT
7. Enter 9 character alpha-tag using arrow keys to select the character and the rotary control to change it
8. Press ENT when done
9. Repeat steps 5 - 8 to enter alpha-tags for other bands
10. Press C/AC at any time to return to the previous menus. Multiple presses will eventually return to VFO mode.

If a search band has been programmed with an alpha-tag, this information will be displayed next to the band letter when searching that band. If no alpha-tag information has been programmed, only the band letter will be visible.

Searching Modes

The MVT-9000 offers six different ways to search for active frequencies. There are three major and two minor modes of operation. By combining a major mode with a minor mode, six different search types are available.

The three major modes are

VFO

This mode allows for a search to be started from one of the currently displayed VFO frequencies.

Band

This mode allows for up to four specified bands to be searched. Up to four bands from search bands A-J or up to four bands from search bands a-j can be specified. Banks from both A-J and a-j can NOT be specified together.

Select Band

This mode allows for any combination of the twenty bands to be searched. A menu is provided to allow bands to be added or removed

from the list of bands to be searched.

The two minor modes are

Normal

This mode performs a simply search which pauses when frequency activity is detected so that you may listen.

Auto-Store

This mode stores active frequencies into a predefined bank.

Changing Search Direction

All search modes start at the designated starting frequency and successively increment this frequency using the current step size to try and find frequency activity. To reverse the direction of the search at any time, simply turn the rotary control in a counter-clockwise direction or press the down/left arrow key. At any time, the search direction can be reversed by simply using the rotary control or arrow keys.

Search Pause

While in any of the search modes, pressing ENT when searching will pause the search. While paused, the frequency cursor will blink and the displayed frequency can be changed using the rotary control or arrow keys. To resume searching, press SRCH or press ENT to cancel the search.

Resume Searching

If the search stops on an active frequency that you do not wish to monitor, simply use the rotary control or arrow keys to resume the search.

Canceling Search

To cancel a search while it is running, simply press SRCH or MR.

Auto-Store

This mode performs a search and if activity is detected on a frequency, that frequency is stored in bank j and the search continues. You do not get to hear the audio from this frequency

activity because the radio pauses just long enough to store the frequency and then resumes searching.

Each time an Auto-Store search is started, the contents of bank j are erased. As active frequencies are found, there will be a short pause as the radio stores the frequency in bank j. Once the frequency is stored, there will be a beep and the radio will continue the search.

During the search, should bank j become full (all 50 channels stored with search discovered frequencies), the search will be aborted.

The Six Searching Modes

VFO Normal

This mode is used to start a simple search from either of the VFOs. Before starting the search, be sure the frequency, step size and receive mode are set appropriately. To start this mode

1. Press ENT to select the desired VFO
2. Press SRCH
3. The SRCH indicator appears

VFO Auto-Store

This mode is used to start a simple search from either of the VFOs and store active frequencies into bank j. Before starting the search, be sure the frequency, step size and receive mode are set appropriately. To start this mode

1. Press ENT to select the desired VFO
2. Press FUNC + AW SET
3. The SRCH indicator blinks informing Auto-Store is active
4. Press SRCH

Band Normal

This mode is used to search up to four specified bands from either A-J or a-j. To start this mode

1. Specify up to four bands from A-J by pressing the appropriate digit key or up to four bands from a-j by pressing '.' then the appropriate digit key.
2. Press SRCH
3. The B-SRCH indicator appears along with programmed search band settings. If an alpha-tag has been programmed for the

specified band(s), it will appear also.

NOTE : The specified banks must all come from A-J or from a-j; they can NOT be mixed.
NOTE : The selected bands are always scanned in alphabetical order (A-J or a-j) regardless of the order in which they were entered.

Band Auto-Store

This mode is used to search up to four specified bands from either A-J or a-j and store active frequencies into bank j. To start this mode

1. Press FUNC + AW SET
2. The SRCH indicator blinks informing Auto-Store is active
3. Specify up to four bands from A-J by pressing the appropriate digit key or up to four bands from a-j by pressing '.' then the appropriate digit key.
4. Press SRCH
5. The B-SRCH indicator blinks and programmed search band settings are displayed. If an alpha-tag has been programmed for the specified band(s), it will appear also.

NOTE : The specified banks must all come from A-J or from a-j; they can NOT be mixed.
NOTE : The selected bands are always scanned in alphabetical order (A-J or a-j) regardless of the order in which they were entered.

Select Band Normal

This mode is used to search every specified search band. Any combination of the 20 bands is allowed. To start this mode

1. Press .
2. Press SRCH
3. The Band Check Menu is displayed with the bottom two rows of the LCD displaying the selected bands. Any band which is not selected appears as a '-'.
4. To change the selected bands
   A. Press ENT
   B. Memory band information will be displayed
   C. Use rotary control or arrow keys to display the desired band
   D. Press MONI to select the band or C/AC to deselect it. There will be no visible confirmation of your choice;

only a beep will sound.
E. Press ENT when your selections are complete
F. The Band Check Menu is again displayed to verify your selections. To make further selections, repeat this process starting at A.
5. Press SRCH
6. The SELB-SRCH indicator appears along with programmed search band settings. If an alpha-tag has been programmed for the specified band(s), it will appear also.

Select Band Auto-Store

This mode is used to search every specified search band and store active frequencies into bank j. Any combination of the 20 bands is allowed. To start this mode

1. Press FUNC + AW SET
2. The SRCH indicator blinks informing Auto-Store is active
3. Press .
4. Press SRCH
5. The Band Check Menu is displayed with the bottom two rows of the LCD displaying the selected bands. Any band which is not selected appears as a '-'.
6. To change the selected bands
   A. Press ENT
   B. Memory band information will be displayed
   C. Use rotary control or arrow keys to display the desired band
   D. Press MONI to select the band or C/AC to deselect it. There will be no visible confirmation of your choice; only a beep will sound.
   E. Press ENT when your selections are complete
   F. The Band Check Menu is again displayed to verify your selections. To make further selections, repeat this process starting at A.
7. Press SRCH
8. The SELB-SRCH indicator blinks and programmed search band settings are displayed. If an alpha-tag has been programmed for the specified band(s), it will appear also.

Attenuator

The attenuator may be used during a search to reduce signal strength.

See Attenuator in the Other Features section for further details.

Bandscope

Press BS to enable and disable Bandscope Mode.

See Bandscope Mode for an explanation of how bandscope works and how it can be used in Search Mode.

Delay

The delay may be used during a search to lengthen the search resume delay time from 2 to 4 seconds. This feature will have no function if Auto-Store is enabled.

See Delay in the Other Features section for further details.

Index

The index feature may be used during a search to make sure the search does not stay on any active frequency more than 4 seconds. This feature will have no function if Auto-Store is enabled.

See Index in the Other Features section for further details.

Search Pass

Regardless of the chosen search mode, frequencies that have been marked as 'pass' will not be tested for activity. To read more about this capability, see the Search Pass Mode section.

Search Pass Mode

This mode allows you to display and edit the contents of the Search Pass memory. This memory contains a list of frequencies which are to be ignored when the radio is in one of the search modes. By doing so, this allows you to skip over frequencies of known origin or those that are active most/all of the time. Up to 500 frequencies can be entered into this memory.

To Put A Frequency In Search Pass Memory

When in VFO mode
---
1. Tune the VFO to the desired frequency
2. Press FUNC + PASS

3. The P indicator will display briefly and two beeps will be heard

When in Search mode

1. Make sure the radio has stopped on the desired frequency
2. Press FUNC + PASS
3. The P indicator will display briefly, two beeps will be heard and the search will resume

To Display Search Pass Memory

1. Go to VFO mode
2. Press FUNC + S.P.READ
3. The step size will be replaced with a flashing P indicator while the frequency cursor points to a frequency in the list
4. Use the rotary control or arrow keys to display any remaining frequencies in the memory.

NOTE : If there are no frequencies stored in memory, the message "* NULL! *" will be displayed briefly and the radio will remain in VFO mode.

NOTE : The frequencies are stored in this memory in numerical order making it easier to find a known frequency.

NOTE : Signals can be received on the frequency while it is being displayed.

To Remove A Frequency

1. Display the desired frequency
2. Press FUNC + PASS
3. Two beeps will be heard and the next frequency will be displayed

NOTE : When the last frequency has been removed, the message "* NULL! *" will be displayed briefly and the radio will return to VFO mode.

To Exit From Search Pass Memory

Press C/AC or FUNC + S.P.READ

Priority Mode

The MVT-9000 can be programmed with up to ten priority channels which,

when priority is enabled, will be checked every five seconds for activity. The 10 priority channels are actually an extension of the 1000 memory channels and are collectively referred to as bank P.

Programming A Priority Channel
---

1. Go to VFO mode
2. Tune the desired frequency and receive mode
3. Enter the 4-digit priority channel number (1000-1009) to be written
4. Press FUNC + MW
5. The channel number 'Pn' (where n is 0-9) is briefly displayed then the radio returns to VFO mode

Displaying Priority Channel Data

The Priority channels constitute a single bank, P, which contains 10 channels starting at memory channel number 1000.

To move around within the priority channels

1. Key in the 4-digit channel number (1000-1009)
2. Press MR
3. Channel numbers are displayed as 'Pn' where n is 0-9. P0 is equivalent to channel 1000 and so on up to P9 which is 1009.
4. Use the rotary control or arrow keys

NOTE : The memory channels and priority channels have been separated so that they do not become confused with each other. The rotary control or arrow keys can NOT be used to move between them; it will remain within the set of channels being displayed.

Editing Priority Alpha-tags

Initially all channels are empty which can be verified by the lack of a displayed frequency. The alpha-tag of the bank or a channel can be edited as deemed necessary.

To edit the priority bank alpha-tag

1. Go to VFO mode
2. Press FUNC + EDIT
3. Press up/right arrow key - BANK is selected
4. Press ENT
5. Use rotary control or arrow keys to select bank P
6. Press ENT
7. Press up/right arrow key
8. Enter 9 character alpha-tag using arrow keys to select the

character and the rotary control to change it
9. Press ENT when done
10. Press C/AC at any time to return to the previous menus. Multiple presses will eventually return to VFO mode.

To edit a priority channel alpha-tag
1. Go to VFO mode
2. Press FUNC + EDIT
3. Press up/right arrow key - Bank is selected
4. Press ENT
5. Use rotary control or arrow keys to select bank P
6. Press ENT
7. Use the rotary control to select the channel
8. Press down/left arrow key
9. Enter 9 character alpha-tag using arrow keys to select the character and the rotary control to change it
10. Press ENT when done
11. Repeat steps 5 - 10 to enter alpha-tags for other channels
12. Press C/AC at any time to return to the previous menus. Multiple presses will eventually return to VFO mode.

If bank or channel data have been programmed with an alpha-tag, this information will be alternatively displayed next to the bank letter P. If no alpha-tag information has been programmed, only the bank letter P will be visible.

Erasing Priority Channel Data

Once a priority channel has been programmed to memory, it is easy to erase the channel contents.
1. Display the desired channel (1000-1009)
2. Press FUNC + MW

NOTE : When all priority channels have been erased, the alpha-tag for bank P will also be erased.

Enabling Priority Mode

Once the desired priority channels have been programmed, they are now ready to be checked for activity. There are two sub-modes that can be used to check the channels for activity.

Priority Normal

This mode is used to scan up to four specified channels from bank

P. To start this mode
1. Specify up to four channels from P0-P9 by pressing the appropriate digit key (0-9).
2. Press FUNC + PRI
3. The PRI indicator appears

NOTE : The selected banks are always scanned in numerical order regardless of the order in which they were entered.

Priority Select

This mode is used to scan individually specified channels from the priority bank P. Any combination of the 10 channels is allowed.
To start this mode
1. Press .
2. Press FUNC + PRI
3. The Priority Check Menu is displayed with one row of the LCD being used to display channels which have been selected. Any channel which is not selected appears as a '-'.
4. To change the selected channels
   A. Press ENT
   B. Bank P information will be displayed
   C. Use rotary control or arrow keys to display the desired channel.
   D. Press MONI to select the bank or C/AC to deselect it. There will be no visible confirmation of your choice; only a beep will sound.
   E. Press ENT when your selections are complete
   F. The Priority Check Menu is again displayed to verify your selections. To make further selections, repeat this process starting at A.
5. Press SRCH
6. The PRI indicator appears

NOTE : All selected priority channels are checked every five seconds regardless of what other mode the radio is in.
NOTE : The selected channels are always scanned in numerical order regardless of the order in which they were entered.
NOTE : Once priority mode is enabled, you can then go to VFO, Memory, Scan or Search mode and the priority channels will continue to be checked every five seconds.

Disabling Priority Mode

To disable priority mode

1. Press FUNC + PRI
2. The PRI indicator disappears

Attenuator

The attenuator setting for each priority channel can be changed at any time. The current status can be view by looking for the ATT indicator.

To change the attenuator setting
1. Display the desired priority channel
2. Press FUNC + ATT

Scan Pass

Priority channels can not be passed.

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Other Features
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AM Antenna

To aid in the reception of mediumwave (540-1710kHz) broadcasts, the MVT-9000 is equipped with an internal AM antenna. For typical mobile monitoring sessions, this will provide adequate reception for stronger stations. When at home and there is access to a dedicated shortwave antenna, this internal version can be bypassed allowing reception to occur via the antenna attached to the BNC connector.

The internal antenna is selected when shipped from the factory. This can be verified by the presence of the ANT indicator.

To bypass the internal antenna
1. Press FUNC2 + AM ANT
2. The ANT indicator disappears

To use the internal antenna
1. Press FUNC2 + AM ANT
2. The ANT indicator appears

Attenuator

If the radio is used in an area where excessively strong signals are active, it may be necessary to reduce their strength to ensure that the radio receiver functions properly. The Attenuator is used to reduce the strength of signals entering into the receiver.

Signals which enter the radio and are too powerful for it to handle, may result in various forms of interference. Such signals may effect frequencies to either side or can even desensitize the receiver so that it may not be able to receive signals it normally can.

To enable the Attenuator
1. Press FUNC + ATT
2. The ATT indicator appears

To disable the Attenuator
1. Press FUNC + ATT
2. The ATT indicator disappears

Both VFOs have their own attenuator setting. Each memory channel can be individually programmed with an attenuator setting. After a search operation is started, the Attenuator can be enabled or disabled as is deemed necessary.

Battery Meter

The Battery Meter is used to give a graphical indication of the power remaining in the batteries.

To display the Battery Meter
1. Press C/AC
2. 'B' is displayed along with the meter normally used for the S-meter
3. This display will disappear automatically after five seconds. To remove it sooner, press C/AC

When the display drops to a single bar, the battery indicator will appear. When the display only shows the 'B', the battery indicator will blink and the radio will power off automatically within a few minutes unless fresh batteries are installed.

NOTE : New alkaline batteries will display a full scale reading (all ten bars) while fully charged NiCd/NiMH cells will only show 5 or 6 bars due to the lower voltage rating of these type cells.

Battery Saver

To extend the operating time of the radio, the Battery Saver feature is used. Not only can this feature be enabled or disabled upon request, the amount of time the saver circuitry is active can be selected.

To enable the Battery Saver

1. Press FUNC + SAVE
2. The ZZZ indicator appears

To disable the Battery Saver

1. Press FUNC + SAVE
2. The ZZZ indicator disappears

The Battery Saver is only effective when used in VFO or Memory modes. If no transmission is detected on the displayed frequency within five seconds, the Battery Saver is engaged.

Once engaged, the Battery Saver puts the radio "to sleep" for a period of time, then "wakes up" briefly to check for an active transmission. The amount of time the radio spends "sleeping" can be selected. While the radio is "asleep", power usage is lowered thus saving battery power. The longer the sleep time, the more power is saved and the longer the batteries will last.

To select the sleep time

1. Press a digit key between 1 (0.1 seconds of sleep) and 0 (1 second of sleep)
2. Press FUNC + SAVE
3. The ZZZ indicator appears

NOTE : The sleep time is set to 1 second when shipped from the factory.

Once the Battery Saver is engaged, the bottom two lines of the LCD will display "*Saving...*" and the amount of sleep time that is in use. For this reason, Battery Saver should not be used since it will prevent the Bandscope, S-meter and alpha-tags from being displayed should it become engaged.

Beep

The MVT-9000 sounds a beep tone each time a key is pressed. This helps to provide audible feedback during radio operations. Shipped from the

factory, the beep tone is enabled which can be verified by the presence of the BZ indicator. For more discreet operations, it may be necessary to disable this feature.

To disable the beep tone
1. Press FUNC2 + BEEP
2. The BZ indicator disappears

To enable the beep tone
1. Press FUNC2 + BEEP
2. The BZ indicator appears

Delay

During a scan or search operation, after a transmission ends, there will be a two second delay before the scan/search is resumed. This delay allows for a response to be heard. To increase this delay time to four seconds, the Delay function is used.

To enable Delay
1. Press FUNC + DELAY
2. The DLY indicator appears

To disable Delay
1. Press FUNC + DELAY
2. The DLY indicator disappears

Descrambler

The MVT-9000 MkII comes with descrambler circuitry which can be used to unscramble voice inverted transmissions used on some cordless phones and law enforcement radios.

To enable the descrambler
1. Press MONI twice quickly (within 1 second)
2. The audio characteristics of a received signal should change

NOTE: Try this on a non-scrambled transmission to note the change in audio as well as to find out what a voice inverted signal sounds like.

To disable the descrambler
1. Press MONI

To adjust the descrambler inversion point

1. Enable the descrambler
2. Press and hold LOCK until two beeps are heard
3. Use the rotary control to adjust the inversion point
4. Press FUNC + LOCK
5. Press MONI

NOTE: There are roughly 110 - 120 selectable inversion points.

Index

The Index function is used during scan and search modes to prevent the radio from stopping on any one frequency for an undue amount of time.

Normally, when scanning or searching comes across an active transmission it will stop on that frequency until the transmission ceases and then resume scanning/searching. For some situations, staying on one frequency for too long may miss transmissions occurring on other frequencies.

When the Index function is enabled, if the scan or search operation stops on an active transmission, it will resume the scan/search when the transmission ends or four seconds have elapsed; whichever occurs first.

To enable Index

1. Press FUNC + INDEX
2. The INDEX indicator appears

To disable Index

1. Press FUNC + INDEX
2. The INDEX indicator disappears

NOTE : The Index function has no effect on active priority channel signals.

Key Lock

The two key lock functions are provided to help prevent accidental key or control activations from effecting your monitoring. When partial key locking is enabled, the rotary control remains active but all keys are disabled except for PWR, FUNC, LAMP, MONI, LOCK, and C/AC. When full key locking is enabled, the rotary control is disabled (unless the

descrambler has already been enabled) as are all keys except for PWR, FUNC, and LOCK.

To enable partial key locking
1. Press LOCK
2. The KEY LOCK indicator appears

To enable full key locking
1. Press and hold LOCK until two beeps are heard
2. The KEY LOCK indicator appears

To enable full key locking while in partial key locking
1. Press and hold LOCK until a beep is heard
2. The KEY LOCK indicator is still present

To disable key locking
1. Press FUNC + LOCK
2. The KEY LOCK indicator disappears

Lamp

The MVT-9000 contains a brilliant backlighting system which is used to illuminate both the display and keypad for nighttime operations.

To set single five-second illumination (factory default)
1. Press LAMP
2. The LAMP indicator is not displayed

To set constant illumination
1. Press and hold LAMP until the LAMP indicator blinks
2. Press FUNC + LAMP to turn off

To set five-second illuminations per keypress
1. Press FUNC2 + LAMP
2. The LAMP indicator appears
3. Press FUNC + LAMP to turn off

NOTE : Excessive use of the Lamp feature will dramatically reduce the operational time of the radio when batteries are being used.

Monitor

The MONI button on the side of the radio is used for several purposes.

Normally, pressing it immediately opens the squelch. This allows for checking transmissions whose strengths might be below the squelch threshold or for monitoring weak signals which are fading in and out resulting in repetitive squelch operations.

In Marker mode, the MONI button is used to receive the marker frequency next to the MARK indicator. If the radio detects that there is no transmission on the marker frequency, it will not open the squelch when MONI is pressed.

When the duplex function is enabled in VFO mode, MONI is used to receive the duplex shift frequency.

When editing a Bank/Band/Priority Check Menu, MONI is used to select a bank/band/priority channel.

Opening Message

When the MVT-9000 is first powered on, an opening message is displayed on the bottom two lines of the LCD. This message can be changed as needed.

To edit the Opening Message

1. Enter VFO mode
2. Press FUNC + EDIT
3. Flashing arrow points to 'Opening'
4. Press ENT
5. Current opening message is displayed
6. Use left and right arrows to select character to be changed
7. Use rotary control to change the character
8. Press ENT to accept changes or C/AC twice to cancel

Power-on Resume

This built-in functionality allows the MVT-9000 to continue doing what it was doing when it was powered off, in some instances. Scanning operations will not be resumed but will leave the radio in Memory Mode on the last accessed channel.

If the radio was searching when it was turned on, upon power-on, it will enter Search Pause mode. Simply press SRCH to resume the search or press ENT to stop it.

The settings regarding Bandscope and Priority mode will be remembered so that they can be set appropriately upon power-on.

Reset

The MVT-9000 has a feature which allows the processor to be reset should the radio act peculiar. Using this feature effectively restores the radio to the condition it was in when it left the factory.

ALL MEMORY DATA WILL BE ERASED! ALL SEARCH BANDS AND VFO SETTINGS WILL BE RESET TO THEIR DEFAULT VALUES!

To perform the reset

1. Make sure the radio is powered off
2. Press and hold both the C/AC and ENT keys
3. Turn the radio on
4. "* Clear *" will be displayed briefly
5. The radio will be in VFO mode

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