

MH-39 Keypad Functions

Below are short descriptions of the various controls and button functions on the MH-39 microphone. The print on the keyfaces or orange labels indicate their primary function, while white labeling above or around the button indicates an alternate function (accessed by pressing PTT , followed by the desired button). A quick reference table is also provided on pages 15-16. Detailed descriptions and operation are covered later in the *Operation* chapter.

MIC

Beneath this grill is the condenser microphone element. Speak across this opening in a normal tone of voice while pressing the PTT.



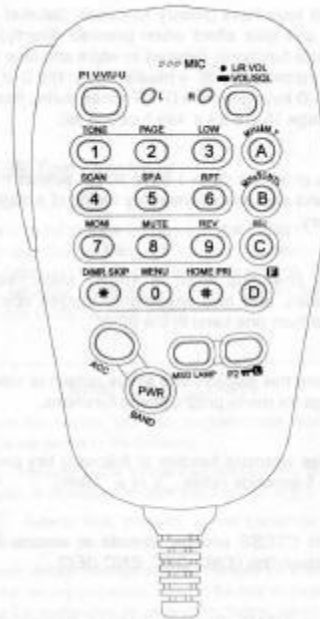
This activates a user-programmed function, or else enables dual in-band receive (V&V, U&U).



These glow or blink to indicate an alternate function is selected (after pressing PTT), or which channel (left/right) the active setting applies.



To adjust the receiver volume, first press this momentarily to select the left/right channel (indicated by the L or R LED), then rotate the **VOL** control for a comfortable level. The squelch is adjusted in a similar manner by first holding the button longer for $\frac{1}{2}$ sec. (L or R LED blinks).



Keypad

MH-39 keys have primary functions, (labeled in orange and take effect when pressed directly), and alternate functions, (labeled in white and take effect when preceded by PTT → [desired key]). The 0-9, #, *, and A-D keys generate DTMF tones during transmit. See page 15-16 for a key function list.



Tunes channels up in 1-MHz steps, selects memories, and also enables memory tuning of a displayed memory.



Tunes channels down in 1-MHz steps, selects memories, and also temporarily toggles operating control from one band to the other.



Pressing this displays and saves default or selected settings for menu programming functions.



Enables alternate function of following key pressed within 5 seconds (while L or R blink).



Selects CTCSS encode, decode or encode & decode operation (**ENC, DEC, ENC DEC**).



Selects DTMF Paging, Trigger Paging, Code Squelch, and CTCSS Bell operation.



Selects high, medium, or low transmitter RF output power.



Activates VFO or memory channel scanning.



Enable/disable the receiver Spectra-Analyzer. Press momentarily to start manual "one-shot" sweep, or hold it to start continuous sweeping.



Press to select the desired Tx offset (+/-) needed for repeater operation.



Momentarily disables receiver squelch to monitor weak stations.



Toggles the sub receiver audio muting feature on/off.



Reverse Tx/Rx frequencies momentarily during duplex or repeater operation.



Momentarily displays the programmed menu settings for review, or to make changes. Holding it longer than $\frac{1}{2}$ second writes current channel data to an allocated memory.



Toggles operation between the DIAL and programmed memory channels, or selects scan skip for selected memories.



Momentarily pressing this recalls the Home channel for the selected band. Holding it longer activates priority memory monitoring.



Selects prestored message slots for transmission during DTMF Message operation. Also activate the keypad backlighting for better viewing in darkness.



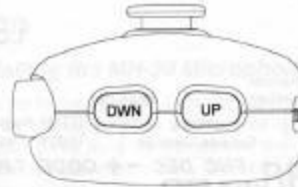
Momentarily pressing this activates a second user-programmed function. Holding it longer locks MH-39 buttons, PTT or the transceiver DIAL knob (various locking schemes are menu-selectable).



Hold this to turn the transceiver on/off, or press momentarily to toggle main/sub channel operation.



Press to activate the accessory function. In European versions, this keys the transmitter and sends a 1750-Hz tone burst to access repeaters requiring it. In other transceiver versions this key is not used.



MH-39 Top Controls



Press or hold to tune up/down in the default channel step size. During Menu Programming, these move from displayed headings to available entries. With an entry selected, pressing or moves between available fields for data entry.

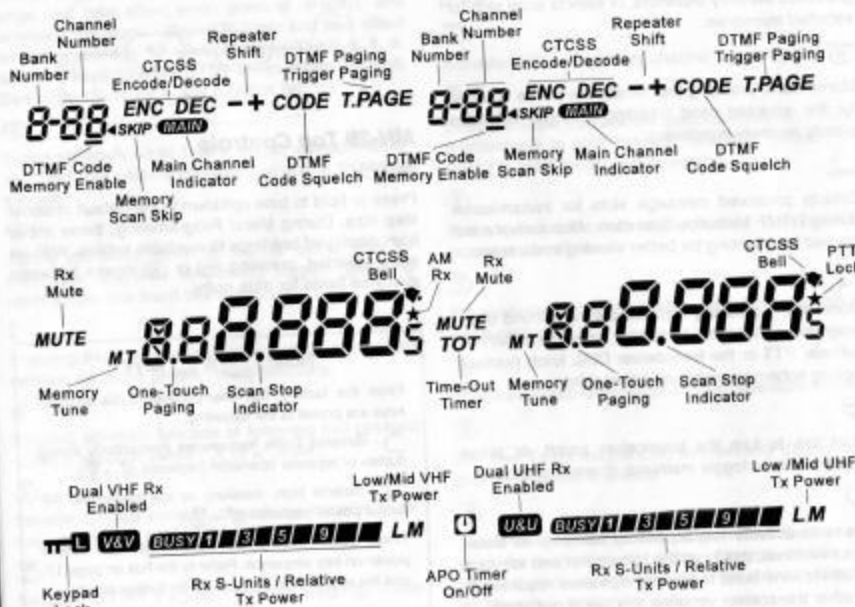
Note! - & keys














From the factory, the user-programmable function keys are preset to the following:

- Reverse Tx/Rx frequencies momentarily during duplex or repeater operation (replaces →).
- Selects high, medium, or low transmitter RF output power (replaces →).

These default settings can be changed by a simple power-on key sequence. Refer to the box on page 17, and the explanation on page 22 for further details.












LCD Indications





MH-39 Keypad Button Functions				
Button	Normal Function (Rx/Tx)	Alternate Function (after pressing )	Hold >0.5 sec.	Press button & Power On
	Enter digit 1 / DTMF 1	Toggles CTCSS encode, decode, encode & decode on/off.	-	Keypad direct-access mode.
	Enter digit 2 / DTMF 2	Selects Paging, Trigger Paging, Code Squelch, or CTCSS Bell.	-	-
	Enter digit 3 / DTMF 3	Toggles high, mid, or low Tx output power.	-	Keypad alt-function direct-access mode.
	Enter digit 4 / DTMF 4	Activates VFO or memory channel scanning.	PMS	-
	Enter digit 5 / DTMF 5	Activates single-sweep spectra analyzer.	Activates continuous spectra analyzer sweep.	-
	Enter digit 6 / DTMF 6	Selects repeater shift (Tx offset) direction: + / - / simplex.	-	Activate cross-band repeat.
	Enter digit 7 / DTMF 7	Momentarily disables receiver squelch.	-	-
	Enter digit 8 / DTMF 8	Toggles receiver audio mute feature on / off.	-	-
	Enter digit 9 / DTMF 9	Reverses Tx & Rx frequencies.	-	-
	Enter digit 0 / DTMF 0	Recalls menu programming routine.	One-touch memory write.	Direct Menu-Access Mode.
	Toggle DIAL & MR mode / DTMF *	Memory channel scan-skip on/off.	-	Memory Bank transfer mode.
	Transfers operation to the Home channel/DTMF #.	Priority channel monitoring	-	-

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Button	Normal Function (Rx/Tx)	Alternate Function (after pressing )	Hold >0.5 sec.	Press button & Power On
	Tune up in 1 MHz steps / DTMF A.	Enables Memory Tuning of the displayed memory.	-	-
	Tune down in 1 MHz steps / DTMF B.	Temporarily transfers main control to the other band.	-	-
	Menu setting selection / DTMF C.	N/A (no function).	-	-
	Activate alternate function of following key / DTMF D.	N/A (no function).	-	Transceiver Clone Mode.
	Activates user-programmed function #1.	Locks the microphone controls and buttons.	-	P2 key user-set mode*.
	Recall received message bank for display & checking.	Turns keypad lamp on/off.	-	-
	Toggles main and sub channel operation.	N/A (no function).	Turns radio on / off.	-
	Activates user-programmed function #1.	Enables dual in-band receive (V&V, U&U).	-	P1 key user-set mode*.
	Select L/R channel for volume control.	N/A (no function).	Squelch set for L/R channel.	-
	Jumper-selectable function*.	Same as normal function.	Same as normal function.	-

*Note - for more information on applications and programming of  and , see the box on the next page, and also on page 22.

If you enter an incorrect digit at any time, simply press the PTT and start over again (this does not key the transmitter).

Mixed Receive (V & V,U & U) Operation

You can simultaneously receive on two VHF or two UHF channels, and select either channel as the main channel for operation. During mixed receive, the sub-channel receiver is disabled during transmit.

Pressing $\text{PTT} \rightarrow \text{M}$ toggles transceiver operation between normal and mixed receive, with M selecting either V&V (M lit) or U&U (M lit).

For example, to activate V&V receive, first press $\text{PTT} \rightarrow \text{M}$ as necessary so that M is lit. Next, press $\text{PTT} \rightarrow \text{M}$ (V&V or V&U appear in the display indicating which combination is selected).

Afterwards, the DIAL knob, M , and M keys are used as before for tuning or scanning operation on either receiver.

Note - During mixed receive, sensitivity and IMD of the alternate receiver is degraded slightly, however this should not greatly affect performance, except in highly RF-congested areas.

User-Programmed Keys

All transceiver functions and settings are accessible via keypad sequences from the MH-39. As explained before, most buttons have multiple functions, depending on the duration they are held depressed (less or more than 1/2 sec.), or if they are preceded by the key entry $\text{PTT} \rightarrow$ (to enable their alternate function).

Two special keys, M and M , can each be assigned a function (of the users selection) to simplify routine transceiver operation. This is especially convenient for functions that require two-keystroke activation, as they can now be accessed with a single push of a button. Examples are: scanning, power output, spectra analyzer - any of the ivory-labeled functions on the keypad.

To program M or M , hold either key while turning on the power (M LEDs blink). Next, press the button with the ivory label corresponding to the function you wish to assign...that's it. Let's try two examples:

ex. assign Programming Menu recall to M .

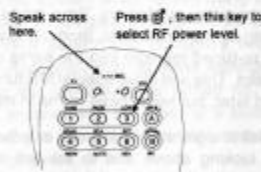
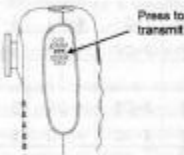
- Hold M while turning on the power, then press $\text{PTT} \rightarrow \text{M}$. From now on, pressing M replaces $\text{PTT} \rightarrow \text{M}$.

ex. assign Spectra Analyzer activation to M .

- Hold M while turning on the power, then press $\text{PTT} \rightarrow \text{M}$. From now on, momentarily pressing M activates one-sweep spectrum analyzer operation, holding it longer (>1/2 sec.) starts continuous sweeping.

Transmitting

Select the desired transmit power by pressing $\text{PTT} \rightarrow \text{M}$, then $\text{PTT} \rightarrow \text{M}$ as necessary to select high, mid, or low output. A three-pitch beep sounds along with each level, and L or M appear when low or mid-power levels are selected, respectively.



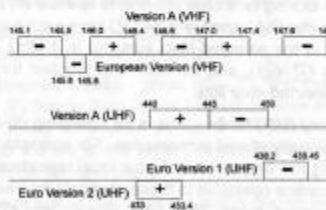
To transmit, press and hold the PTT while speaking across the microphone element grill in a normal voice. Release the PTT to receive again. During transmission, LCD bargraph segments appear and the red TX lamp just above the DIAL knob turns on (as shown in the graphic).

	VHF	UHF
L	5 W	5W
M	10 W	10 W
H	50 W	35 W

Repeater Operation

The ARS (Auto Repeater Shift) feature allows easy repeater operation by automatically selecting the standard shift (-/+) used in the VHF/UHF repeater sub bands of the country the unit is shipped to.

ARS-Repeater Subbands



Pressing the PTT is all that is normally needed to operate on standard "open" repeaters. If the repeater uses a reverse shift, you can select this manually by toggling the $\text{PTT} \rightarrow \text{M}$ button until the required shift

appears. To listen on the repeater input (to see if you can work a station direct, for example), you can reverse Rx/Tx frequencies by pressing $\text{M} \rightarrow \text{R}$.

For repeaters requiring a CTCSS tone for access, press $\text{M} \rightarrow \text{T}$ to activate the CTCSS tone encoder (ENC appears). CTCSS tones are selected from menu function 6 (page 64) and operation is covered later on page 36.

Note: European versions can access repeaters requiring a 1750 Hz tone burst by pressing $\text{M} \rightarrow \text{B}$ (this activates the transmitter and sends the 1750 Hz tone). In other versions this switch has no function.

Selecting DIAL or Memory Operation

DIAL Mode - This is for tuning or scanning a band when looking for a clear channel to operate on. In this mode, the DIAL knob and $\text{M} \rightarrow \text{D}$ keys each tune the band in the selected step size, (or in 1-MHz steps using $\text{M} \rightarrow \text{A}$ / $\text{M} \rightarrow \text{B}$), and the scanning function tunes in the selected step size.

Memory (MR) Mode - This is for operating on channels usually stored in memories. For example, after storing the frequencies of your local repeaters, you can confine operation to those channels by selecting the memory mode. The DIAL, $\text{M} \rightarrow \text{D}$, and $\text{M} \rightarrow \text{A}$ / $\text{M} \rightarrow \text{B}$ keys and scanning function select stored memories.

Each band has 50 general-purpose memories arranged into five banks with ten memory channels per bank. These banks can be transferred from one band

to another as needed (explained later). Six additional special-purpose memories store band scanning & tuning limits, a priority channel and a home channel.

Memory Structure					
General Purpose Memories					Special Use
1-01	2-01	3-01	4-01	5-01	L1
1-02	2-02	3-02	4-02	5-02	U2
↓	↓	-	↓	↓	L2
1-09	2-09	3-09	4-09	5-09	U2
1-10	2-10	3-10	4-10	5-10	PP1

Each memory has a Memory Tune mode which allows tuning similar to the DIAL mode, and storing the resulting re-tuned memory into the same or another memory slot. This and other special MR functions are described later, but keep these terms in mind.

You can tell at a glance which mode is active for each band by looking above and to the left of the first frequency digit. If you see a number or name (such as 1-01 or PP1), you are in the MR mode. The numbered annotation denotes bank and channel. For example 1-01 indicates bank 1, channel 1.

The $\text{M} \rightarrow \text{D}$ key toggles between DIAL and the last-used memory. While in the MR mode, your previous DIAL settings are preserved.

Memory Storage

There are 112 programmable memories. These consist of 100 regular memories divided into 10 banks, along with 6 special-purpose memories (L1, L2, U1, U2, PRI and HOME) for each band. Normally, the ten memory banks are divided evenly, providing 5 banks (50 memory channels) each for VHF and UHF. If you need more memories on a particular band, you can transfer banks as needed (see the box to the right).

Each memory can store separate receive and transmit frequencies or repeater shift, and CTCSS tone data. The Home channel memory is recalled instantly by pressing $\text{M} \rightarrow \text{H}$. The L1 & U1 and L2 & U2 memories can be used in pairs to store the programmable tuning and scanning limit as described later, in addition to general purpose operation. The PRI memory can be used for priority channel monitoring.

You can assign alphanumeric (A/N) names up to 6 characters long to each memory, and have it displayed by name rather than frequency. Memories that have not been named are still displayed in the usual 3-01, L1 format, so you can mix and select the way memories are displayed.

A choice of 60 different characters is available, with 24 special-purpose symbols to customize your name tags (see the table on page 48). While programming frequency and operating settings into a memory, you can assign it a name. Refer to menu function 1, on page 62.

Transferring Memory Banks

The ratio between VHF and UHF memory banks can be changed as needed. Hold the $\text{M} \rightarrow \text{R}$ button while turning the transceiver on. The display appears as below showing the present memory bank ratio:

UHF 5 BANKS UHF 5 BANKS

Press $\text{M} \rightarrow \text{A}$ / $\text{M} \rightarrow \text{B}$ to select the ratio you need, then press the PTT to save and exit. **Note!** previously-stored channel data is lost when performing this procedure!

Notice that pressing $\text{M} \rightarrow \text{R}$ from the VFO mode always recalls the last stored or used memory. When storing memories, <UNCONT> appears on the display for memories that have not been previously programmed, while <AVAILABLE> appears when memories presently storing data are selected.

Recalling Memories

Previously, we used $\text{M} \rightarrow \text{D}$ to change from the VFO mode to the memories after they were stored. The group and channel number appears at the display top whenever operating on a memory.

After at least one memory has been stored, you can select memories for operation by pressing $\text{M} \rightarrow \text{D}$ then using the DIAL or $\text{M} \rightarrow \text{A}$ / $\text{M} \rightarrow \text{B}$ keys. Only pre-stored memories are displayed: empty memories are skipped. To exit the memories and return to the last-used VFO, press $\text{M} \rightarrow \text{R}$.

Home Channel Memory

The Home channel is an instant-recall memory (one per band) that can be used to give quick access to any commonly used frequency (such as a simplex calling channel or club repeater). It is instantly recalled from DIAL or MR modes by pressing \overline{H} .

When \overline{H} is pressed, H appears in the channel box for the respective band while the Home channel is selected. The Home channel memory is set to bottom edge of the band by default, but you can reprogram it with any frequency and repeater state, or even a separate transmit frequency.

To program the Home channel memory, select 03:HOME CHANNEL WRITE under the <MEMORY FUNCTIONS> menu (page 63) and use the same procedure as for storing regular memories.

Split Memory Operation

All memories can store an independent transmit frequency, for operation on repeaters with non-standard shift.

Note! - this operation requires at least one of the user-programmed keys to be configured for menu recall.

- Store the receive frequency in the desired memory using the method already described (it does not matter if a repeater offset is active).

- Tune the VFO to the desired transmit frequency. Press \overline{F} → $\overline{0}$, then \overline{M} → \overline{W} to again bring up the 01:MEMORY WRITE entry.

- Press $\overline{0}$, then hold the PTT switch while pressing $\overline{0}$ or \overline{M} (whichever is set for menu recall) once more momentarily (this does not key the transmitter).

Whenever you recall a separate transmit frequency memory, "- +" appear together above the appropriate frequency display. Again, you can press $\overline{0}$ → $\overline{0}$ to display the transmit frequency, and the shift symbols will blink. You can also press $\overline{0}$ → $\overline{0}$ to cancel repeater shift (temporarily, until you change channels).

After storing a memory with a separate transmit frequency, rewriting the receive frequency *also* deletes the separate transmit frequency.

Tuning Memories

While receiving on a recalled memory, you can retune it and change other memorized settings (such as repeater shift) by pressing \overline{F} → \overline{A} . The **MT** icon appears to the left of the channel display, and you can tune in the same way as described before (including 1-MHz steps).

- To store the retuned frequency or setting in the current (or other) memory: press $\overline{0}$ → $\overline{0}$, bring up the 01:MEMORY WRITE entry, select a new memory (if desired). Press $\overline{0}$ → $\overline{0}$ again to save

the retuned memory, then $\overline{0}$ to exit memory tuning.

- Once you have retuned a memory, if you don't want to save your changes, just press $\overline{0}$ to return to the original memory data.

Clearing Memories

If you regularly move from one area to another, you may want to use certain memories at specific locations or times. You can temporarily clear undesired memories (except memory channel 1-0 f) and restore them any time later when needed. Refer to menu function 2 on page 63 for details on memory clearing. The status of each memory appears on the menu display.

The following are a few terms to be familiar with:

- <VACANT> indicates the memory has not been previously programmed.
- <RESTORE> appears for previously written memories which have been erased.
- <ERASE> indicates memories stored with data but not yet erased.
- <PERMANENT> only appears on memory 1-0 f; this memory cannot be erased.

One-Touch Memory

To store channel data quickly, press $\overline{0}$, then **hold** $\overline{0}$ for 1 second to write the current channel setting into the first vacant memory of the last available bank. For example, if five banks were made available for VHF (see the box on page 30), and all memories in bank 5 were vacant, channel data would be entered into 5-0 f. You can later recall this memory and assign it a name or move it to another memory channel, as desired.

Memory-Only Mode

If you would like to only operate on memory channels, you can use this feature for very simple operation: only stored memories can be selected and displayed (along with their alphanumeric names, if so tagged). Indicators for settings like repeater shift and tone squelch are still displayed, although they cannot be changed. Only TX power, volume/squelch, channel selection and paging operation can still be selected.

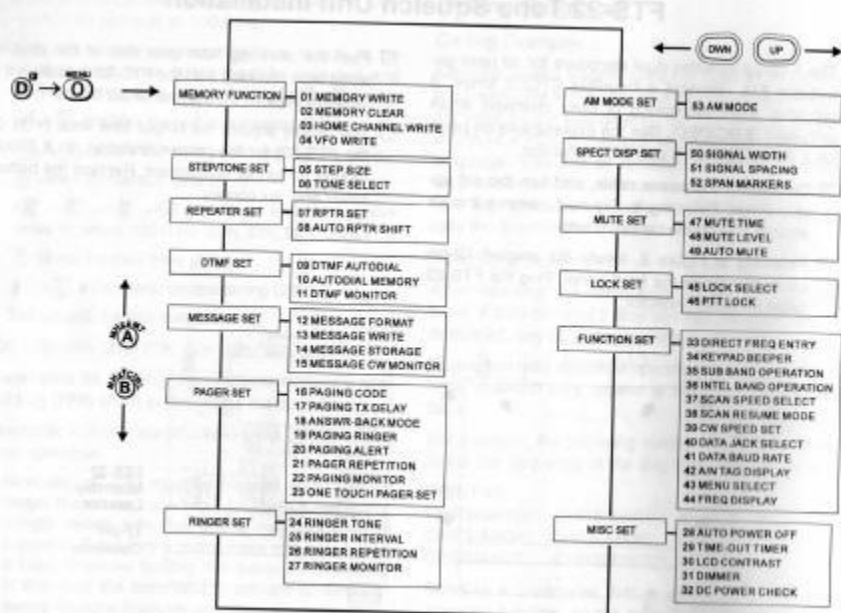
- After programming memories, you can toggle memory-only operation by holding $\overline{0}$ & $\overline{0}$ while turning on the power.

CTCSS Operation

You can access repeaters requiring a CTCSS (continuous, subaudible) tone, and silently monitor for calls on busy channels. The encode "ENC" function superimposes a subaudible tone on the transmitted carrier. The decode "DEC" (tone squelch) function monitors receiver audio through a narrow filter at the same subaudible frequency, keeping the squelch closed until you receive a matching tone (with optional FTS-22 tone squelch unit installed). To check or set the current CTCSS tone frequency, refer to menu function 6 on page 64.

To activate CTCSS functions, press $\text{P} \rightarrow \text{1}$ when the operating frequency is displayed. With one press, **ENC** (encode) appears above the display and the tone generator is activated for transmission. Press $\text{P} \rightarrow \text{1}$ again and **ENC DEC** are displayed together as the tone squelch system is activated for both transmit and receive (only incoming signals "encoded" with the matching tone open the squelch). To turn off the tone squelch features, press 1 once more.

You can store CTCSS tones (and encode/decode states) in each memory in the same manner and at the same time as storing channel frequencies. To change the tone or state stored in a memory, just recall it, reset the tone frequency or function, and store the memory again. If you activate CTCSS on a subband limit memory, it will be active when that memory is used to start subband operation.



Menu Programming and Custom Settings

This chapter covers all of the menu entries and selection settings used by the transceiver. These functions were described previously, but must be configured as desired using menu programming. Menu and entry headings are shown as they appear in the display to assist you as you go along.

Menu Organization

Fifty three transceiver settings are contained in one of thirteen menus (refer to the menu loop shown on the opposite page). To enable menu selection and programming, press $\text{M} \rightarrow \text{M}$ momentarily.

Hint - to eliminate the need for a two-keystroke input to activate Menu Programming, this feature can be assigned to either M or M for faster access and operating convenience (see page 22).

The lower display heading contained within the $\text{M} \rightarrow \text{M}$ brackets is the *menu title*, and the number inside of the [] list how many entries are available for the selected menu. Setting for menu entries preceded by a "*" symbol take effect for both bands, otherwise the setting must be configured twice (once for VHF then again for UHF).

Turning the DIAL knob, or pressing A / B maneuvers inside the menu loop. When the desired menu appears, press M or M to display its first entry (some menus have only one entry, while others have

as many as twelve). Use A / B or the DIAL again to view the other menu entries.

Hint: If you know the number of the entry you want, you can go directly to it using the keypad.

ex. to recall 46:PTT LOCK, simply press $\text{4} \rightarrow \text{6}$.

With an entry appearing, you must press M to display its default setting, then once again use M / M to select or change a setting. Pressing M saves the entry setting and exits.

Let's begin by doing an example that demonstrates the basic procedure used throughout this chapter.

ex. change the default CTCSS tone to 103.5 Hz.

First press $\text{M} \rightarrow \text{M}$ to bring up the menu display.

<MEMORY FUNCTIONS> [4]

Press A / B once so that the STEP/TONE SET menu appears. Press M or M so menu entries appear, then press A / B or turn the DIAL until 06:TONE SELECT is displayed. **Note:** tone select could also have been recalled directly by pressing $\text{0} \rightarrow \text{6}$.

Press M so the default setting - TONE 00 5 Hz - blinks, then use the DIAL or press A / B until 103.5 Hz appears. Press M again to save the entry and return to the original menu or $\text{M} \rightarrow \text{M}$ to exit.

This demonstrates the basic method used for most transceiver menu-based settings. The remainder of this chapter covers each menu in order with a brief description of entries and their settings. A menu flowchart is provided for your reference on page 60, refer to this as necessary.

Menu Headings

As mentioned before, the menu "loop" contains 13 headings and a total of 53 entries encompassing most transceiver functions and settings. Entries are numbered and grouped under appropriate headings. A brief explanation of each menu heading, its various entries and their settings follows:

<MEMORY FUNCTIONS> [4]

There are 55 programmable memory channels for each band. These consist of 50 regular memories arranged into 5 banks, along with 5 special-purpose memories. Memories can be tagged with alphanumeric names (up to six characters in length) if desired. Each memory can store separate receive and transmit frequencies or repeater shift, and CTCSS tone data (also refer to the memory organization table on page). The Home channel memory is recalled instantly by pressing M and L1, U1, L2 & U2 memories can be used in pairs to store the programmable tuning and scanning limit as described on page 34, in addition to general purpose operation.

01: MEMORY WRITE

To store a frequency in memory, first select the desired frequency (and repeater split manually, if desired) in the dial mode as already described.

Press M so that the memory label blinks. If the memory has not been previously programmed <VACANT> appears, otherwise <AVAILABLE> is displayed. If you select one that is already being used (stored with data), it will be overwritten with new data in the next step.

Press A / B , or use the DIAL to select channel groups or L1, U1, L2, U2 & PRI. With a channel group appearing, press M / M once to "open" up the group, then A / B or use the DIAL to select a specific memory within that group to fill. To attach a name to the memory, proceed to the next step, otherwise press $\text{M} \rightarrow \text{M}$ to save the entry and exit.

To name the memory, press M so that the first underline blinks. Pressing A / B selects any of 85 characters (including upper-case and lower-case alphabet, numbers and special symbols). With the desired first character appearing, press M to move to the right and select the next character in the same manner.

After entering the desired name or after six characters, press $\text{M} \rightarrow \text{M}$ to save all data for the channel and exit to the dial mode.

02: MEMORY CLEAR

This is used to temporarily erase all data from a previously-programmed memory. Memories can later be restored if needed.

- Press **[C]** so that the small group number blinks.
- Press **[M]/[D]**, then **[A]/[B]** (or use the DIAL) to select the memory to erase or restore. In the lower left display one of three cases appear:
 - <VACANT> indicates the memory has not been previously programmed.
 - <RESTORE> appears for previously written memories which have been erased.
 - <ERASE> indicates memories stored with data but not yet erased.
 - <PERMANENT> only appears on memory 1-0; this memory cannot be erased.
- Pressing **[F]→[D]** erases and restores selected memories with previously-programmed data, and exits to the dial.

03: HOME CHANNEL WRITE

- The instant-recall home channel is programmed in similar fashion to regular memories (remember to first select a frequency and any other desired settings). To attach a name to the Home channel, proceed to the next step, otherwise press **[F]→[D]** to save the entry and exit. Press **[C]** so that *H*

appears in the memory window, and the first character's place blinks.

- Press **[A]/[B]** to select the first character of the name for the home channel.
 - Press **[D]** to select the next character. Repeat the sequence **[D]**, then **[A]/[B]** to finish the name, then press **[F]→[D]** to save the entry and exit to the dial.
- 04: VFO WRITE
- Names can be entered for display to identify VFO (Dial) operation. Press **[C]** so that the underline of the first character's place blinks.
 - Press **[A]/[B]** to select the first character, then press **[D]** to move once to the right, then **[A]/[B]** to select the next character. Repeat the sequence to finish the name, then press **[F]→[D]** to save the entry and exit. When overwriting old entries, pressing **[F]→[D]** clears any characters to the right of the cursor.

Note

While selecting and entering characters for names, you can instantly return to the first character of the alphabet set (upper & lower case) or numeral set by simply pressing **[A]**. You can also move among the first characters of each set by repeatedly pressing **[A]**. Refer to the table on page 48.

63

<STEP/TONE SET> [2]

Tuning steps are preset for the country the unit is exported, but can be changed to any one of seven available steps. Tone selection is used to access repeaters that require a CTCSS (continuous, subaudible) tone, and to silently monitor for calls on busy channels. See page 36 for an explanation on CTCSS operation.

05: STEP SIZE

- Press **[C]** for the channel step selection, then **[M]/[D]** (or turn the DIAL) to choose the desired step. Press **[C]** again to save the entry and exit.

06: TONE SELECT

- Press **[C]** to display the current CTCSS tone, then **[A]/[B]** (or turn the DIAL) to choose a different tone. Press **[C]** again to save the entry and exit. CTCSS tone frequencies (Hz) are listed below:

67.0	85.4	107.2	136.5	173.8	225.7
69.3	88.5	110.9	141.3	179.9	233.6
71.9	91.5	114.8	146.2	186.2	241.8
74.4	94.8	118.8	151.4	192.8	250.3
77.0	97.4	123.0	156.7	203.5	
79.7	100.0	127.3	162.2	210.7	
82.5	103.5	131.8	167.9	218.1	

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<REPEATER SET> [2]

The repeater shift is pre-set to 600 kHz for VHF, and 5, 7.6 or 1.6 MHz for UHF. When tuning through standard repeater subbands, ARS (Auto Repeater Shift) selects the appropriate shift and offset (+/-) for easy operation. The following entries enable changing the default offset or turning ARS on/off.

07: AUTO RPTR SHIFT

- Press **[C]** to display the default offset, then **[M]/[D]** to select the offset digits place, and **[A]/[B]** to change the offset value.
- With the correct offset displayed, press **[C]** again to save the entry and exit.

08: REPEATER SHIFT

- Press **[C]** to see if ARS is presently enabled or disabled. Press **[M]/[D]** to turn ARS on or off, then press **[C]** to save the entry and exit.

NOTE! Since offsets are independent for VHF and UHF, this setting must be repeated for *both* bands.

*30: LCD CONTRAST

LCD contrast can be continuously adjusted for maximum clarity.

- Press **[F1]** to display the current contrast level.
- Press **[A]/[B]** (or use the DIAL knob) to adjust the contrast to a comfortable level between 1-16, then press **[F1]** to save and exit.

*31: DIMMER

The LCD backlighting has 6 brightness levels that can be adjusted manually, automatically (via the front panel ADS sensor) or turned off for best viewing under different lighting conditions.

- Press **[F1]** to display the current backlighting level.
- Press **[A]/[B]** (or use the DIAL knob) to adjust the backlight to a comfortable level between 1-6 (manual), 1-6 (auto), or OFF. Press **[F1]** to save and exit.

*32: DC POWER CHECK

- Press **[F1]** once to check the present DC supply voltage, then again to exit.

<FUNCTION SET> [12]

Other features that custom-configure transceiver operation and display appearance are included here.

*33: DIRECT FREQ ENTRY

- Press **[F1]** and press **[MEM]/[D]** to turn the feature on/off. Press **[F1]** to save and exit.

*34: KEYPAD BEEPER

- Press **[F1]** and press **[MEM]/[D]** to turn the key beeper on/off. Press **[F1]** to save and exit.

35: SUB BAND OPERATION

- Press **[F1]** to display the current sub band display configuration.
- Press **[MEM]/[D]** to turn the sub band display on or off, or else have the DC supply voltage displayed in place of the frequency. Press **[F1]** to save and exit.

*36: INTEL BAND DISPLAY

- Press **[F1]** to display the current IBD setting.
- Press **[MEM]/[D]** to turn Intelligent Band Display on or off, then press **[F1]** to save and exit.

<LOCK SET> [2]

The keypad buttons and DIAL knob can each be "locked" (disabled), to prevent inadvertent adjustments. You will find **[LCK]** displayed at the left when any of these are locked. The PTT can also be locked to prevent transmitting accidentally, and **[★]** appears in the *right* display when this lock is active. *Note:* do not confuse the PTT lock with the *blinking* **[★]** in the *left* display, which indicates AM receive is on.

The keypad and DIAL knob are locked by pressing **[F1]** (**[LCK]** appears). Press **[F1]** again to unlock. The PTT lock is separately enabled via menu function 46.

*45: LOCK SELECT

- Press **[F1]** to display the current locking scheme. To lock only DIAL knob input, select DIAL, to additionally disable all keypad buttons and controls, select BOTH (using **[MEM]/[D]**). Press **[F1]** to save and exit.

*46: PTT LOCK

- Press **[F1]**, then **[MEM]/[D]** to enable or disable the PTT lock.

<MUTE SET> [3]

This function mutes or disables audio from a selected band (channel) when two stations are received simultaneously.

*47: MUTE TIME

- Press **[F1]**, then **[A]/[B]** (or use the DIAL) to select 1-60 minutes mute duration or OFF for continuous mute.
- Press **[F1]** to save and exit.

*48: MUTE LEVEL

- Press **[F1]**, then **[A]/[B]** to select level 1 (pre-set mute) or level 2 (full mute).
- Press **[F1]** to save and exit.

*49: AUTO MUTE

- Press **[F1]**, then **[MEM]/[D]** to select VHF or UHF muting, or else OFF to disable the auto mute function.
- Press **[F1]** to save and exit.