

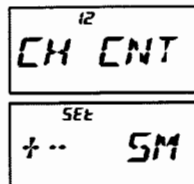
CHANNEL COUNTER OPERATION

Setting the Channel Counter Sweep Width

You may change the bandwidth of the Channel Counter. Available selections are ± 5 , ± 10 , ± 50 , and ± 100 MHz (default: ± 5 MHz).

Here is the procedure for setting the Channel Counter Bandwidth:

1. Press the **[F/W]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 12: CH CNT.
3. Press the **[F/W]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to select the desired bandwidth.
5. When you have made your selection, press the **PTT** key to save the setting and exit to normal operation.



EPCS (Enhanced Paging & Code Squelch)

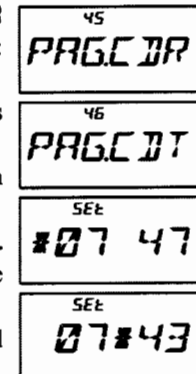
The **VX-6R** includes an Enhanced CTCSS tone encoder/decoder and a dedicated micro-processor providing paging and selective calling feature. This allows you to place a call to a specific station (Paging), and to receive calls of your choice directed only to you (Code Squelch).

The paging and code squelch systems use two pairs of (alternately switched) CTCSS tones which are stored in the pager memories. Basically, your receiver remains silent until it receives the CTCSS tone pair that matches those stored in the Receiving Pager Memory. The squelch then opens so the caller is heard, and the paging ringer immediately sounds, if activated. When you close the **PTT** switch to transmit, the CTCSS tone pair which is stored in the Transmitting Pager Memory will be transmitted automatically.

On the paged radio, the squelch will close automatically after the incoming page ends. Meanwhile, on the paging radio, the Enhanced Paging and Code Squelch system will be disabled after the **PTT** switch is released after the paging transmission. You may re-activate the Enhanced Paging and Code Squelch system again using Set Mode Item 43: PAGER, if desired.

Storing the CTCSS Tone Pairs for EPCS Operation

1. Press the **[F/W]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 45: PAG.CDR for the Receiving CTCSS Tone Pair or Set Mode Item 46: PAG.CDT for the Transmitting CTCSS Tone Pair.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to set the CTCSS Tone number which corresponds to the first tone of the CTCSS Tone Pair.
5. Press the **[MODE(SP S)SQ TYP]** key, then rotate the **DIAL** knob to set the CTCSS Tone number which corresponds to the second tone of the CTCSS Tone Pair.
6. Press the **PTT** switch to save the new setting and exit to normal operation.



The VX-6R does not recognize the order of the 1st tone and the 2nd tone. In other words, for example, the VX-6R considers both CTCSS pairs "10, 35" and "35, 10" to be identical.

CTCSS TONE NUMBER

No.	Hz	No.	Hz	No.	Hz	No.	Hz	No.	Hz
01	67.0	11	94.8	21	131.8	31	171.3	41	203.5
02	69.3	12	97.4	22	136.5	32	173.8	42	206.5
03	71.9	13	100.0	23	141.3	33	177.3	43	210.7
04	74.4	14	103.5	24	146.2	34	179.9	44	218.1
05	77.0	15	107.2	25	151.4	35	183.5	45	225.7
06	79.7	16	110.9	26	156.7	36	186.2	46	229.1
07	82.5	17	114.8	27	159.8	37	189.9	47	233.6
08	85.4	18	118.8	28	162.2	38	192.8	48	241.8
09	88.5	19	123.0	29	165.5	39	196.6	49	250.3
10	91.5	20	127.3	30	167.9	40	199.5	50	254.1

EPCS (ENHANCED PAGING & CODE SQUELCH)

Activating the Enhanced Paging & Code Squelch System

1. Press the **[F/W]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 43: **PAGER**.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to select "ON."
5. Press the **PTT** switch to save the new setting and activate the Enhanced Paging & Code Squelch.
6. To disable the Enhanced Paging & Code Squelch, just repeat the above procedure, rotating the **DIAL** knob to select "OFF" in step 4 above.

43
PAGER

SEE
ON

When the Enhanced Paging & Code Squelch feature is activated, appear "P" notation at the 100 MHz digit of the frequency display.

193
P32850



During Enhanced Paging & Code Squelch operation, you may set up the VX-6R such that a ringing "bell" sound alerts you to the fact that a call is coming in, as described previously. See page ?? for details.

Paging Answer Back

When you press the **PTT** switch to respond to a page call, the **VX-6R** transmits the same CTCSS tone pair. This tone pair will open the Code Squelch of the calling station. If you prefer, you can have the **VX-6R** respond to page calls automatically ("transpond").

To enable this feature:

1. Press the **[F/W]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 44: **PAG.ABK**.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to select "ON."
5. Press the **PTT** switch to save the new setting and exit to normal operation.

44
PAG.ABK

SEE
ON



The Paging Answer Back feature constitutes a form of "remote control" operation that may be restricted to certain frequencies. U.S. users should confirm the current status of §97.201(b) of the FCC's rules governing the Amateur service before utilizing this feature on the 144 MHz band.

EMERGENCY FEATURE

EMERGENCY CHANNEL OPERATION

The **VX-6R** includes an "Emergency" feature which may be useful if you have someone monitoring on the same frequency as your transceiver's UHF "Home" channel. See page ?? for details on setting the Home channel.

The "Emergency" feature is activated by pressing and holding in the **[HM/RV(EMG)R/H]** key for one second. When this is done, (A) the radio is placed on the UHF amateur band Home channel, (B) it emits a loud "Alarm" sound (the volume is controlled by the **VOL** knob), (C) it flashes the **TX/BUSY** indicator in white, (D) if you press the **PTT** switch, you will disable the Emergency feature temporarily; you can then transmit on the UHF Home channel, and (E) two seconds after the **PTT** release, the Emergency feature will resume.

To disable the "Emergency" feature, pressing and holding in the **[HM/RV(EMG)R/H]** key for one second or turn the radio off by pressing the **POWER** switch.

Use this feature if you are out for a walk and want a quick way of alerting a family member as to a dangerous situation. The alarm sound may discourage an attacker and allow you to escape.



- 1) *Be sure to arrange with a friend or family member to be monitoring on the same frequency, as there will be no identification sent via the Emergency alarm sound. And do not transmit the alarm tone except in a true emergency!*
- 2) *The "Emergency" feature may be changed to another function via Set Mode Item 26: EMG S; see page ?? for details.*

EMERGENCY FEATURE

EMERGENCY AUTOMATIC ID (EAI) FEATURE

The Emergency Automatic ID (EAI) feature can be used for searching for persons who are incapacitated in disasters like earthquakes, especially search-and-rescue personnel who may have become injured in a debris field. In such cases, if another searcher sends out a unique command (CTCSS tone pair), the radio of the incapacitated party, who may not be able to speak or even press the **PTT** switch, will automatically cause the injured party's radio to transmit, so others may perform direction-finding and effect a rescue. The callsign of the incapacitated person will also be transmitted, to assist the rescue team.

If an emergency group is working in a dangerous area, all members should engage the EAI feature on their transceiver, so that others can provide assistance to a fallen team member, if necessary.

The Emergency Automatic ID (EAI) Feature has two operating modes: (1) Interval mode and (2) Continuous mode.

In the Interval mode, when the **VX-6R** receives the CTCSS tone pair which is stored in the Receiving Pager Code Memory (configured via Set Mode Item 45: PAG.CDR) on the frequency which is stored in Memory Channel "EAI" for more than five seconds, the radio will automatically transmit a brief (0.5 second) beep tone every 2.5 seconds until the EAI timer expiration at the power level stored in that memory channel; it is NOT necessary for the incapacitated person to press the **PTT** switch.

In the Continuous mode, when the **VX-6R** receives the CTCSS tone pair which is stored in the Receiving Pager Code Memory (configured via Set Mode Item 45: PAG.CDR) on the frequency which is stored in Memory Channel "EAI" for more than five seconds, the radio will automatically transmit (with maximum microphone gain) *continuously*, until the EAI timer expiration, at the power level stored in that memory channel; it is NOT necessary for the incapacitated person to press the **PTT** switch.

Furthermore, if your call sign is stored in the radio and enabling the CW identifier via Set Mode Item 14: CW ID, the radio will transmit your callsign on the air when the EAI feature is first engaged by the remote page, and every 10 minutes thereafter. The "callsign" ID can be changed to any desired sequence of characters, such as a name. After sending the callsign or name, the radio will repeatedly transmit three tones for a user-defined period of time (between 1 and 30 minutes). The callsign or name will be transmitted every 10 minutes.

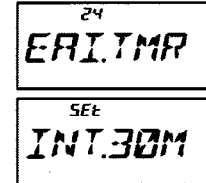
The Emergency Automatic ID (EAI) Feature requires that you (1) store the CTCSS Tone Pair into the Receiving Pager Memory (see page ?? for procedure), and (2) store the desired *UHF coordination frequency* into Memory Channel "EAI" (see page ?? for procedure).

EMERGENCY FEATURE

EMERGENCY AUTOMATIC ID (EAI) FEATURE

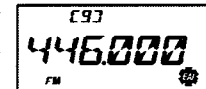
Selecting the EAI mode and its Transmit Time

1. Press the **[F/W]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 24: EAI.TMR.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to select the desired EAI mode (Interval EAI "INT" or Continuous EAI "CON") and its transmit time (1-10, 15, 20, 30, 40, and 50 minutes).
5. Press the **PTT** switch to save the new setting and exit to normal operation.



Activating the EAI feature

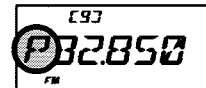
1. Press the **[F/W]** key, then press the **[8(EAI)]** key to activate the EAI feature. When the EAI feature is activated, the "E" icon will appear at the bottom right on the LCD.
2. To disable the EAI feature, just repeat above procedure, press the **[F/W]** key, followed by the **[8(EAI)]** key.



The VX-6R will ignore the EAI feature when the (1) the squelch is open, (2) there is an incoming the signal on the operating frequency, (3) the operating frequency is the same as the frequency which is stored in the Memory Channel "000," or (4) a VHF frequency is stored in Memory Channel "EAI."

To find out the persons who are activating the EAI feature

1. Tune the radio to the frequency which is the same frequency stored in the Memory Channel "000" of the *searched parson's radio*.
2. Store the CTCSS tone pair which is the same CTCSS tone pair stored in the Receiving Pager Code Memory of the *searched parson's radio* into your Transmitting Pager Memory (configured via Set Mode Item 46: PAG.CDT).
3. Activates the EPCS (Enhanced Paging & Code Squelch) feature by pressing the **[F/W]** key, followed by the **[7(PAGER)]** key for transmitting the Pager Code (CTCSS tone pair).
4. Press and hold in the **PTT** switch for five seconds to find out the persons who are activating the EAI feature.



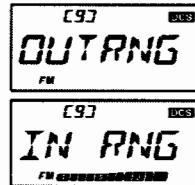
ARTS™ (AUTOMATIC RANGE TRANSPONDER SYSTEM)

The ARTS™ feature uses DCS signaling to inform both parties when you and another ARTS™-equipped station are within communications range. This may be particularly useful during Search-and-Rescue situations, where it is important to stay in contact with other members of your group.

Both stations must set up their DCS codes to the same code number, then activate their ARTS™ feature using the command appropriate for their radio. Alert ringers may be activated, if desired.

Whenever you push the **PTT**, or every 25 (or 15) seconds after ARTS™ is activated, your radio will transmit a signal which includes a (subaudible) DCS signal for about 1 second. If the other radio is in range, the beeper will sound (if enabled) and the display will show "IN RNG" as opposed to the out of range display "OUTRNG" in which ARTS™ operation begins.

Whether you talk or not, the polling every 15 or 25 seconds will continue until you de-activate ARTS™. Every 10 minutes, moreover, you can have your radio transmit your callsign via CW, so as to comply with identification requirements. When ARTS™ is de-activated, DCS will also be deactivated (if you were not using it previously in non-ARTS™ operation).

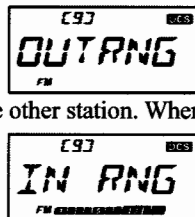


If you move out of range for more than one minute (four pollings), your radio will sense that no signal has been received, three beeps will sound, and the display will revert to "OUTRNG." If you move back into range, your radio will again beep, and the display will change back to the "IN RNG" indication.

During ARTS™ operation, it is not possible to change the operating frequency or other settings; you must terminate ARTS™ in order to resume normal operation. This is a safety feature designed to prevent accidental loss of contact due to channel change, etc.

Basic ARTS™ Setup and Operation

1. Set your radio and the other radio(s) to the same DCS code number, per the discussion on page ??.
2. Press the **[FW]** key, then press the **[4(ARTS)]** key. You will observe the "OUTRNG" display on the LCD below the operating frequency. ARTS™ operation has now commenced.
3. Every 25 seconds, your radio will transmit a "polling" call to the other station. When that station responds with its own ARTS™ polling signal, the display will change to "IN RNG" to confirm that the other station's polling code was received in response to yours.
4. Press the **[FW]** key momentarily to exit ARTS™ operation and resume normal functioning of the transceiver.



ARTS™ (AUTOMATIC RANGE TRANSPONDER SYSTEM)

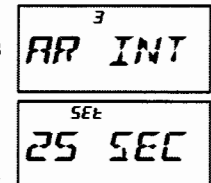


ARTS™ constitutes a form of "remote control" operation that may be restricted to certain frequencies. U.S. users should confirm the current status of §97.201(b) of the FCC's rules governing the Amateur service before utilizing this feature on the 144 MHz band.

ARTS™ Polling Time Options

The ARTS™ feature may be programmed to poll every 25 seconds (default value) or 15 seconds. The default value provides maximum battery conservation, because the polling signal is sent out less frequently. To change the polling interval:

1. Press the **[FW]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 3: AR INT.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to select the desired polling interval (15 or 25 seconds).
5. When you have made your selection, press the **PTT** switch to save the new setting and exit to normal operation.



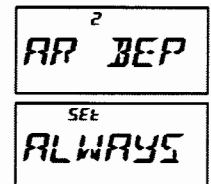
ARTS™ Alert Beep Options

The ARTS™ feature allows two kinds of alert beeps (with the additional option of turning them off), so as to alert you to the current status of ARTS™ operation. Depending on your location and the potential annoyance associated with frequent beeps, you may choose the Beep mode which best suits your needs. The choices are:

- INRANG: The beeps are issued only when the radio first confirms that you are within range, but does not re-confirm with beeps thereafter.
- ALWAYS: Every time a polling transmission is received from the other station, the alert beeps will be heard.
- OFF: No alert beeps will be heard; you must look at the display to confirm current ARTS™ status.

To set the ARTS™ Beep mode, use the following procedure:

1. Press the **[FW]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 2: AR BEP.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to select the desired ARTS™ Beep mode (see above).
5. When you have made your selection, press the **PTT** switch to save the new setting and exit to normal operation.



ARTS™ (AUTOMATIC RANGE TRANSPONDER SYSTEM)

CW Identifier Setup

The ARTS™ feature includes a CW identifier, as discussed previously. Every ten minutes during ARTS™ operation, the radio can be instructed to send “DE (your callsign) K” if this feature is enabled. The callsign field may contain up to 6 characters.

Here’s how to program the CW Identifier:

1. Press the **[F/W]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 14: CW ID.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to set this Item to “ON” (to enable the CW ID function).
5. Press the **[V/M(DW)MT]** key momentarily to display the previously stored callsign.
6. Press the **[HM/RV(EMG)R/H]** key momentarily to *clear* any previous callsign.
7. Rotate the **DIAL** knob to select the first letter/number of your callsign, then press the **[V/M(DW)MT]** key momentarily to save the first letter/number and move on to the next character.
8. Repeat the previous step, as many times as necessary, to complete your callsign. Note that the “slant bar” (— • • — •) is among the available characters, should you be a “portable” station.
9. If you mistake, press the **[BAND(SCN)BND DN]** key to back-space the cursor, then re-enter the correct letter/number.
10. Press the **[HM/RV(EMG)R/H]** key to delete all data after the cursor that may have been previously stored erroneously.
11. When you have entered your entire callsign, press the **[0(SET)]** key momentarily to confirm the callsign, then press the **PTT** key to save the settings and exit to normal operation.

14
CW ID

SEt
ON

1
W

5
W6JXR



*You may check your work by monitoring the entered callsign. To do this, repeat steps 1- 7 above, then press the **[F/W]** key.*

SENSOR MODE

The **VX-6R** can display the Temperature provided by internal sensors. Also, when the optional Barometric Pressure unit (**SU-1**) is installed, you get the unique capability of providing readout of the current barometric pressure. This information is then used for calculation of your current altitude.

The Barometric Pressure unit requires calibration of the “offset” parameters, so that differences in pressure can be used to calculate altitude. This procedure requires that you have a calculated barometer, and that you know your current altitude. If you are at sea level, of course, the latter parameter requires no research.

To display the sensor information:

1. Press the **[F/W]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 64: SU1.SET.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.

64
SU1SET

4. Rotate the **DIAL** knob to select the sensor mode you wish to display.

TEMP: Indicates the current temperature inside the transceiver’s case.

BARO: Indicates the Barometric Pressure (requires **SU-1**).

ALTI: Indicates the Altitude (requires **SU-1**).

OFF: Disable the sensor information.

5. Press the **PTT** switch to save the new setting and display the sensor information every five seconds on the display.
7. To disable the display of sensor information, repeat the above procedure, rotating the **DIAL** knob to select “OFF” in step 4 above.

SEt
TEMP

SEt
BARO

SEt
ALTI

SEt
OFF

97
77.0F

TEMPERATURE

97
1016MB

BAROMETRIC PRESSURE

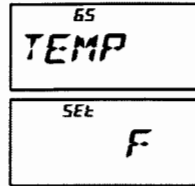
97
26FL

ALTITUDE

SENSOR MODE

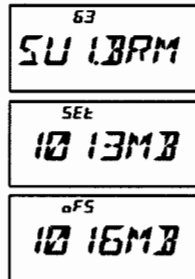
Selecting the Unit of Temperature Display

1. Press the [F/W] key, then press the [0(SET)] key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 65: TEMP.
3. Press the [0(SET)] key momentarily to enable adjustment of this Set Mode Item.
4. Press the [MODE(SP S)SQ TYP] key to select the preferred unit (F (°F) or C (°C)).
5. Press the **PTT** switch to save the new setting and exit to normal operation.



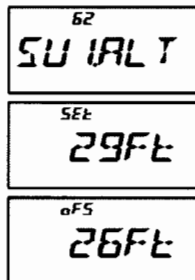
Selecting and Correcting the Atmospheric Pressure Meter

1. Press the [F/W] key, then press the [0(SET)] key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 64: SU1.BRM.
3. Press the [0(SET)] key momentarily to enable adjustment of this Set Mode Item.
4. Press the [MODE(SP S)SQ TYP] key to select the preferred unit (HP (hpa), MB (mbar), HG (mmHg), or IC (inch)).
5. Press the [F/W] key momentarily to enable correcting the Atmospheric Pressure Meter.
6. Rotate the **DIAL** knob to adjust the **VX-6R** display to the calibrated barometer.
7. Press the **PTT** switch to save the new setting and exit to normal operation.



Selecting and Correcting the Altimeter

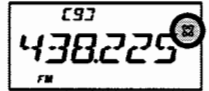
1. Press the [F/W] key, then press the [0(SET)] key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 62: SU1.ALT.
3. Press the [0(SET)] key momentarily to enable adjustment of this Set Mode Item.
4. Press the [MODE(SP S)SQ TYP] key to select the preferred unit (M, or Ft).
5. Press the [F/W] key momentarily to enable correcting the Altimeter.
6. Rotate the **DIAL** knob to adjust the **VX-6R** display to the true altitude at your current location.
7. Press the **PTT** switch to save the new setting and exit to normal operation.



INTERNET CONNECTION FEATURE

The **VX-6R** can be used to access a “node” (repeater or base station) which is tied into the Vertex Standard WIREST™ (Wide-Coverage Internet Repeater Enhancement System) network, operating in the “SRG” (Sister Radio Group) mode. Details may be found at the WIREST-II Web site: <http://www.vxstd.com/en/wiresinfo-en/>. This feature may also be used to access other systems, as described below.

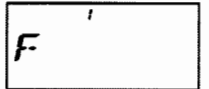
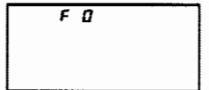
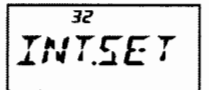
1. Press the [⌘(LK)TXPO] key momentarily to activate the Internet Connection feature. The “⌘” icon will appear in the upper right corner of the display.
2. Rotate the **DIAL** knob while pressing the [0(SET)] key to select the access number (DTMF “0” ~ “9,” “A,” “B,” “C,” “D,” “E (*),” “F (#),”) corresponding to the WIREST™ node to which you wish to establish an Internet link (ask the node or repeater owner/operator if you don’t know the access number in the network). Now press the **PTT** switch to exit from the selection mode.
3. With the Internet Connection feature activated (as in step 1 above), the **VX-6R** will generate a brief (0.1 second) DTMF tone according to your selection in step 2. This DTMF tone is sent at the beginning of every transmission to establish or maintain the link to the local WIREST™ node operating in the SRG mode.
4. To disable the Internet Connection feature, press the [⌘(LK)TXPO] key momentarily (the “⌘” icon will disappear from the display).



If other users report that you always have a DTMF “beep” at the beginning of each transmission, and you are not operating in conjunction with Internet access, disable this function via step (4) above.

You may access other Internet Link Systems (including WIREST™ in the “FRG” mode) that use a DTMF string for access.

1. Load the DTMF tones which you wish to use for Internet-link access into a Internet Memory register. For purposes of this example, we will use “#(F)11101D” as the access code.
 - A. Press the [F/W] key, then press the [0(SET)] key to enter the Set mode.
 - B. Rotate the **DIAL** knob to select Set Mode Item 32: INT.SET.
 - C. Press the [0(SET)] key to enable adjustment of this Set Mode Item.
 - D. Rotate the **DIAL** knob to select the Internet Memory register (F 0 ~ FB3) into which you wish to store the access code.
 - E. Press the [MODE(SP S)SQ TYP] key momentarily. The first digit will blink.
 - F. Rotate the **DIAL** knob to select “F” (representing DTMF “#”: the first digit of the DTMF string).
 - G. Press the [MODE(SP S)SQ TYP] key momentarily to accept the first digit and



INTERNET CONNECTION FEATURE

move to the second digit of the DTMF string.

- H. Repeat the previous steps until you have completed the access code (“#(F)11101D”).
- I. If you attach an alpha/numeric name “Tag” to the Internet Memory, proceed to the next step; otherwise press and hold in the [0(SET)] key for one second to save the setting.
- J. Press the [V/M(DW)MT] key momentarily to enable programming of the name tag.
- k. Rotate the **DIAL** knob to select the first digit of the desired label.
- l. Press the [MODE(SP S)SQ TYP] key to move to the next character.
- m. If you make a mistake, press the [BAND(SCN)BND DN] key to back-space the cursor, then re-enter the correct letter, number, or symbol.
- n. Repeat steps k through m to program the remaining letters, numbers, or symbols of the desired label. A total of six characters may be used in the creation of a label.
- o. When you have programmed a label which is under 6 characters, press the [0(SET)] key to confirm the label.
2. Press the **PTT** switch to save the setting and exit to normal operation.
3. Press the [FW] key, then press the [0(SET)] key to enter the Set mode again.
4. Rotate the **DIAL** knob to select Set Mode Item 30: INT MD.
5. Press the [0(SET)] key to enable adjustment of this Set Mode Item.
6. Rotate the **DIAL** knob to set this Set Mode Item to “FRG” (thus activating the “Other Internet Link System” mode).
7. Press the **PTT** switch to save the new settings.
8. Press the [8(LK)TXPO] key momentarily to activate the Internet Connection feature. The “8” icon will appear in the upper right corner of the display.
9. Rotate the **DIAL** knob while pressing the [0(SET)] key to select the Internet Memory register number (F 0 ~ F63) corresponding to the Internet link repeater to which you wish to establish an Internet link, then press the **PTT** switch momentarily to lock in the selected access number.
10. Once the Internet Connection feature is activated per step 8 above, you may now press the [0(SET)] key, while you are transmitting, to send out the selected DTMF string (to establish the link to the desired Internet-link mode).
11. To return to the WIRESTTM mode, repeat steps 3 - 6 above, selecting “SRG” in step 6.

6
F 1 1 0 1 D

1
W

6
W 6 D X C

30
INT MD

SEt
FRG

8
438225

F 0
F 123

1
DTMF 1

DTMF OPERATION

The **VX-6R**'s 16-button keypad allows easy DTMF dialing for Autopatch, repeater control, or Internet-link access purposes. Besides numerical digits [0] through [9], the keypad includes the [*] and [#] digits, plus the [A], [B], [C], and [D] tones often used for repeater control.

Manual DTMF Tone Generation

You can generate DTMF tones during transmission manually.

1. Press the [FW] key, followed by the [3(DTMF)] key, then rotate the **DIAL** knob to select “MANUAL.”
2. Press the [3(DTMF)] key to save the new setting and exit to normal operation.
3. Press the **PTT** switch to begin transmission.
4. While transmitting, press the desired numbers on the keypad.
5. When you have sent all the digits desired, release the **PTT** switch.

MANUAL

DTMF Autodialer

Nine DTMF Autodial memories are provided, allowing you to store telephone numbers for autopatch use. You can also store short autopatch or Internet-link access code streams so as to avoid having to send them manually.

Here is the DTMF Autodial storage procedure:

1. Press the [FW] key, then press the [0(SET)] key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 22: DT SET.
3. Press the [0(SET)] key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to select the DTMF Memory register into which you wish to store this DTMF string.
5. Press the [MODE(SP S)SQ TYP] key momentarily to begin DTMF Memory entry into the selected register.
6. Rotate the **DIAL** knob to select the first digit of the DTMF string. Selectable entries are 0 - 9, and A - F, with E and F representing DTMF “*” and “#” tones respectively.
7. Press the [MODE(SP S)SQ TYP] key to accept the first digit and move to the next digit of the DTMF string.
8. Repeat steps 5 and 6 until you have completed the telephone number.
9. If you make a mistake, press the [BAND(SCN)BND DN] key to move back to the previous digit, then re-select the correct number.
10. Press the [HM/RV(EMG)/R/H] key to delete all data after the cursor that may have been previously stored erroneously.
11. Press and hold in the [0(SET)] key for one second to save the setting.

22
DT SET

CH 1

1
0

11
97111

DTMF OPERATION

12. If you store other numbers, repeat steps 3- 11 above, using a different DTMF memory register.
13. When all required DTMF memories are filled to your satisfaction, press the **PTT** switch to save the settings and exit to normal operation



You may check your work by monitoring the entered DTMF string. To do this, repeat steps 1- 4 above, then press the [F/W] key.

To send the telephone number:

1. Press the **[F/W]** key, followed by the **[3(DTMF)]** key, then rotate the **DIAL** knob to select "AUTO."
2. Press the **[3(DTMF)]** key to save the new setting and exit to normal operation.
3. While the DTMF Autodialer is activated, first press the **PTT** switch, then press the numerical key ([1] through [9]) corresponding to the DTMF memory string you wish to send. Once the string begins, you may release the **PTT** switch, as the transmitter will be held "on the air" until the DTMF string is completed.
4. To disable the DTMF Autodialer, press the **[F/W]** key, followed by the **[3(DTMF)]** key, then rotate the **DIAL** knob to select "MANUAL."

AUTO

CW TRAINING FEATURE

The **VX-6R** provides a CW Training feature, which sends random Morse Code via the sidetone (heard in the speaker), so you can improve your CW proficiency.

1. Press the **[F/W]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 15: CWTRNG.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Press the **[MODE(SP S)SQ TYP]** key to select the Trainig mode:

15
CWTRNG

A: Send five Alphabet characters only

A_r: Send Alphabet characters only (Repeatedly)

n: Send five Numeric characters only

n_r: Send Numeric characters only (Repeatedly)

An: Send five Alphabet, Numeric, "?," and "/" characters (Mixed)

Anr: Send Alphabet, Numeric, "?," and "/" characters (Mixed & Repeatedly)

5. Rotate the **DIAL** knob to select the Morse speed.
6. Press the **[BAND(SCN)BND DN]** key to select the
7. Press the **[F/W]** key to begin generation of the character code (CW sidetone only, does not transmit) and "Answer" will appear on the display. If the is set to "Enabled," the **TX/BUSY** indicator flashes in white accordance with the Morse Code.
8. To disable the CW Training feature, press the **[F/W]** key again.
9. Press the **PTT** switch to exit to normal operation.

Trainig mode Morse Speed

Anr
24WPM

TX/BUSY Indicator Status

MISCELLANEOUS SETTINGS

PASSWORD

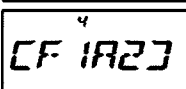
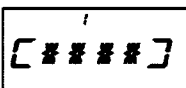
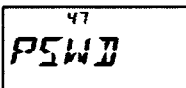
The **VX-6R** provides the password feature which can minimize the chance that your transceiver could be used by an unauthorized party.

When the password feature is activated, the radio will ask for the four digit password to be entered when the radio is first turned on. You must enter the four digit password from the keypad. If the wrong password is entered, the microprocessor will shut down the radio automatically.



To enter the password and activating this feature, use the following procedure:

1. Press the **[F/W]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 47: PSWD.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Press the **[MODE(SP S)SQ TYP]** key momentarily to display any previously-stored password.
6. Rotate the **DIAL** knob to select the first digit of the desired number/letter (0-9, A, B, C, D, E (substitute for “*”), and F (substitute for “#”).
7. Press the **[MODE(SP S)SQ TYP]** key to move to the next digit.
8. Repeat steps 5 and 6 to program the remaining numbers/letters of the desired password.
9. If you make a mistake, press the **[BAND(SCN)BND DN]** key to move back to the previous digit, then re-select the correct number/letter.
10. When you have finished entering the password, press the **PTT** switch to save the new setting and exit to normal operation.
11. If you wish to disable the Password feature, repeat steps 1 - 4 above, rotating the **DIAL** knob to select “OFF” in step 4 above, then press the **PTT** switch.



- 1) We recommend that you to write down the password number, and keep it in a safe place you can easily find if you forget your password.
- 2) If you forget the password number, you may turn on the transceiver by performing the “All Reset” procedure (see page ??). However, the **VX-6R** will clear the password, as well as all memories, and will restore all other settings to factory defaults.

MISCELLANEOUS SETTINGS

PROGRAMMING THE KEY ASSIGNMENTS

The **VX-6R** can be assigned the Set Mode Item to the second function (**[F/W]** + key) of the **[P(DMR)]** key.

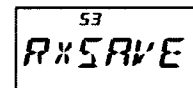
To assign the Set Mode Item in to the **[P(DMR)]** key:

1. Press the **[F/W]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select the Set Mode Item which you wish to assign to the key as a Menu short-cut.
3. Press and hold in the **[P(DMR)]** key for one second to assign the Set Mode Item to the **[P(DMR)]** key.

RECEIVE BATTERY SAVER SETUP

An important feature of the **VX-6R** is its Receive Battery Saver, which “puts the radio to sleep” for a time interval, periodically “waking it up” to check for activity. If somebody is talking on the channel, the **VX-6R** will remain in the “active” mode, then resume its “sleep” cycles. This feature significantly reduces quiescent battery drain, and you may change the amount of “sleep” time between activity checks using the Set Mode:

1. Press the **[F/W]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 53: RXSAVE.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to select the desired “sleep” duration. The available selections are 200 ms, 300 ms, 500 ms, 1 second, 2 seconds, or OFF. The default value is 200 ms.
5. When you have made your selection, press the **PTT** switch to save the new setting and exit to normal operation.



When you are operating on Packet, switch the Receive Battery Saver OFF, as the sleep cycle may “collide” with the beginning of an incoming Packet transmission, causing your TNC not to receive the full data burst.

Miscellaneous Settings

WAKEUP FEATURE SETUP

The Wakeup feature is similarly to the Receive Battery Saver. However, it is a newer, more advanced feature which is more saved the battery life by providing the long "sleeping" term and

To setup the Wakeup feature:

1. Press the **[FW]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 72: WAKEUP.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.

72
WAKEUP

4. Rotate the **DIAL** knob to select the desired "sleep" duration.
5SEC/10SEC/20SEC/30SEC:

5SEC
5SEC

Check a frequency which it was in when the radio was turned off for activity every selected time, If a radio is received on the frequency which is strong enough to open the Squelch, the radio will turn to on. If the EAI feature is activated when the radio was turned off, the radio also checks on an EAI frequency (Memory Channel "000") for activity.

EAI:

Check an EAI frequency (Memory Channel "000") every 5 seconds, If a station is received EAI signal, the radio will turn to on and then automatically transmit accordance with the setting of Set Mode Item 18: EAI.

OFF:

Disable the Wakeup feature.

5. When you have made your selection, press the **PTT** switch to save the new setting and exit to normal operation.
6. If you wish to disable the Wakeup feature, just repeat the above procedure, rotating the **DIAL** knob to select "OFF" in step 4 above.

When the radio turns off, activates the Wakeup feature and indicates "WAKEUP" notation on the display.

WAKEUP

MISCELLANEOUS SETTINGS

TX BATTERY SAVER

The **VX-6R** also includes a useful Transmit Battery Saver, which will automatically lower the power output level when the last signal received was very strong. For example, when you are in the immediate vicinity of a repeater station, there generally is no reason to use the High Power output in order to achieve full-quieting access to the repeater. With the Transmit Battery Saver, the automatic selection of Low Power operation conserves battery drain significantly.

To activate the Transmit Battery Saver:

1. Press the **[FW]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 70: TXSAVE.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to set this Set Mode Item to "ON" (thus activating the Transmit Battery Saver).
5. When you have made your selection, press the **PTT** switch to save the new setting and exit to normal operation.

70
TXSAVE

5SEC
ON

ATT (FRONT END ATTENUATOR)

The attenuator will reduce all signals (and noise) by 10 dB, and it may be used to make reception more pleasant under extremely crowded conditions.

1. Press the **[FW]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 5: ATT.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to set this Set Mode Item to "ON" (thus activating the attenuator).
5. When you have made your selection, press the **PTT** switch to save the new setting and exit to normal operation.
6. If you wish to disable the attenuator, just repeat the above procedure, rotating the **DIAL** knob to select "OFF" in step "4" above.

5
ATT

5SEC
ON



When the attenuator is activated, the Operating Mode icon (AM, FM, or WFM) will blink on the display.

MISCELLANEOUS SETTINGS

DISABLING THE TX/BUSY INDICATOR

Further battery conservation may be accomplished by disabling the **BUSY** indicator while receiving a signal. Use the following procedure:

1. Press the **[FW]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 11: BSY.LED.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to set this Set Mode Item to "OFF" (thus disabling the **BUSY** indicator).
5. When you have made your selection, press the **PTT** switch to save the new setting and exit to normal operation.
6. If you wish to re-enable the **BUSY** Indicator, just repeat the above procedure, rotating the **DIAL** knob to select "ON" in step 4 above.

AUTOMATIC POWER-OFF (APO) FEATURE

The APO feature helps conserve battery life by automatically turning the radio off after a user-defined period of time within which there has been no dial or key activity. The available selections for the time before power-off are 0.5/1/3/5/8 hours, as well as APO Off. The default condition for the APO is OFF, and here is the procedure for activating it:

1. Press the **[FW]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 1: APO.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to select the desired time period after which the radio will automatically shut down.
5. When you have made your selection, press the **PTT** switch to save the new setting and exit to normal operation.

When the APO is activated, the "⏻" icon will appear at the upper right corner on the LCD. If there is no action by you within the time interval programmed, the microprocessor will shut down the radio automatically.

Press and hold in the **PWR** switch for one second, to turn the radio back on after an APO shutdown, as usual.

MISCELLANEOUS SETTINGS

AUTOMATIC POWER-ON FEATURE

The **VX-6R** also includes the capability to turn itself *on* after a programmed time interval.

1. Press the **[FW]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 41: ON TMR.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to set the desired time period after which the radio will automatically turn on.
Note that this is not the time of day when the radio will turn on; it is the number of hours and minutes until the radio turns on.
5. When you have made your selection, press the **PTT** switch to save the new setting and exit to normal operation.

When the radio turns off, activates the Automatic Power-On feature and indicates the count-down timer in the display.

Press and hold in the **PWR** switch for one second to cancel the Automatic Power-On feature (turn off the radio) while the Automatic Power-On feature is activating.



The Automatic Power-On feature will be ignored when the Wakeup feature is activated.

BUSY CHANNEL LOCK-OUT (BCLO)

The BCLO feature prevents the radio's transmitter from being activated if a signal strong enough to break through the "noise" squelch is present. On a frequency where stations using different CTCSS or DCS codes may be active, BCLO prevents you from disrupting their communications accidentally (because your radio may be muted by its own Tone Decoder). The default setting for the BCLO is OFF, and here is how to change that setting:

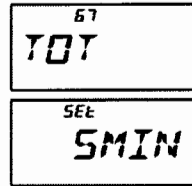
1. Press the **[FW]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 6: BCLO.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to set this Set Mode Item to "ON" (thus activating the BCLO feature).
5. When you have made your selection, press the **PTT** switch to save the new setting and exit to normal operation.

MISCELLANEOUS SETTINGS

TRANSMITTER TIME-OUT TIMER (TOT)

The TOT feature provides a safety switch which limits transmission time to a pre-programmed value. This will promote battery conservation by not allowing you to make excessively-long transmissions, and in the event of a stuck **PTT** switch (perhaps if the radio or a Speaker/Mic is wedged between car seats) it can prevent interference to other users as well as battery depletion. As configured at the factory the TOT feature is set to 3 minutes, and here is the procedure for activating it:

1. Press the **[F/W]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 67: TOT.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to set the Time-Out Timer to the desired "Maximum TX" time (2.5/5/10 minutes), or OFF.
5. When you have made your selection, press the **PTT** switch to save the new setting and exit to normal operation.

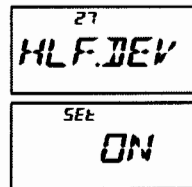


- 1) When your transmission time is within 10 seconds of the Time-Out Timer expiration, an Alert bell will provide an audible warning from the speaker.
- 2) Since brief transmissions are the mark of a good operator, try setting up your radio's TOT feature for a maximum transmission time of one minute. This will significantly improve battery life, too!

CHANGING THE TX DEVIATION LEVEL

In many areas of the world, channel congestion has required that operating channels be closely spaced. In such operating environments, it often is required that operators use reduced deviation levels, so as to reduce the potential for interference to users on adjacent channels. The **VX-6R** includes a simple method of accomplishing this:

1. Press the **[F/W]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 27: HLF.DEV.
3. Press the **[0(SET)]** key momentarily to enable adjustment of this Set Mode Item.
4. Rotate the **DIAL** knob to set this Set Mode Item to "ON." In this configuration (HALF DEVIATION active), the transmitter's deviation will be approximately ± 2.5 kHz, and the received audio output level will be increased, for easier listening on the narrow signal.
5. When you have made your selection, press the **PTT** switch to save the new setting and exit to normal operation.



- The "normal" setting for the deviation (when this Set Mode Item is set to "OFF") is ± 5 kHz.

MISCELLANEOUS SETTINGS

DCS CODE INVERSION

The DCS system was first introduced in the commercial LMR (Land Mobile Radio) service, where it is now in widespread use. DCS is sometime referred to by its different proprietary names, such as DPL® (Digital Private Line®, a registered trademark of Motorola, Inc.).

DCS uses a codeword consisting of a 23-bit frame, transmitted (subaudible) at a data rate of 134.4 bps (bit/sec). Occasionally, signal inversion can result in the complement of a code to be sent or received. This prevents the receiver's squelch from opening with DCS enabled, as the decoded bit sequence would not match that selected for operation.

Typical situations that might cause inversion to occur are:

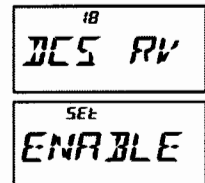
- ☐ Connection of an external receiver preamplifier.
- ☐ Operating through a repeater.
- ☐ Connection of an external linear amplifier.

Note that code inversion does not mean that any of the above listed equipment is defective!

In certain amplifier configurations, the output signal (phase) is inverted from the input. Small signal or power amplifiers having an odd number (1, 3, 5, etc.) of amplification stages may result in inversion of a transmitted or received DCS code.

While under most circumstances this should not occur (amplifier designs and industry standards take this into account), if you find that your receiver squelch does not open when both you and the other station are using a common DCS code, you or the other station (but not both) can try the following:

1. Press the **[F/W]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select Set Mode Item 18: DCS RV.
3. Press the **[0(SET)]** key momentarily, then rotate the **DIAL** knob to set this Set Mode Item to "ENABLE" (thus DCS Code is inverted).
4. When you have made your selection, press the **PTT** switch to save the new setting and exit to normal operation.
5. Remember to restore the default setting to "DISABLE" when done.



RESET PROCEDURES

In the event of erratic operation of the transceiver, it is possible that data on the microprocessor may have become corrupted. While this is a highly unusual situation, the only path to recovery may involve resetting of the microprocessor. Here's how to do this:

MICROPROCESSOR RESETTING

To clear all memories and other settings to factory defaults:

1. Turn the radio off.
2. Press and hold in the **[MODE(SP S)SQ TYP]**, **[0(SET)]**, and **[V/M(DW)MT]** keys while turning the radio on.
3. Press the **[F/W]** key momentarily to reset all settings to their factory defaults (press any other key to cancel the Reset procedure).

SET MODE RESETING

To reset the Set Mode Item settings to their factory defaults:

1. Turn the radio off.
2. Press and hold in the **[MODE(SP S)SQ TYP]** and **[V/M(DW)MT]** keys while turning the radio on.
3. Press the **[F/W]** key momentarily to reset the Set (Menu) mode settings to their factory defaults (press any other key to cancel the Reset procedure).

CLONING

The **VX-6R** includes a convenient "Clone" feature, which allows the memory and configuration data from one transceiver to be transferred to another **VX-6R**. This can be particularly useful when configuring a number of transceivers for a public service operation. Here is the procedure for Cloning one radio's data to another:

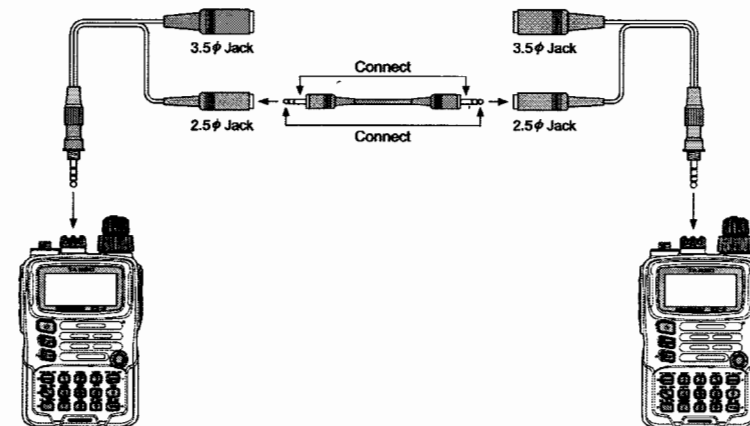
1. Turn both radios off.
2. Connect the user-constructed cloning cable and two optional **CT-91** Microphone Adapters (one on each end) between the **MIC/SP** jacks of the two radios.
3. Press and hold in the **[F/W]** key while turning the radios on. Do this for both radios (the order of switch-on does not matter). The "CLONE" notation will appear on the displays of both radios.
6. On the **Destination** radio, press the **[V/M(DW)MT]** key ("--WAIT--" will appear on the LCD).
7. Press the **[BAND(SCN)BND DN]** key on the **Source** radio; "--TX--" will appear on the Source radio, and the data from this radio will be transferred to the other radio.
8. If there is a problem during the cloning process, "ERROR" will be displayed. Check your cable connections and battery voltage, and try again.
9. If the data transfer is successful, "CLONE" will reappear on the **Source** radio and the **Destination** radio will return to the normal operation. Turn both radios off and disconnect the cloning cable. You can then turn the **Source** radio back on, and begin normal operation.

CLONE

--WAIT--

--TX--

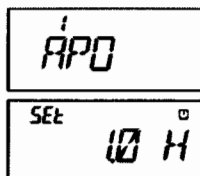
ERROR



SET (MENU) MODE

The **VX-6R** Set Mode, already described in parts of many previous chapters, is easy to activate and set. It may be used for configuration of a wide variety of transceiver parameters, some of which have not been detailed previously. Use the following procedure to activate the Set Mode:

1. Press the **[FW]** key, then press the **[0(SET)]** key to enter the Set mode.
2. Rotate the **DIAL** knob to select the Set Mode Item to be adjusted.
3. Press the **[0(SET)]** key momentarily to enable adjustment of the Set Mode Item.
4. Rotate the **DIAL** knob to adjust or select the parameter to be changed on the Set Mode Item selected in above step.
5. After completing your selection and adjustment, press the **PTT** switch momentarily to save the new setting and exit to normal operation.



1) Some Set Mode Items (like Set Mode Item 50: **TN FRQ**) require that the **[0(SET)]** key be pressed after setting of the parameter, and before exiting to normal operation.

2) Two Set Mode Item numbers (In the factory default, Set Mode Item 29: **PAGER**, and 46: **SKIP**) will blink while selecting the Set Mode Item; this indicates that this Set Mode Item has been assigned to the **[7(P1)]** or **[8(P2)]** key of the keypad.

“MY MENU” Short-cut Key Setup

In the factory default, the primary (press key) function of the **[X(LK)TXPO]** key is set to activating the Internet Connection feature. However, you may change the primary (press key) function of the **[X(LK)TXPO]** key to a short-cut path for recall of one of Set Mode Items.

1. Press and hold in the **[X(LK)TXPO]** key while turning the radio on. This procedure switches the **[X(LK)TXPO]** key between the “Internet Connection” function and the “MY MENU” key function.
2. Recall the Set Mode Item which you wish to assign to the **[X(LK)TXPO]** key as a Menu short-cut.
3. Press and hold in the **[X(LK)TXPO]** key for 1/2 second to assign the Set Mode Item to the **[X(LK)TXPO]** key.

SET (MENU) MODE

Set Mode Item	FUNCTION	AVAILABLE VALUES (DEFAULT: BOLD FASC)
1 [APO]	Setting of the Automatic Power-Off feature.	OFF / 30MIN / 1HOUR / 3HOUR / 5HOUR / 8HOUR
2 [AR BEP]	Selects the Beep option during ARTS operation.	IN RNG / ALWAYS / OFF
3 [AR INT]	Selects the Polling Interval during ARTS operation.	25 SEC / 15 SEC
4 [ARS]	Enables/Disables the Automatic Repeater Shift function.	ON / OFF
5 [ATT]	Enables/Disables the Receiver Front-end (10 dB) Attenuator.	OFF / ON
6 [BCLO]	Enables/Disables the Busy Channel Lock-Out feature.	OFF / ON
7 [BEEP]	Enables/Disables the keypad beeper.	ON / OFF
8 [BELL]	Selects the number of CTCSS/DCS Bell ringer repetitions.	OFF / 1 / 3 / 5 / 8 / CONT (Continuous ringing)
9 [BP LVL]	Adjust the Beep volume level.	LVL 1 - LVL 9 (LVL 5)
10 [BNK NM]	Stores Alpha-Numeric “Tags” for the Memory Group.	—
11 [BSY.LED]	Enables/Disables the BUSY LED while the Squelch is open.	ON / OFF
12 [CH CNT]	Selects the Channel Counter Search Width.	±5 MHz / ±10 MHz / ±50 MHz / ±100 MHz
13 [CLK.SFT]	Shifting of the CPU clock frequency.	OFF / ON
14 [CW ID]	Programs and activates the CW Identifier (used during ARTS operation).	—
15 [CWTRNG]	Enables/Disables the CW Training feature and selects the sending speed of the Morse Code.	OFF / 20CPM-65CPM (5CPM multiples) / 75CPM / 85CPM / 100CPM / 120CPM / 150CPM / 200CPM
16 [DC VLT]	Indicates the DC Supply Voltage.	—
17 [DCS CD]	Setting of the DCS code.	104 standard DCS codes (023)
18 [DCS RV]	Enables/Disables “Inverted” DCS code decoding.	DISABLE / ENABLE
19 [DIMMER]	Setting of the Display brightness level.	LVL 0 - LVL 12 (LVL 7)
20 [DMR.WRT]	Enables/Disables over-written the Direct Memory Recall Channel while operating on the Direct Memory Recall Channel.	MANUAL / AUTO
21 [DT A/M]	Enables/Disables the DTMF Autodial feature.	OFF / ON
22 [DT SET]	Programming of the DTMF Autodialer.	—
23 [EAI]	Enables/Disables the Emergency Automatic ID (EAI) Feature.	OFF / ON
24 [EAI.TMR]	Setting of the Emergency Automatic ID (EAI) operating mode and its Transmit Time.	INT. 1M through INT.10M / INT.15M / INT.20M / INT.30M / INT.40M / INT. 50M CON. 1M through CON.10M / CON.15M / CON.20M / CON.30M / CON.40M / CON. 50M (4WPM-13WPM / 15WPM / 17WPM / 20WPM / 24WPM / 30WPM / 40WPM)
25 [EDG.BEP]	Enables/Disables the Band-edge beeper while selecting the frequency via the DIAL knob.	OFF / ON
26 [EMG S]	Selects the alarm(s) utilized when the Emergency function is engaged.	BP+STR / BEAM / BP+BEM / CW / BP+CW / BEEP / STROBE
27 [HLF.DEV]	Reducing the Deviation level by 50 %.	OFF / ON
28 [HM/RV]	Selects the Primary function of the [HM/RV(EMG/R/H)] key.	REV / HOME
29 [INT CD]	Selects the Access Number (DTMF digit) for WIRES™ operation.	DTMF 1 - DTMF F
30 [INT MD]	Selects the Internet Link Connection mode.	SRG / FRG
31 [INT.AM]	Enables/Disables DTMF Autodialer feature while operating on the Internet Connection feature.	MANUAL / AUTO
32 [INT.SET]	Selects the memory register for an Access Number (DTMF code) for non-WIRES™ Internet Link System access.	—
33 [LAMP]	Selects the LCD/Keypad Lamp mode.	KEY / CONT / OFF
34 [LED LT]	Illuminates the STROBE glows continuously in white.	—
35 [LOCK]	Selects the Control Locking lockout combination.	KEY / DIAL / K+D / PTT / P+K / P+D / ALL
36 [MT-CL]	Selects the MONI switch (just below the PTT switch) function.	MONI / T-CALL*1
37 [MCGAIN]	Adjust the microphone gain level.	LVL 1 - LVL 9 (LVL 5)
38 [MW MD]	Selects the method of selection of channels for Memory Storage.	NEXT / LOWER
39 [NAME]	Toggles the display indication between “frequency” and the channel’s “Alpha/Numeric Tag.”	FREQ / ALPHA
40 [NM SET]	Stores Alpha-Numeric “Tags” for the Memory channels.	—

*1: Depends on the transceiver version.

SET (MENU) MODE

SET MODE ITEM	FUNCTION	AVAILABLE VALUES (DEFAULT: BOLD TYPE)
41 [ON TMR]	Set the ON Timer time.	OFF / 00H10M (00:10) - 24H00M (24:00) (10 minutes multiples)
42 [OPN.MSG]	Selects the Opening Message that appears when the radio is powered on.	DC / MSG / OFF
43 [PAGER]	Enables/disables the Enhanced CTCSS Paging & Code Squelch function.	OFF / ON
44 [PAGABK]	Enables/disables the Answer Back function of the Enhanced CTCSS Paging & Code Squelch.	OFF / ON
45 [PAG.CDR]	Setting the Receiver Pager Code for the Enhanced CTCSS Paging & Code Squelch.	(05_47)
46 [PAG.CDT]	Setting the Transmitting Pager Code for the Enhanced CTCSS Paging & Code Squelch.	(05_47)
47 [PSWD]	Programs and activates the Password feature.	—
48 [PTT.DLY]	Select the time delay between when the PTT switch is pressed and the carrier is transmitted.	OFF / 20MS / 50MS / 100MS / 200MS
49 [RESUME]	Selects the Scan Resume mode.	3 SEC / 5 SEC / 10 SEC / BUSY / HOLD
50 [RF SQL]	Adjusts the RF Squelch threshold level.	OFF / S1 / S2 / S3 / S4 / S5 / S6 / S8 / S9+
51 [RPT]	Sets the Repeater Shift Direction.	SIMP / -RPT / +RPT
52 [RX MD]	Selects the receiving mode.	AUTO / N-FM / AM / W-FM
53 [RXSAVE]	Selects the Receive-mode Battery Saver interval ("sleep" ratio)	200 MS / 300 MS / 500 MS / 1 S / 2 S / OFF
54 [S SRCH]	Selects the Smart Search Sweep mode.	SINGLE / CONT
55 [SCN.LMP]	Enables/Disables the Scan lamp while paused.	ON / OFF
56 [SHIFT]	Sets the magnitude of the repeater Shift.	0.00 - 149.95 MHz*2 (50 kHz increments)
57 [SKIP]	Selects the Memory Scan "Skip" channel-selection mode.	OFF / SKIP / ONLY
58 [SPLIT]	Enables/Disables split CTCSS/DCS coding.	OFF / ON
59 [SQL]	Sets the Squelch threshold level.	LVL 0 - LVL 15 (Narrow FM: LVL 1), LVL 0 - LVL 8 (Wide FM: LVL 2)
60 [SQL.TYP]	Selects the Tone Encoder and/or Decoder mode.	OFF / TONE / T SQL / DCS / RV TN
61 [STEP]	Setting of the synthesizer steps.	5.0k / 10.0k / 12.5k / 15.0k / 20.0k / 25.0k / 50.0k / 100.0k / AUTO
62 [SU1.ALT]	Selects the measurement units for the altimeter, and correcting the altimeter.	M / Ft*1,3 Offset: -1000 - 0 - +1000
63 [SU1.BRM]	Selects the measurement units for the Barometric Pressure, and correcting the Barometric Pressure.	HP / MB / HG / IC*1,3 Offset: -1000 - 0 - +1000
64 [SU1.SET]	Selects the display of the sensor units' information.	OFF / TEMP / BARO / ALT*3
65 [TEMP]	Selects the measurement units for the temperature sensor.	F (°F) / C (°C)*1
66 [TN FRQ]	Setting of the CTCSS Tone Frequency.	50 standard CTCSS tones (100 Hz)
67 [TOT]	Setting of the TOT time.	OFF / 1MIN / 3MIN / 5MIN / 10MIN
68 [TS MUT]	Enables/Disables the receiver audio output during the Tone Search Scanner is activated.	ON / OFF
69 [TS SPD]	Selects the Tone Search Scanner speed.	FAST / LOW
70 [TXSAVE]	Enables/Disables the Transmitter Battery Saver.	OFF / ON
71 [VFO MD]	Enables or disables the VFO band edge limiting for the current band.	BAND / ALL
72 [WAKEUP]	Setting of the Wakeup feature.	OFF / 5S / 10S / 20S / 30S / EAI
73 [WX ALT]	Enables/Disables the Weather Alert Scan feature.	OFF / ON

*1: Depends on the transceiver version.

*2: Depends on the frequency band.

*3: Requires optional SU-1.

SET (MENU) MODE

REPEATER SETTING

Enables/Disables the Automatic Repeater Shift function.
Sets the Repeater Shift Direction.
Sets the magnitude of the repeater Shift.

SETTING

Selects the number of CTCSS/DCS Bell ringer repetitions.

Setting of the DCS code.

Enables/Disables "Inverted" DCS code decoding.
Enables/Disables the DTMF Autodial feature.
Programming of the DTMF Autodialer.
Sets the Squelch threshold level.

Selects the Tone Encoder and/or Decoder mode.

Setting of the CTCSS Tone Frequency.

SETTING

Selects the Beep option during ARTS operation.
Selects the Polling Interval during ARTS operation.
Programs and activates the CW Identifier.

SETTING

Stores Alpha-Numeric "Tags" for the Memory Group.
Enables/Disables over-written the Direct Memory Recall Channel while operating on the Direct Memory Recall Channel.
Selects the method of selection of channels for Memory Storage.
Toggles the display indication between "Frequency" and the channel's "Alpha/Numeric Tag."
Stores Alpha-Numeric "Tags" for the Memory channels.

SETTING

Selects the Scan Resume mode.
Enables/Disables the Scan lamp while paused.
Selects the Memory Scan "Skip-Echannel-selection mode.
Enables/Disables the Weather Alert Scan feature.
Enables/Disables the receiver audio output during the Tone Search Scanner is activated.
Selects the Tone Search Scanner speed.

SETTING

Selects the Receive-mode Battery Saver interval.

Enables/Disables the Transmitter Battery Saver.
Setting of the Wakeup feature.

SETTING

Selects the Access Number (DTMF digit) for WIRESTM operation.
Selects the Internet Link Connection mode.
Selects the memory register for an Access Number (DTMF code) for non-WIRESTM Internet Link System access.

Enables/Disables DTMF Autodialer feature while operating on the Internet Connection feature.

SETTING

Enables/Disables the Emergency Automatic ID (EAI) Feature.
Setting of the Emergency Automatic ID (EAI) operating mode and its Transmit Time.

Selects the alarm(s) utilized when the Emergency function is engaged.

SETTING

Enables/disables the Enhanced CTCSS Paging & Code Squelch function.
Enables/disables the Answer Back function of the Enhanced CTCSS Paging & Code Squelch.
Setting the Receiver Pager Code for the Enhanced CTCSS Paging & Code Squelch.
Setting the Transmitting Pager Code for the Enhanced CTCSS Paging & Code Squelch.

*1: Depends on the frequency band.

SET MODE ITEM AVAILABLE VALUES (DEFAULT)

4 [ARS] **ON** / OFF
51 [RPT] **SIMP** / -RPT / +RPT
56 [SHIFT] 0.00 - 149.95 MHz*1

SET MODE ITEM AVAILABLE VALUES (DEFAULT)

8 [BELL] **OFF** / 1 / 3 / 5 / 8 /
CONT (Continuous ringing)
17 [DCS CD] 104 standard DCS codes (**023**)
18 [DCS RV] **DISABLE** / ENABLE
21 [DT AM] **OFF** / ON
22 [DT SET] —
59 [SQL] LVL 0 - LVL 15 (NFM: **LVL 1**),
LVL 0 - LVL 8 (WFM: **LVL 2**)
60 [SQL.TYP] **OFF** / TONE / T SQL /
DCS / RV TN
66 [TN FRQ] 50 standard CTCSS tones (**100 Hz**)

SET MODE ITEM AVAILABLE VALUES (DEFAULT)

2 [AR BEP] **IN RNG** / ALWAYS / OFF
3 [AR INT] **25 SEC** / 15 SEC
14 [CW ID] —

SET MODE ITEM AVAILABLE VALUES (DEFAULT)

10 [BNK NM] —
20 [DMR.WRT] **MANUAL** / AUTO

38 [MW MD] **NEXT** / LOWER
39 [NAME] **FREQ** / ALPHA
40 [NM SET] —

SET MODE ITEM AVAILABLE VALUES (DEFAULT)

49 [RESUME] **BUSY** / HOLD / TIME
55 [SCN.LMP] **ON** / OFF
57 [SKIP] **OFF** / SKIP / ONLY
73 [WX ALT] **OFF** / ON
68 [TS MUT] **OFF** / ON
69 [TS SPD] **FAST** / SLOW

SET MODE ITEM AVAILABLE VALUES (DEFAULT)

53 [RXSAVE] **200 MS** / 300 MS / 500 MS /
1 S / 2 S / OFF
70 [TXSAVE] **OFF** / ON
72 [WAKEUP] **OFF** / 5S / 10S / 20S / 30S / EAI

SET MODE ITEM AVAILABLE VALUES (DEFAULT)

29 [INT CD] **DTMF 1** - DTMF F
30 [INT MD] **SRG** / FRG
31 [INT.AM] **MANUAL** / AUTO

32 [INT.SET] —

SET MODE ITEM AVAILABLE VALUES (DEFAULT)

23 [EAI] **OFF** / ON
24 [EAI.TMR] **INT. 1M** through INT.10M,
INT.15M, INT.20M, INT.30M,
INT.40M, INT.50M,
CON. 1M through CON.10M,
CON.15M, CON.20M, CON.30M,
CON.40M, and CON.50M
26 [EMG S] **BP+STR** / BEAM / BP+BEM / CW /
BP+CW / BEEP / STROBE

SET MODE ITEM AVAILABLE VALUES (DEFAULT)

43 [PAGER] **OFF** / ON
44 [PAG.ABK] **OFF** / ON
45 [PAG.CDR] **(05_47)**
46 [PAG.CDT] **(05_47)**

SET (MENU) MODE

SETTING	SET MODE ITEM	AVAILABLE VALUES (DEFAULT)
Enables/Disables the keypad beeper.	7 [BEEP]	ON / OFF
Adjust the Beep volume level.	9 [BP LVL]	LVL 1 - LVL 9 (LVL 5)
Enables/Disables the BUSY LED while the Squelch is open.	11 [BSY.LED]	ON / OFF
Selects the Primary function of the [HMRV(EMG)R/H] key.	28 [HMRV]	REV / HOME
Selects the LCD/Keypad Lamp mode.	33 [LAMP]	KEY / CONT / OFF
Selects the Control Locking lockout combination.	35 [LOCK]	KEY / DIAL / K+D / PTT / P+K / P+D / ALL
	36 [M/T-CL]	MONI / T-CALL*2
Selects the MONI switch (just below the PTT switch) function.		
SETTING	SET MODE ITEM	AVAILABLE VALUES (DEFAULT)
Selects the measurement units for the altimeter, and correcting the altimeter.	62 [SU1.ALT]	M / F*2,3
	63 [SU1.BRM]	Offset: -1000 - 0 - +1000 HP / MB / HG / IC*2,3 Offset: -1000 - 0 - +1000
Selects the measurement units for the Barometric Pressure, and correcting the Barometric Pressure.	64 [SU1.SET]	OFF / TEMP / BARO / ALT*3
Selects the display of the sensor units*Einformation.	65 [TEMP]	F (°F) / C (°C)*2
Selects the measurement units for the temperature sensor.		
SETTING	SET MODE ITEM	AVAILABLE VALUES (DEFAULT)
Indicates the DC Supply Voltage	16 [DC VLT]	—
Setting of the Display brightness level.	19 [DIMMER]	LVL 0 - LVL 12 (LVL 7)
SETTING	SET MODE ITEM	AVAILABLE VALUES (DEFAULT)
Setting of the Automatic Power-Off feature.	1 [APO]	OFF / 30MIN / 1HOUR / 3HOUR / 5HOUR / 8HOUR
Enables/Disables the Receiver Front-end (10 dB) Attenuator.	5 [ATT]	OFF / ON
Enables/Disables the Busy Channel Lock-Out feature.	6 [BCLO]	OFF / ON
Selects the Channel Counter Search Width.	12 [CH CNT]	±5 MHz / ±10 MHz / ±50 MHz / ±100 MHz
Shifting of the CPU clock frequency.	13 [CLK.SFT]	OFF / ON
Enables/Disables the CW Training feature and selects the sending speed of the Morse Code.	15 [CWTRNG]	OFF / 20CPM - 65CPM (5CPM multiples) / 75CPM / 85CPM / 100CPM / 120CPM / 150CPM / 200CPM (4WPM-13WPM / 15WPM / 17WPM / 20WPM / 24WPM / 30WPM / 40WPM)
Enables/Disables the Band-edge beeper while selecting the frequency via the DIAL knob.	25 [EDG.BEP]	OFF / ON
Reducing the Deviation level by 50 %.	27 [HLF.DEV]	OFF / ON
Illuminates the STROBE glows continuously in white.	34 [LED LT]	—
Adjust the microphone gain level.	37 [MCGAIN]	LVL 1 - LVL 10 (LVL 5)
Set the ON Timer time.	41 [ON TMR]	OFF / 00H10M (00:10) - 24H00M (24:00) (10 minutes multiples)
Selects the Opening Message that appears when the radio is powered on.	42 [OPN.MSG]	DC / MSG / OFF
Programs and activates the Password feature.	47 [PSWD]	—
Select the time delay between when the PTT switch is pressed and the carrier is transmitted.	48 [PTT.DLY]	OFF / 20MS / 50MS / 100MS / 200MS
Adjusts the RF Squelch threshold level.	50 [RF SQL]	OFF / S1 / S2 / S3 / S4 / S5 / S6 / S8 / S9+
Selects the receiving mode.	52 [RX MD]	AUTO / N-FM / AM / W-FM
Selects the Smart Search Sweep mode.	54 [S SRCH]	SINGLE / CONT
Enables/Disables split CTCSS/DCS coding.	58 [SPLT]	OFF / ON
Setting of the synthesizer steps.	61 [STEP]	5.0k / 10.0k / 12.5k / 15.0k / 20.0k / 25.0k / 50.0k / 100.0k / AUTO
Setting of the TOT time	67 [TOT]	OFF / 1MIN / 3MIN / 5MIN / 10MIN
Enables or disables the VFO band edge limiting for the current band.	71 [VFO MD]	BAND / ALL

*1: Depends on the frequency band.
*2: Depends on the transceiver version.
*3: Requires optional SU-1.

SET (MENU) MODE

Set Mode Item 1 [APO]

Function: Setting of the Automatic Power-Off feature.

Available Values: OFF/30MIN/1HOUR/3HOUR/5HOUR/8HOUR

Default: OFF

Set Mode Item 2 [AR BEP]

Function: Selects the Beep option during ARTS operation.

Available Values: INRANG/ALWAYS/OFF

Default: INRANG

INRANG: Beeps sound only when the radio first detects that you are within range.

ALWAYS: Beeps sound every time a polling transmission is received from the other station (every 15 or 25 seconds when in range).

OFF: No alert beeps sound.

Set Mode Item 3 [AR INT]

Function: Selects the Polling Interval during ARTS operation.

Available Values: 25 SEC/15 SEC

Default: 25SEC

Set Mode Item 4 [ARS]

Function: Enables/Disables the Automatic Repeater Shift function.

Available Values: ARS. ON/ARS.OFF

Default: ARS. ON

Set Mode Item 5 [ATT]

Function: Enables/Disables the Receiver Front-end (10 dB) Attenuator.

Available Values: OFF/ON

Default: OFF

Set Mode Item 6 [BCLO]

Function: Enables/Disables the Busy Channel Lock-Out feature.

Available Values: OFF/ON

Default: OFF

Set Mode Item 7 [BEEP]

Function: Enables/Disables the keypad beeper.

Available Values: ON/OFF

Default: ON

Set Mode Item 8 [BELL]

Function: Selects the number of CTCSS/DCS Bell ringer repetitions.

Available Values: OFF/1/3/5/8/CONT (Continuous ringing)

Default: OFF

SET (MENU) MODE

Set Mode Item 9 [BP LVL]

Function: Adjust the Beep volume level.

Available Values: LVL 1 - LVL 10

Default: LVL 5

Set Mode Item 10 [BNK NM]

Function: Stores Alpha-Numeric "Tags" for the Memory Group.

See page ?? for details.

Set Mode Item 11 [BSY.LED]

Function: Enables/Disables the **BUSY** LED while the Squelch is open.

Available Values: ON/OFF

Default: ON

Set Mode Item 12 [CH CNT]

Function: Selects the Channel Counter Search Width.

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

Default: ± 5 MHz

Set Mode Item 13 [CLK.SFT]

Function: Shifting of the CPU clock frequency.

Available Values: OFF/ON

Default: OFF

This function is only used to move a spurious response "birdie," should it fall on a desired frequency.

Set Mode Item 14 [CW ID]

Function: Programs and activates the CW Identifier (used during ARTS operation).

See page ?? for details.

Set Mode Item 15 [CWTRNG]

Function: Enables/Disables the CW Training feature and selects the sending speed of the Morse Code.

Available Values: OFF/20CPM-65CPM (5CPM multiples)/75CPM/85CPM/100CPM/120CPM/150CPM/200CPM

Default: OFF

Set Mode Item 16 [DC VLT]

Function: Indicates the DC Supply Voltage.

Set Mode Item 17 [DCS CD]

Function: Setting of the DCS code.

Available Values: 104 standard DCS codes

Default: DCS.023

DCS CODE											
023	025	026	031	032	036	043	047	051	053		
054	065	071	072	073	074	114	115	116	122		
125	131	132	134	143	145	152	155	156	162		
165	172	174	205	212	223	225	226	243	244		
245	246	251	252	255	261	263	265	266	271		
274	306	311	315	325	331	332	343	346	351		
356	364	365	371	411	412	413	423	431	432		
445	446	452	454	455	462	464	465	466	503		
506	516	523	526	532	546	565	606	612	624		
627	631	632	654	662	664	703	712	723	731		
732	734	743	754	-	-	-	-	-	-		

SET (MENU) MODE

Set Mode Item 18 [DCS RV]

Function: Enables/Disables "Inverted" DCS code decoding.

Available Values: DISABLE/ENABLE

Default: DISABLE

Set Mode Item 19 [DIMMER]

Function: Setting of the Display brightness level.

Available Values: LVL 0 - LVL 12

Default: LVL 12

Set Mode Item 20 [DMR.WRT]

Function: Enables/Disables over-written the Direct Memory Recall Channel while operating on the Direct Memory Recall Channel.

Available Values: ON/OFF

Default: ON

Set Mode Item 21 [DT A/M]

Function: Enables/Disables the DTMF Autodial feature.

Available Values: MANUAL/AUTO

Default: MANUAL

Set Mode Item 22 [DT SET]

Function: Programming of the DTMF Autodialer.

See page ?? for details.

Set Mode Item 23 [EAI]

Function: Enables/Disables the Emergency Automatic ID (EAI) Feature.

Available Values: OFF/ON

Default: OFF

Set Mode Item 24 [EAI.TMR]

Function: Setting of the Emergency Automatic ID (EAI) operating mode and its Transmit Time.

Available Values:

INT. 1M through INT.10M, INT.15M, INT.20M, INT.30M, INT.40M, INT. 50M,
CON. 1M through CON.10M, CON.15M, CON.20M, CON.30M, CON.40M, and CON. 50M

Default: INT. 1M

Set Mode Item 25 [EDG.BEP]

Function: Enables/Disables the Band-edge beeper while selecting the frequency via the DIAL knob.

Available Values: OFF/ON

Default: OFF

SET (MENU) MODE

Set Mode Item 26 [EMG S]

Function: Selects the alarm(s) utilized when the Emergency function is engaged.

Available Values: BP+STR/BEAM/BP+BEM/CW/BP+CW/BEEP/STROBE

Default: BP+STR

BP+STR: Loud "Alarm" sounds and the **TX/BUSY** indicator flashes.

BEAM: The **TX/BUSY** indicator glows continuously in white.

BP+BEM: Loud "Alarm" sounds and the **TX/BUSY** indicator glows continuously in white.

CW: Transmits the Morse Code "SOS" (•••----•••) message on the air beginning one minute after activation of the Emergency function.

BP+CW: Loud "Alarm" sounds and the Morse Code "SOS" (•••----•••) message is transmitted on the air beginning one minute after activation of the Emergency function.

BEEP: Loud "Alarm" sounds.

STROBE: The **TX/BUSY** indicator lamp flashes.

When the radio is set to the CW or BP+CW mode, the radio will be instructed to send "DE (your callsign)" after the sending of the SOS message, if your callsign is entered via Set Mode Item 14: CW ID.

Set Mode Item 27 [HLF.DEV]

Function: Reducing the Deviation level by 50 %.

Available Values: OFF/ON

Default: OFF

Set Mode Item 28 [HM/RV]

Function: Selects the Primary function of the [HM/RV(EMG)R/H] key.

Available Values: REV/HOME

Default: REV

REV: Pressing the [HM/RV(EMG)R/H] key reverses the transmit and receive frequencies during repeater operation.

HOME: Pressing the [HM/RV(EMG)R/H] key instantly recalls a favorite "Home" channel.

Set Mode Item 29 [INT CD]

Function: Selects the Access Number (DTMF digit) for WIRES™ operation.

Available Values: DTMF 1 - DTMF F

Default: DTMF 1

Set Mode Item 30 [INT MD]

Function: Selects the Internet Link Connection mode.

Available Values: SRG/FRG

Default: SRG

SET (MENU) MODE

Set Mode Item 31 [INT.A/M]

Function: Enables/Disables DTMF Autodialer feature while operating on the Internet Connection feature.

Available Values: ON/OFF

Default: OFF

Set Mode Item 32 [INT.SET]

Function: Selects the memory register for an Access Number (DTMF code) for non-WIRES™ Internet Link System access.

Available Values: F 0 - F63

Default: F 1

Set Mode Item 33 [LAMP]

Function: Selects the LCD/Keypad Lamp mode.

Available Values: KEY/CONT/OFF

Default: KEY

KEY: Illuminates the Keypad/LCD for five seconds when you rotate the **DIAL** knob or press any key or switch (except the **PTT** switch).

CONT: Illuminates the Keypad/LCD continuously.

OFF: Disables the Keypad/LCD lamp illumination.

Set Mode Item 34 [LED LT]

Function: Illuminates the **STROBE** glows continuously in white.

Set Mode Item 35 [LOCK]

Function: Selects the Control Locking lockout combination.

Available Values: KEY/DIAL/K+D/PTT/P+K/P+D/ALL

Default: K+D

Note: "K" = "Key;" "D" = "Dial;" and "P" = "PTT."

Set Mode Item 36 [M/T-CL]

Function: Selects the **MONI** switch (just below the **PTT** switch) function.

Available Values: MONI/T-CALL

Default: MONI

MONI: Pressing the **MONI** switch causes the Noise/Tone Squelch to be over-ridden, allowing you to listen for weak (or non-encoded) signals.

T-CALL: Pressing the **MONI** switch activates a 1750-Hz burst tone, used for repeater access in many countries (especially in Europe).

Set Mode Item 37 [MCGAIN]

Function: Adjust the microphone gain level.

Available Values: LVL 1 - LVL 10

Default: LVL 5

SET (MENU) MODE

Set Mode Item 38 [MW MD]

Function: Selects the method of selection of channels for Memory Storage.

Available Values: NEXT/LOWER

Default: NEXT

NEXT: Stores the data into the memory channel which is next-highest from the last-stored memory channel.

LOWER: Stores the data into the next-available “free” channel.

Set Mode Item 39 [NAME]

Function: Toggles the display indication between “frequency” and the channel’s “Alpha/Numeric Tag.”

Available Values: FREQ/ALPHA

Default: FREQ

Set Mode Item 40 [NM SET]

Function: Stores Alpha-Numeric “Tags” for the Memory channels.

See page ?? for details.

Set Mode Item 41 [ON TMR]

Function: Set the ON Timer time.

Available Values: OFF/00H10M (00:10) - 24H00M (24:00) (10 minutes multiples)

Default: OFF

The ON Timer turns on the radio at the programmed time.

SET (MENU) MODE

Set Mode Item 42 [OPN.MSG]

Function: Selects the Opening Message that appears when the radio is powered on.

Available Values: DC/MSG/OFF

Default: DC

DC: DC supply voltage

MSG: Set by user. See below.

OFF: No Opening Message

Here’s how to program the Opening Message:

1. Set this Set Mode Item to “MSG.”
2. Press the **[MODE(SPS)SQ TYP]** key momentarily to enable programming of the opening message. You will notice the first character entry’s location blinking.
3. Rotate the **DIAL** knob to select the first letter/number of the message, then press the **[MODE(SPS)SQ TYP]** key momentarily to save the first letter/number and move on to the next character.
4. Repeat the previous step as necessary to complete the message (up to six characters).
5. If you make a mistake, press the **[BAND(SCN)BND DN]** key to back-space the cursor; now re-enter the correct letter/number.
6. When you have entered the desired opening message, press the **[0(SET)]** key momentarily to confirm the message, then press the **PTT** key to save the settings and exit to normal operation.

Set Mode Item 43 [PAGER]

Function: Enables/disables the Enhanced CTCSS Paging & Code Squelch function.

Available Values: OFF/ON

Default: OFF

Set Mode Item 44 [PAG.ABK]

Function: Enables/disables the Answer Back function of the Enhanced CTCSS Paging & Code Squelch.

Available Values: OFF/ON

Default: OFF

Set Mode Item 45 [PAG.CDR]

Function: Setting the Receiver Pager Code for the Enhanced CTCSS Paging & Code Squelch.

See page ?? for details.

Set Mode Item 46 [PAG.CDT]

Function: Setting the Transmitting Pager Code for the Enhanced CTCSS Paging & Code Squelch.

See page ?? for details.

SET (MENU) MODE

Set Mode Item 47 [PSWD]

Function: Programs and activates the Password feature.

See page ?? for details.

Set Mode Item 48 [PTT.DLY]

Function: Select the time delay between when the **PTT** switch is pressed and the carrier is transmitted.

Available Values: OFF/20MS/50MS/100MS/200MS

Default: OFF

Set Mode Item 49 [RESUME]

Function: Selects the Scan Resume mode.

Available Values: BUSY/HOLD/TIME

Default: BUSY

BUSY: The scanner will hold until the signal disappears, then will resume when the carrier drops.

HOLD: The scanner will stop when a signal is received, and will not restart.

TIME: The scanner will hold for the five seconds, then resume whether or not the other station is still transmitting.

Set Mode Item 50 [RF SQL]

Function: Adjusts the RF Squelch threshold level.

Available Values: OFF/S1/S2/S3/S4/S5/S6/S8/S9+

Default: OFF

Set Mode Item 51 [RPT]

Function: Sets the Repeater Shift Direction.

Available Values: -RPT/+RPT/SIMP

Default: Depends on the transceiver version, as well as the setting of Set Mode Item 4: ARS.

Set Mode Item 52 [RX MOD]

Function: Selects the receiving mode.

Available Values: AUTO/N-FM/AM/W-FM

Default: AUTO (Mode automatically changes according to operating frequency)

Set Mode Item 53 [RXSAVE]

Function: Selects the Receive-mode Battery Saver interval ("sleep" ratio)

Available Values: 200 MS(1:1)/300 MS(1:1.5)/500 MS(1:2.5)/1 S(1:5)/2 S(1:10)/OFF

Default: 200 MS

SET (MENU) MODE

Set Mode Item 54 [S SRCH]

Function: Selects the Smart Search Sweep mode.

Available Values: SINGLE/CONT

Default: SINGLE

SINGLE: The transceiver sweeps the current band once in each direction, starting on the current frequency. All channels where activity is present (up to 15 in each direction) are loaded into the Smart Search memories. Whether or not all 31 memories are filled, the search stops after one sweep in each direction.

CONT: The transceiver makes a sweep in each direction as with the "SINGLE" mode, but if all 31 channels are not filled after the first sweep, the radio continues sweeping until they are all filled.

Set Mode Item 55 [SCN.LMP]

Function: Enables/Disables the Scan lamp while paused.

Available Values: ON/OFF

Default: ON

Set Mode Item 56 [SHIFT]

Function: Sets the magnitude of the repeater Shift.

Available Values: 0.00 - 149.95 MHz (50 kHz increments)

Default: Depends on the operating band and transceiver version.

Set Mode Item 57 [SKIP]

Function: Selects the Memory Scan "Skip" channel-selection mode.

Available Values: OFF/SKIP/ONLY

Default: OFF

SKIP: The scanner will "skip" the flagged channels during scanning.

ONLY: The scanner will only scan channels that are flagged (Preferential Scan List).

OFF: All memory channels will be scanned (the "flag" will be ignored).

Set Mode Item 58 [SPLIT]

Function: Enables/Disables split CTCSS/DCS coding.

Available Values: OFF/ON

Default: OFF

When this Set Mode Item is set to "ON," you will see the following additional parameters after the "RV TN" parameter while configuring Set Mode Item 60: SQL.TYP.

D.CODE: DCS Encode only.

T.DCS: Encodes a CTCSS tone and Decodes a DCS code.

D.TONE: Encodes a DCS code and Decodes a CTCSS tone.

Select the desired operating mode from the selections shown above.

SET (MENU) MODE

Set Mode Item 59 [SQL]

Function: Sets the Squelch threshold level.

Available Values: LVL 0 - LVL 15 (Narrow FM), LVL 0 - LVL 8 (Wide FM)

Default: LVL 1 (Narrow FM), LVL 2 (Wide FM)

Set Mode Item 60 [SQL.TYP]

Function: Selects the Tone Encoder and/or Decoder mode.

Available Values: OFF/TONE/T SQL/DCS/RV TN

Default: OFF

TONE: CTCSS Encoder

TSQL: CTCSS Encoder/Decoder

DCS: Digital Coded Encoder/Decoder

RV TN: Reverse CTCSS Decoder (Mutes receiver when matching tone is received)

Note: See also Set Mode Item 58: SPLIT regarding additional selections available during "Split Tone" operation.

Set Mode Item 61 [STEP]

Function: Setting of the synthesizer steps.

Available Values: 5.0k/10.0k/12.5k/15.0k/20.0k/25.0k/50.0k/100.0k, or AUTO

Default: AUTO (Step automatically changes according to operating frequency.)

Set Mode Item 62 [SU1.ALT]

Function: Selects the measurement units for the altimeter (require optional **SU-1**), and correcting the altimeter.

Available Values: M (meter)/Ft (feet), offset: -1000 to +1000

Default: Depends on the transceiver version.

Set Mode Item 63 [SU1.BRM]

Function: Selects the measurement units for the Barometric Pressure (require optional **SU-1**), and correcting the Barometric Pressure.

Available Values: HP (hpa)/MB (mbar)/HG (mmHg)/IC (inch), offset: -1000 to +1000

Default: Depends on the transceiver version.

Set Mode Item 64 [SU1.SET]

Function: Selects the display of the sensor units' information.

Available Values: OFF/TEMP/BARO/ALTI

Default: OFF

The barometric pressure (BARO) and altitude (ALTI) information require the optional **SU-1**.

SET (MENU) MODE

Set Mode Item 65 [TEMP]

Function: Selects the measurement units for the temperature sensor.

Available Values: °F/°C

Default: Depends on the transceiver version.

Set Mode Item 66 [TN FRQ]

Function: Setting of the CTCSS Tone Frequency.

Available Values: 50 standard CTCSS tones

Default: 100.0 Hz

CTCSS TONE FREQUENCY (Hz)					
67.0	69.3	71.9	74.4	77.0	79.7
82.5	85.4	88.5	91.5	94.8	97.4
100.0	103.5	107.2	110.9	114.8	118.8
123.0	127.3	131.8	136.5	141.3	146.2
151.4	156.7	159.8	162.2	165.5	167.9
171.3	173.8	177.3	179.9	183.5	186.2
189.9	192.8	196.6	199.5	203.5	206.5
210.7	218.1	225.7	229.1	233.6	241.8
250.3	254.1	—	—	—	—

Set Mode Item 67 [TOT]

Function: Setting of the TOT time

Available Values: OFF/1MIN/3MIN/5MIN/10MIN

Default: 3MIN

The time-out timer shuts off the transmitter after continuous transmission of the programmed time.

Set Mode Item 68 [TS MUT]

Function: Enables/Disables the receiver audio output during the Tone Search Scanner is activated.

Available Values: OFF/ON

Default: OFF

Set Mode Item 69 [TS SPD]

Function: Selects the Tone Search Scanner speed.

Available Values: FAST (2.5 tone/sec)/SLOW (1.25 tone/sec)

Default: FAST

Set Mode Item 70 [TXSAVE]

Function: Enables/Disables the Transmitter Battery Saver.

Available Values: OFF/ON

Default: OFF

Set Mode Item 71 [VFO MD]

Function: Enables or disables the VFO band edge limiting for the current band.

Available Values: BAND/ALL

Default: BAND

BAND: When the VFO frequency reaches the high band edge of the current band, the VFO frequency will jump to the low band edge of the current band (or vice versa).

ALL: When the VFO frequency reaches the high edge of the current band, the VFO frequency will jump to the low band edge of the next band (or vice versa).

SET (MENU) MODE

Set Mode Item 72 [WAKEUP]

Function:

Available Values: OFF/5S/10S/20S/30S/EAI

Default: OFF

Set Mode Item 73 [WX ALT]

Function: Enables/Disables the Weather Alert Scan feature.

Available Values: OFF/ON

Default: OFF

SPECIFICATIONS

General

Frequency Ranges:
(USA Version)

RX 0.5 - 1.8 MHz (BC Band),
1.8 - 30 MHz (SW Band),
30 - 76(59) MHz (50 MHz HAM Band),
76(59) - 108 MHz (FM Band),
108 - 137 MHz (Air Band),
137 - 174 MHz (144 MHz HAM Band),
174 - 222 MHz (VHF TV Band),
222 - 420 MHz (ACT 1 Band),
420 - 470 MHz (430 MHz HAM Band),
470 - 800 (729) (UHF TV Band),
(757 - 774) (UHF TV Band),
800 - 999.990 MHz (ACT 2 Band; USA Cellular Blocked)

TX 144 - 146(148) MHz,
222 - 225 MHz (USA only)
430 - 440(450) MHz,

Channel Steps:

5/9/10/12.5/15/20/25/50/100 kHz

Frequency Stability:

±5 ppm @ 14 °F to 140 °F (−10 °C to +60 °C)

Repeater Shift:

±600 kHz (144 MHz), ±1.6/5.0/7.6 MHz (430 MHz)

Emission Type:

F2D, F3E

Antenna Impedance:

50 Ω

Supply Voltage:

Nominal: 7.4 V DC, Negative Ground

(Negative Ground)

Operating: 5.0 ~ 16.0 V DC (EXT DC Jack)

11.0 ~ 16.0 V DC (EXT DC Jack with Charging)

Current Consumption:

150 mA (Receive)

(Approx. @7.4 V)

60 mA (Standby, Saver Off)

20 mA (Standby, Saver On)

1 mA (ON Timer Activates)

200 μA (Auto Power Off)

1.6 A (5 W TX, 144 MHz)

?? A (1.5 W TX, 222 MHz: USA only)

1.8 A (5 W TX, 430 MHz)

Operating Temperature:

−4 °F to 140 °F (−20 °C to +60 °C)

Case Size:

2.3" (W) x 3.5" (H) x 1.1" (D) (58 x 89 x 28.5 mm)

(W/O knob, antenna, and belt clip)

Weight:

???? Oz (??? g) with FNB-80LI, and antenna

SPECIFICATIONS

Transmitter

RF Power Output: (Approx.)	High	Low 3	Low 2	Low 1
144 MHz/430 MHz	5.0 W	2.5 W	1.0 W	0.3 W
222 MHz	1.5 W	1.0 W	0.5 W	0.2 W
Modulation Type:	Variable Reactance F2D, F3E			
Maximum Deviation:	±5.0 kHz (F2D, F3E)			
Spurious Emission:	At least 60 dB down (@ High power)			
	At least 50 dB down (@ Low 2 and Low 1 power)			
Microphone Impedance:	2 kΩ			

Receiver

Circuit Type:	AM, NFM: Double-Conversion Superheterodyne WFM: Triple-Conversion Superheterodyne		
Intermediate Frequencies:	1st	2nd	3rd
AM, NFM:	47.25 MHz	450 kHz	–
WFM:	47.25 MHz	10.7 MHz	1 MHz
Sensitivity : (Cellular Blocked)	3 μV TYP for 10 dB SN (0.5-30 MHz, AM)		
	0.35 μV TYP for 12 dB SINAD (30-54 MHz, NFM)		
	1 μV TYP for 12 dB SINAD (54-76 MHz, NFM)		
	1 μV TYP for 12 dB SINAD (54-59 MHz, NFM: USA)		
	1.5 μV TYP for 12 dB SINAD (76-108 MHz, WFM)		
	1.5 μV TYP for 12 dB SINAD (59-108 MHz, WFM: USA)		
	1.5 μV TYP for 10 dB SN (108-137 MHz, AM)		
	0.2 μV for 12 dB SINAD (137-140 MHz, FM)		
	0.16 μV for 12 dB SINAD (140-150 MHz, FM)		
	0.2 μV for 12 dB SINAD (150-174 MHz, FM)		
	1 μV TYP for 12 dB SINAD (174-222 MHz, WFM)		
	0.5 μV for 12 dB SINAD (300-350 MHz, NFM)		
	0.2 μV for 12 dB SINAD (350-400 MHz, NFM)		
	0.18 μV for 12 dB SINAD (400-470 MHz, NFM)		
	1.5 μV for 12 dB SINAD (470-540 MHz, WFM)		
	3 μV TYP for 12 dB SINAD (540-800 MHz, WFM)		
	1.5 μV TYP for 12 dB SINAD (800-999.990 MHz, NFM)		
Selectivity:	AM, NFM: 12 kHz/35 kHz (–6 dB /–60 dB)		
	WFM: 200 kHz/300 kHz (–6 dB /–20 dB)		
AF Output:	200 mW @ 8 W for 10 % THD (@ 7.4 V)		
	400 mW @ 8 W for 10 % THD (@ 13.8 V)		

Specifications are subject to change without notice, and are guaranteed within the 144 and 430 MHz amateur bands only. Frequency ranges will vary according to transceiver version; check with your dealer.

“AUTO” MODE PRESET OPERATING PARAMETERS

USA Version

FREQUENCY RANGE (MHz)	MODE	STEP
0.500 - 1.800	AM	10 kHz
1.800 - 30.000	AM	5 kHz
30.000 - 50.500	AM	5 kHz
50.500 - 59.000	FM	5 kHz
59.000 - 88.000	WFM	50 kHz
88.000 - 108.000	WFM	100 kHz
108.000 - 137.000	AM	25 kHz
137.000 - 144.000	FM	12.5 kHz
144.000 - 148.000	FM	5 kHz
148.000 - 156.000	FM	12.5 kHz
156.000 - 157.450	FM	25 kHz
157.450 - 160.600	FM	12.5 kHz
160.600 - 160.975	FM	25 kHz
160.975 - 161.500	FM	12.5 kHz
161.500 - 162.900	FM	25 kHz
162.900 - 174.000	FM	12.5 kHz
174.000 - 222.000	WFM	50 kHz
222.000 - 225.000	FM	5 kHz
225.000 - 300.000	FM	12.5 kHz
300.000 - 336.000	AM	100 kHz
336.000 - 420.000	FM	12.5 kHz
420.000 - 450.000	FM	25 kHz
450.000 - 470.000	FM	12.5 kHz
470.000 - 800.000	WFM	50 kHz
803.000 - 999.000	FM	12.5 kHz

EXP Version

FREQUENCY RANGE (MHz)	MODE	STEP
0.500 - 1.800	AM	9 kHz
1.800 - 30.000	AM	5 kHz
30.000 - 76.000	FM	5 kHz
76.000 - 88.000	FM	5 kHz
88.000 - 108.000	WFM	100 kHz
108.000 - 137.000	AM	25 kHz
137.000 - 160.600	FM	12.5 kHz
160.600 - 162.025	FM	25 kHz
162.025 - 174.000	FM	12.5 kHz
174.000 - 222.000	WFM	50 kHz
222.000 - 300.000	FM	12.5 kHz
300.000 - 320.000	AM	25 kHz
320.000 - 420.000	FM	12.5 kHz
420.000 - 430.000	FM	12.5 kHz
430.000 - 440.000	FM	25 kHz
440.000 - 470.000	FM	12.5 kHz
470.000 - 800.000	WFM	50 kHz
800.000 - 999.000	FM	12.5 kHz

INSTALLATION OF THE SU-1 (OPTION)

1. Make sure that the transceiver is off. Remove the hard or soft case, if used.
2. Remove the battery pack.
3. Locate the connector for the **SU-1** under the caution seal in the battery compartment on the back of the radio, just peel off the caution seal.
4. Align the connector on the **SU-1** with the transceiver's connector and gently press the unit into place.
5. Affix the new (supplied) caution seal, and replace the battery.
6. Installation is now complete.

Important note

The Barometric Pressure/Altitude features of the optional **SU-1** are designed to be supplemental aids for the information of the user, and are not intended to be a substitute for accurate, calibrated Barometer or Altimeter devices used for navigation critical to personal safety.

NOTE

NOTE

NOTE



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

DECLARATION BY MANUFACTURER

The Scanner receiver is not a digital scanner and is incapable of being converted or modified to a digital scanner receiver by any user.

WARNING: MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR RADIOTELEPHONE SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND FEDERAL LAW.

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