



TRACKER PREMIER™

SYSTEM 70

SATELLITE RECEIVER

WITH XPERT™ REMOTE CONTROL



O W N E R ' S M A N U A L

INTRODUCTION

Congratulations on your selection of the Tracker System 70 Integrated Satellite Receiver Descrambler (IRD). Your Tracker 70 includes advanced electronic circuitry under structured computer control. This type of design reduces the number of components inside the receiver and provides "error-free" programming. The result is a highly sophisticated home satellite receiver system with unrivaled performance, reliability, and ease of operation.

The Tracker 70 combines the receiver, antenna (dish) positioner, and VideoCipher[®] descrambler into one convenient unit. The receiver contains advanced features including satellite and channel access using the system's UHF Xpert[™] remote control, automatic C-Band to Ku-band switching, 100 Favorite Video channels, 100 Favorite Audio channels, MasterTrak[™], FasTrak II[™], Ku-Band VideoSeek[™], QwikPeak[™], full function on-screen displays in either English or North American Spanish, remote control volume adjustment and muting, and multi-mode front panel.

We thank you for your purchase of the Tracker 70, and welcome your comments. We're confident that you'll be pleased with your system's performance, capabilities, and ease of operation for many years to come.

Before proceeding with the basic operation of your Tracker 70, please ensure that it has been properly installed and programmed by a trained dealer.

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EVERY DAY USE

Here is a quick summary for operating your new Tracker 70. Your Tracker 70 must already be properly installed per the instructions in this manual.

POWER ON / OFF

- Press the **[POWER]** button on the remote control or the Front Panel.

SELECTING A SATELLITE:

Once your receiver is programmed, satellite selection may be performed in one of three ways:

1. Using the **[◀][▶]** keys in normal viewing mode.

To enter normal viewing mode, repeatedly press the **[TUNING]** key until no on-screen graphics are displayed. All other **[TUNING]** modes are explained in detail in "Fine Tuning Your Receiver" section beginning on Page 31.

2. Pressing **[SAT]**, then the **[◀][▶]** keys in any mode.
3. Pressing **[SAT]**, then the alphanumeric keypad in any mode.

1. In normal viewing mode, pressing either the **[◀]** or **[▶]** key once will display the current satellite the dish is aimed at. Repeatedly pressing the **[◀]** key will display all satellites to the east of the current satellite. Pressing the **[▶]** key displays all satellites to the west of the current satellite. When the desired satellite name is displayed press **[ENTER]** or wait 3 seconds and the dish will automatically go to the selected satellite.

OR

2. In any Tuning mode, press **[SAT]**, followed by either the **[◀]** or **[▶]** buttons. Repeatedly pressing the **[◀]** key will display the satellites east of the current satellite the receiver is on. The **[▶]** key displays the satellites to the west of the current satellite the receiver is on. When the desired satellite is displayed press **[ENTER]** or wait three seconds and the dish will automatically go to the selected satellite.

OR

3. Press **[SAT]** followed by the two character name and number designator for the desired satellite. Press **[ENTER]** or wait three seconds and the dish will automatically move to the selected satellite. To select GALAXY 1, for example, press **[SAT][G][1]**. (Note that the letters on the remote control's alphanumeric keypad are also used for satellite selection). Satellite name and number designations are listed in most satellite TV program guides as well as in the SATELLITE REFERENCE CHART on Page 60 of this manual.

SELECTING A CHANNEL:

In addition to using either the **CHANNEL [▲]** and **[▼]** buttons on the remote or the **Front Panel [▲]** and **[▼]** buttons, channel selection may be made by direct entry. To select a channel using direct entry, enter the number of the desired channel using the remote control's number keypad. For single digit channels 1 to 9, enter a "0" before the number. For example, press **[0][4]** for channel four.

VOLUME CONTROL:

The **VOLUME** [▲] and [▼] buttons on the remote may be used to adjust the volume to your television (or stereo, if connected). You may also adjust the volume using the **Front Panel** [▲] and [▼] buttons when the receiver is in Front Panel Tuning. If the **VOLUME DISPLAY** has not been disabled (refer to Custom Features: "Custom Options"), the on-screen display will show the volume level as you adjust it.

MUTE:

Pressing **[MUTE]** instantly suppresses the receiver's volume. To restore the original volume level, press either **[MUTE]** or one of the **VOLUME** buttons.

VIEW:

Pressing **[VIEW]** on the remote displays the satellite's name and number, the channel that the receiver is tuned to, and the current time of day. If the current program is from a subscription service or if it is a VideoCipher^R scrambled channel, pressing view may also display the current program's name, audio type, program supplier, and other related information.

SWITCHABLE GRAPHICS:

To switch the black border of the on-screen display **ON** and **OFF**, press **[MENU][6][1]**.

SELECT SPANISH / ENGLISH LANGUAGE FOR MENUS:

Most on-screen graphics are available in either English or Spanish languages.

To change languages:

- You must be in normal viewing mode.
- Press **[MENU][8][6]**. A menu will be displayed to select English or Spanish language.
- Press **[1]** for English, or **[2]** for Spanish. The on-screen displays will switch to the selected language.

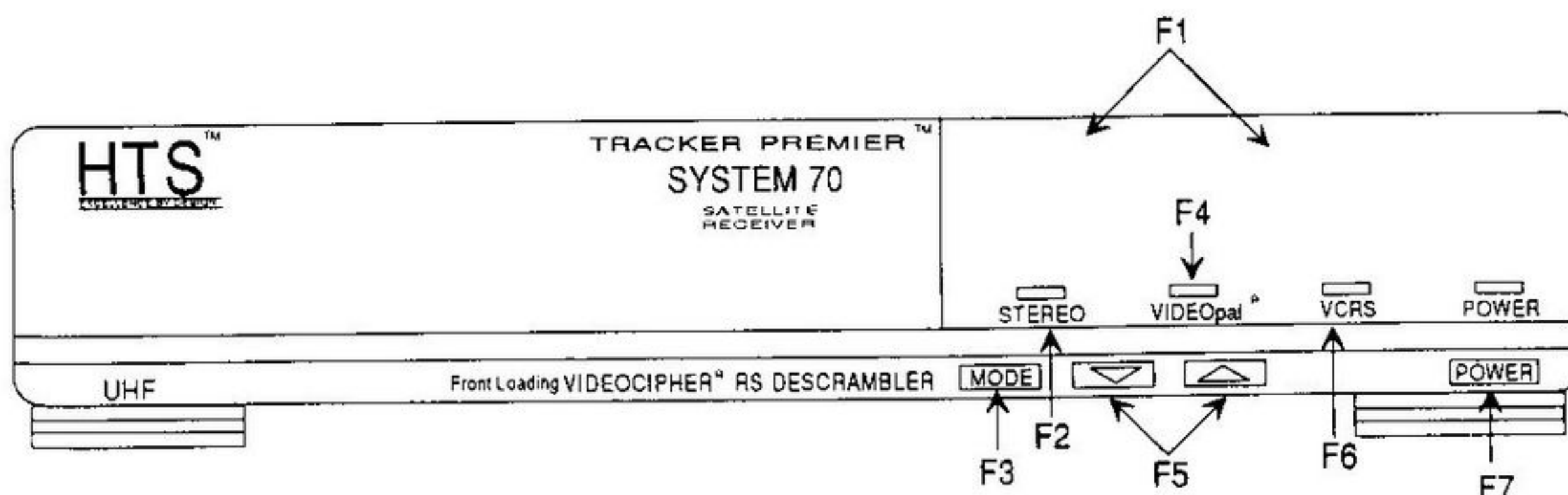
FAVORITE CHANNELS:

Your Tracker 70 comes pre-programmed with up to 100 Favorite Videos and 100 Favorite Audios.

To select a favorite video or audio:

- Press **[FAVORITE]** ONCE for Favorite Videos, TWICE for Favorite Audios.
- If you know the Favorite Video/Audio number, enter it with the numeric keypad, then press **[ENTER]**. The receiver will automatically move the dish to the correct satellite and channel.
- If you do not know the Favorite Video/Audio and want to view the lists press **[ENTER]**, then press **[ENTER]** again and select **ALL**. The favorite list will now be displayed.
- The [◀][▶] keys will scroll through the list to the desired Favorite Channel, then press **[ENTER]**.

FRONT PANEL DESCRIPTION



F1: LIGHT EMITTING DIODE (LED) DISPLAY PANEL

When the receiver is in the normal viewing mode, this display shows the current satellite designator and channel, as well as the actuator motor counts. When the receiver's power is **OFF**, the display will show the time if this option is selected in Custom Features.

F2: STEREO

This LED lights up when your receiver is tuned to stereo audio.

F3: MODE

Pressing this button will select the Front Panel Mode. When the receiver is in this mode, pressing the mode button again will select the next available option. The [▲][▼] buttons change the state of that option. For more information see "Front Panel Tuning" on Page 30.

F4: VIDEOpal[®] SIGNAL INDICATOR

When this light is **ON**, your receiver is equipped with a descrambler module with built-in VIDEOpal order recorder for purchasing pay-per-view events on specially designated channels.

F5: [▲ / ▼]

These buttons are used to select the next channel up or down. If the receiver is in the Front Panel Mode these buttons will either switch (toggle) the current option or perform fine tuning adjustments.

F6: Videocipher[®] Signal Indicator

This indicator turns **ON** when the Tracker 70 is receiving a VideoCipher signal.

F7: POWER

When this button is pressed, power is switched **ON** and **OFF** (continuous power is supplied to the LNB, microprocessor and memory). Memory will not be lost in the event of a power failure, or when the unit is unplugged for as long as one year. (Power may also be turned **ON** and **OFF** from the remote control.) If the receiver is in Front Panel Mode, the [POWER] button will remove the on-screen graphics and return to normal viewing.

REMOTE CONTROL DESCRIPTION

The Tracker 70 comes equipped with the new XPERT™ UHF Remote Control that has a range of up to 200 feet. New features include multiple addressability, menu, and "speed" functions. The following describes all the remote key functions in the XPERT Remote.

R1: LEDs

In the various modes of operation, you will observe several different illumination patterns being emitted by the LEDs.

R2: [POWER]

Turns the satellite receiver on and off.

R3: Alphanumeric Keypad [0-9]

Used for channel and satellite selection, programming, password entry, speed keys, and entering special operation codes. The letter designation is used to access satellites and more commonly used features. For example, satellite **GALAXY 2** is [SAT] [G] [2], the [G] key is also the numeral [1] key.

R4: [FAVORITE]

Selects a Favorite Video or Favorite Audio program. Press the button once for Favorite Video selection or twice for Favorite Audio selection. Refer to Page 19 for details.

R5: [CANCEL]

Cancels an entry made by mistake, stops the execution of an operation such as searching for a satellite, or recalls the previous screen.

R6: [CHANNEL ▲] [CHANNEL ▼]

Used to change channels sequentially and to scroll through Favorite Lists.

R7: [◀] [▶]

In the VIDEO and AUDIO tuning modes, they select the tuning frequencies. In the DISH tuning mode, these buttons move the dish east [▶] and west [◀], respectively. During normal operation these buttons select satellites east or west. These keys are also used to move the cursor position when programming different features of your system.

R8: [ENTER]

After an operation or special feature has been keyed-in, pressing [ENTER] completes the entry and informs the satellite receiver to execute your instruction. Most on-screen displays will request that you press [ENTER] to confirm your selections.

R9: [TUNING]

Selects between the VIEW, VIDEO, AUDIO, DISH and POLARITY tuning modes. Press this key repeatedly until the desired tuning mode is displayed.

R10: [MENU]

Allows you to enter direct access codes. Pressing [MENU] twice displays the direct access code menus.

R11: [VOLUME ▲] [VOLUME ▼]

Increases or decreases the volume.

R12: [STORE]

Saves programmed information into memory and activates the receiver's automatic signal tuning routine when the receiver is in either Dish or Polarity tuning.

Do not use a sharp object that could damage the recessed rubber button. We recommend using a finger nail, car key, the round end of a paper clip, or other blunt-tipped instrument.

R13: [ADDR]

This new feature programs the satellite receiver to block out incoming signals from other UHF remotes in your home or neighborhood. This is very useful if you have UHF interference in your area. Refer to Page 56 for how to activate this feature.

R14: Descrambler Control Keys

Controls the operation of the descrambler module when the receiver is tuned to a VideoCipher^R channel. See Page 22 for more details.

R15: [STEREO/MUTE]

Suppresses the volume to your TV and displays "muted" on-screen, until the button is depressed again restoring normal volume level. When the receiver is in Audio Tuning, this key selects between monaural or discrete stereo.

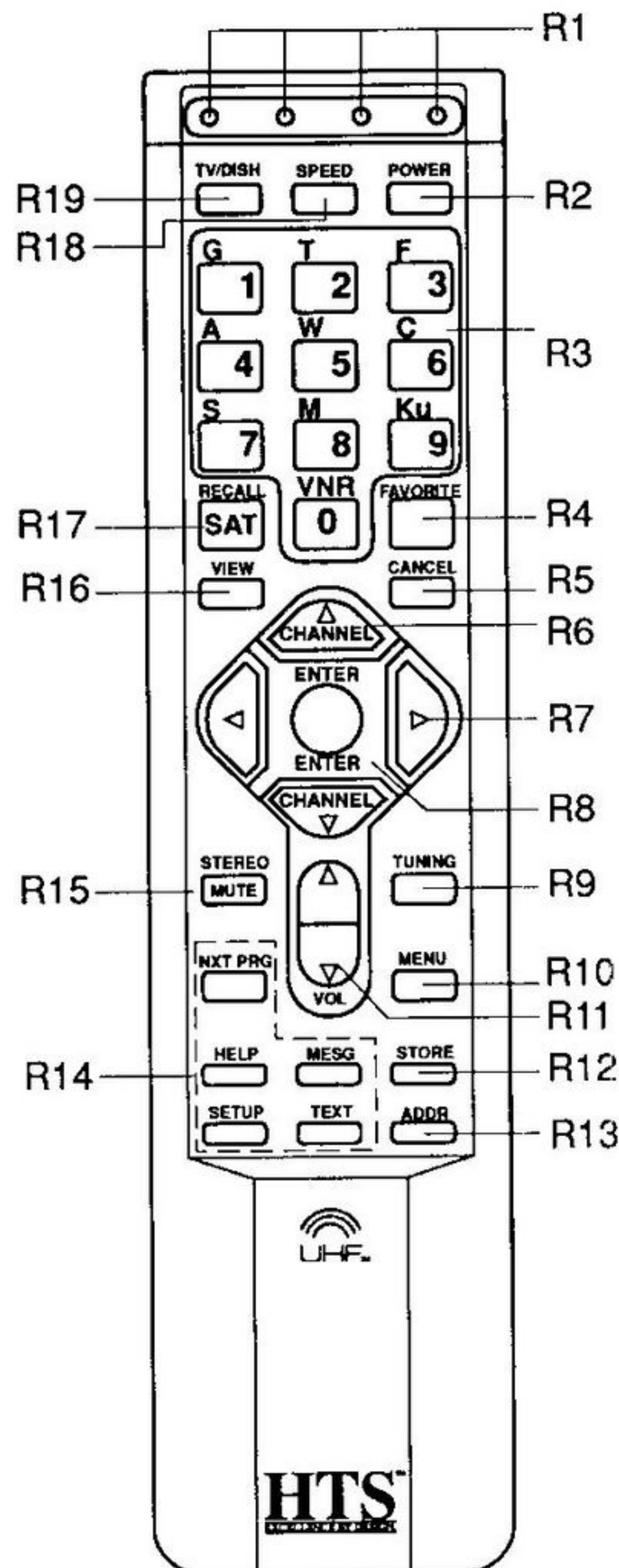
R16: [VIEW]

Displays an on-screen graphic showing the name of the satellite and channel you're watching, as well as the current time. If a menu is being displayed, pressing [VIEW] will erase the menu and return to normal viewing.

NOTE: *If you are experiencing problems with your XPERT remote, you may need to reset (clear) the remote's memory. Please see Page 57 for instructions.*

R17: [SAT/RECALL]

Selects either a new satellite or the last tuned channel on the current satellite. Press once to enter a new satellite selection using the alphanumeric keypad. Press twice to re-display the last channel you were watching on the current satellite. This is useful if you want to monitor two channels on the same satellite.



R18: [SPEED]

Enables the numeric keys [0-9] to be programmed with a series of up to 5 keystrokes. This programmed key sequence will be automatically transmitted each time the numeric speed key is used. This is especially useful in reducing the number of keystrokes on a frequently used feature of the receiver. NOTE: The [STORE] key cannot be used within the sequence of keystrokes. The [STORE] key can only be used to signal the end of a key sequence.

To program a speed key:

- Press [SPEED]. Observe the rapid flashing of the LED, located at the top of the remote.
- Press [STORE].
- Press one of the numeric keys [0-9], the LEDs will flash twice.
- Enter the key sequence, up to a maximum of 5 keystrokes. *It is necessary to pause momentarily between keystrokes to enable the remote to transmit each keystroke.*
- Press [STORE]. The LEDs will flash twice, indicating the programming process is complete.

To use a programmed speed key:

1. Press [SPEED]. Observe the flashing of the LED.
2. Press the desired programmed numeric key [0-9]. The receiver will automatically perform the programmed sequence of keystrokes.

To erase a programmed speed key:

1. Press [SPEED]. Observe the rapid flashing of the LED.
2. Press [STORE].
3. Press the numeric key [0-9] to be erased. The LEDs will flash twice as when programming a speed key.
4. Press [STORE]. The LEDs will again flash twice, indicating the successful reprogramming of the speed key.

EXAMPLE

To store a Channel Mask / Unmask speed function: (Channel Mask is described on Page 34.)

Press:

1. [SPEED]
2. [STORE]
3. [0-9]
4. [CANCEL] Cancel clears any Tuning mode the receiver may be in.
5. [TUNING] Puts the receiver in Video Tuning mode.
6. [MENU]
7. [8][7] Direct Access Code to toggle Channel Mask / Unmask.
8. [STORE]

To use this speed function, simply press [SPEED], then the number [0-9] that you selected in STEP 3. The channel that the receiver is currently on will automatically become "masked". To unmask the current channel simply press [SPEED] and the selected number.

R19: [TV/DISH]

Selects the signal source fed to the TV, switching between the satellite dish and the TV antenna.

EASY ACCESS CODES

The following chart lists all of the easy access user codes that are available in the Tracker 70. You can also access an easy access code list with your receiver's on-screen display.

To display the easy access code menus:

- Press **[MENU][MENU]**.
- All of the access codes are not displayed at one time. To display more access codes press **[MENU]** repeatedly or you may scroll through the list with the **[▲][▼]** buttons.

To use an easy access code function:

- Display the Easy Access Codes as shown above. Scroll **[▲][▼]** to the desired code. When the arrow cursor (→) is pointing at the desired code, press **[ENTER]**. *NOTE: The receiver must be in the correct Tuning Mode for the code to be activated.*

OR

- Press the **[TUNING SELECT]** button until you are in the proper mode.
NOTE: The on-screen graphics only show the first letter that corresponds to the mode. For example, Video Tuning is indicated with a "V".
- Press **[MENU]**.
- Enter the desired easy access code number.

CODE:	FUNCTION:	MODE:
43	QwikPeak	DISH
45	Audio Width (switch: Wide / Narrow Audio Bandwidth)	AUDIO
46	Audio Feed-through	AUDIO
47	Audio Source (switch: Internal / External Audio Source)	AUDIO
48	Audio Scan / Step	AUDIO
55	Automatic Dish Peaking	DISH
61	Change Graphics (switch: Black graphics border On / Off)	Normal
63	Custom Features	Normal
65	VNR On / Off while storing a satellite	DISH
66	Auto Seek Peak (toggle: On / Off)	DISH
67	Transponder / Channel Scan	DISH
72	Signal Toggle (switch: Normal / Inverted Video)	VIDEO
73	Signal Filter (switch: Baseband Filter Off / On)	VIDEO
74	Sub-carrier Audio	Normal / Audio
75	Ku VideoSeek (switch: Video Seek On / Off)	VIDEO
77	Signal Source (switch: Internal / External Video)	VIDEO
78	Video Frequency / Center Tuned Offset	VIDEO
86	Language Select (select: English / Spanish Language)	Normal
87	Mask Set (switch: Channel Mask On / Off)	VIDEO
89	Mask Defeat (unmask any channel on current satellite)	VIDEO
91	Dealer Screen - This screen provides service information	Normal
93	Diagnostic Screens	Normal
95	VCR Interrupt	Normal
99	TI Filter (switch: On / Off)	Normal/Video*
00	VNR™ (On/Off) (pressing [MENU] first is not required for VNR)	Normal/Video*

* The TI Filter and VNR options will switch ON / OFF in either the normal viewing mode or Video Tuning. However, to **[STORE]** these features, the receiver must be in Video Tuning. The asterisk is also shown on the Easy Access Code menu.

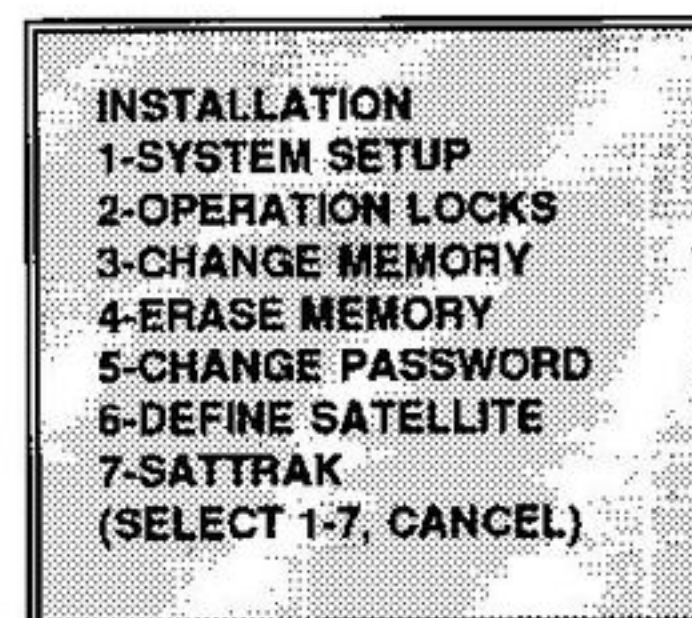
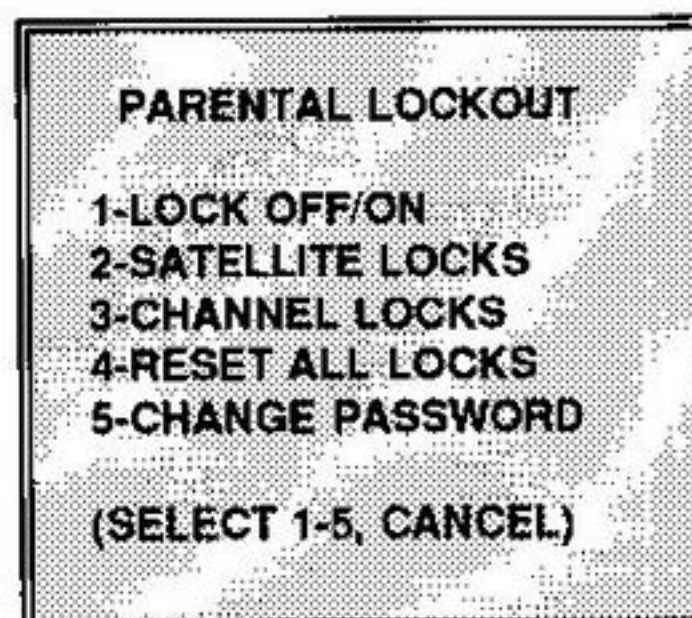
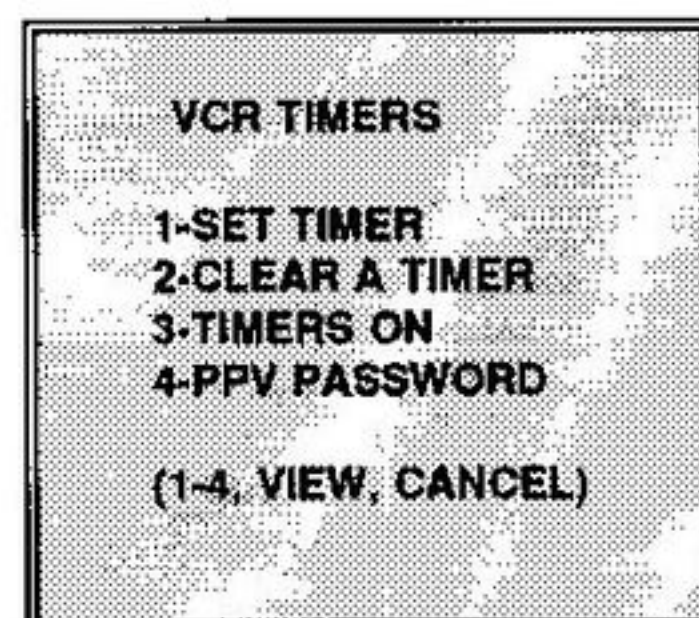
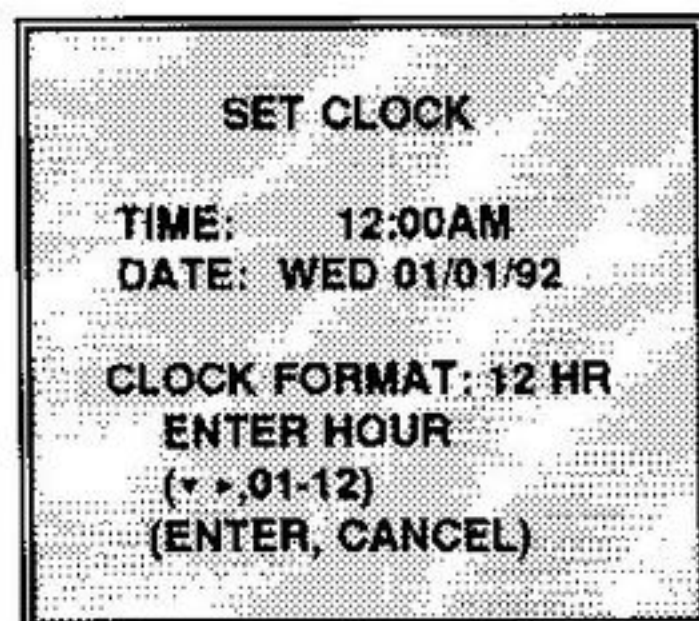
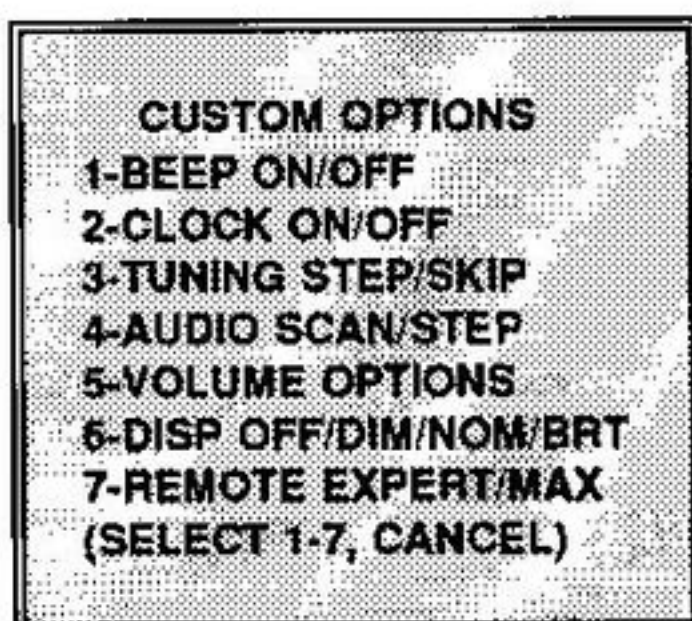
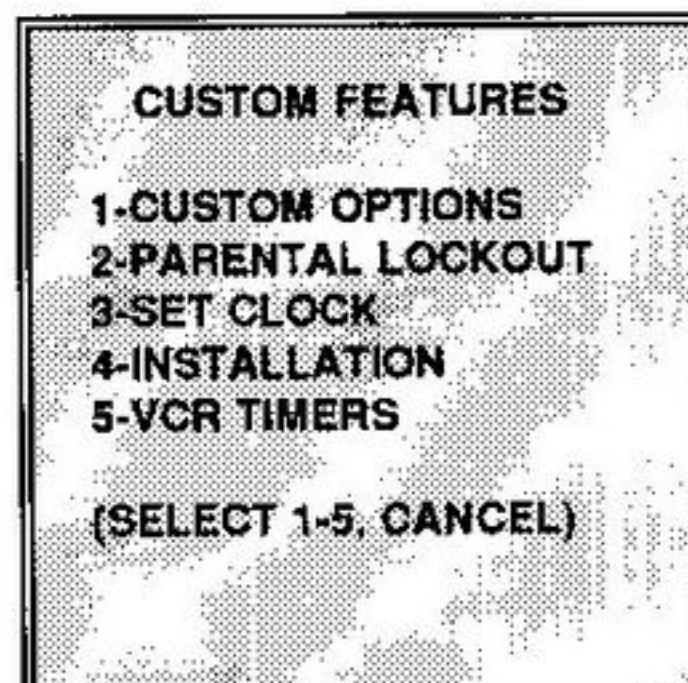
CUSTOM FEATURES

SEQUENCE OF MENU SCREENS

Pressing **[MENU][6][3]** on your remote control accesses "menu-driven" Custom Features options. An illustration of the Custom Features main menu is shown on the right.

Selecting any one of these options will display another screen, or set of screens that allow you to select the desired features or functions. The "menu tree" on this page shows how each of the Custom Feature options are displayed.

With the exception of option number four, "Installation", each of these Custom Features are discussed in this section. A "HOW TO" section is included after each functional description. The Installation option is discussed in Part 3 of this manual.



Custom Features OPTION 1: **CUSTOM OPTIONS**



1. BEEP ON/OFF

- Your Tracker 70 comes with the audio "beep" set **ON**. To turn it **OFF**, simply press **[1]** on your remote.

2. CLOCK ON/OFF

The on-screen and front panel clocks will be shown when most on screen graphics are displayed, and when your Tracker 70 is turned **OFF**.

- Your Tracker 70 comes with the clock turned **ON**. If you prefer not to see the clock, press **[2]** on your remote.

3. TUNING STEP/SKIP

STEP TUNING allows sequential channel selection with the **CHANNEL [▲]/[▼]** buttons. **SKIP TUNING** "skips" every other channel.

The "skip" feature is very practical because it reduces motor wear by first selecting all the channels of one polarity (horizontal or vertical) before switching to the opposite polarity.

- Press **[3]** to switch from **STEP** tuning mode to **SKIP** tuning mode.

4. AUDIO SCAN/STEP

Audio **SCAN** automatically seeks to the next higher or lower audio subcarrier when either the **LEFT [◀]** or **RIGHT [▶]** **TUNING** buttons are pressed. **AUDIO STEP** mode allows manual adjustment in .005 MHZ increments.

- Press **[4]** on your remote to switch from Audio **SCAN** to Audio **STEP**.

5. VOLUME OPTIONS

If you select option **[5]** from the Custom Options menu, a new screen (at right) allows you to make the following selections.

a. VOLUME DISPLAY ON/OFF

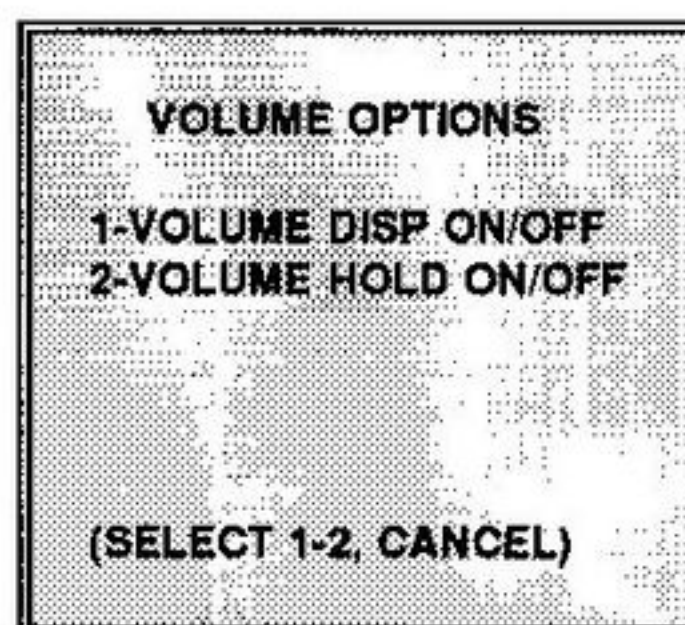
This turns **ON** or **OFF** the volume level on-screen display.

- Press **[1]** on your remote to turn **OFF** the Volume Display option.

b. VOLUME HOLD ON/OFF

When **ON**, the receiver will "power up" to the same volume level as when last used. When **OFF**, volume level defaults to 30 percent upon "power up".

- Press **[2]** on your remote to turn **OFF** the Volume Hold option.



FRONT PANEL TUNING

Front Panel Tuning allows you to operate your receiver and make fine tuning adjustments without the aid of your remote control. This is useful if the remote control has been moved out of reach or is temporarily out of service (if the battery goes dead).

To access the Front Panel Mode, press the **[MODE]** button on the receiver's front panel. The receiver must be in the normal viewing mode (or **[VIEW]** mode). A list of several options will appear on the screen. To move from one option to the next, press the **[MODE]** button repeatedly. Once the on-screen prompt (right arrow symbol) is pointing to the option you want, use the **[▲ / ▼]** button (also on the front panel) to either fine tune or switch the option, or make the desired selection. The **[POWER]** button returns the receiver to normal operation. (Pressing **[POWER]** on the remote control will also exit the receiver from the Front Panel Mode.)

FRONT PANEL LIST LENGTH:

SHORT/LONG

The "Front Panel List Length" Custom Feature allows you to choose which options will be available when the receiver is in the Front Panel Mode. The "short" selection gives you five options in the Front Panel Mode, the "long" selection gives you ten. The first five (short) Front Panel Mode options provide for basic operations and Favorite Channel selection. The additional options available in the "long" Front Panel Mode duplicate fine tuning adjustments and changes available in the receiver's tuning modes. Because of this duplication, the description of these options and instructions for using them are included in the next section: "Fine Tuning Your Receiver." (Page 31).

Your receiver is set at the factory with the "short" front panel list. If you wish to change the selection to "long," press **[MENU][6][3], [4]**, key-in the password, and then enter **[2].[4]**. The "SHORT" front panel mode options are:

- 1) Channel selection
- 2) Volume adjustment
- 3) Satellite selection
- 4) Favorite Video
- 5) Favorite Audio

The "LONG" front panel mode options are:

- 1) Channel selection
- 2) Volume adjustment
- 3) Satellite selection
- 4) Favorite Video
- 5) Favorite Audio
- 6) Video: Center Tuned
- 7) Audio A (Left)
- 8) Audio B (Right)
- 9) Polarity Tuning
- 10) Dish Tuning

FINE TUNING YOUR RECEIVER

The following operations provide fine tuning for the video and audio frequencies, as well as dish and polarity adjustments. Each fine tuning operation requires the receiver to be in one of four tuning selections: VIDEO, AUDIO, DISH, or POLARITY. This section includes instructions for using several "easy access" codes associated with the tuning options. All of these codes can be referenced in a table on Page 11 or by pressing **[MENU] [MENU]** on your remote.

Repeatedly pressing the **[TUNING]** button on your remote will access the different tuning selections. Once the receiver is in a tuning mode, adjustments can be made by using the **[◀] [▶]** buttons. If no tuning adjustment is made in 30 seconds, the on-screen display will disappear but graphics will be re-displayed if a key is pressed. To return to normal viewing mode, press **[CANCEL]**.

"LOCKED" FINE TUNING

To prevent important tuning parameters from being accidentally changed, both the **[STORE]** and **[TUNING]** buttons can be "locked". When **[STORE]** is locked the receiver's memory cannot be changed. When **[TUNING]** is locked the receiver will not access DISH or POLARITY TUNING. Complete instructions for locking and unlocking these keys are described in "INSTALLATIONS OPTIONS: OPERATION LOCKS" on Page 52.

SPEED STORE

Normally you will need to press **[STORE]** to save any tuning changes and special options in the Tracker 70's memory. If you do not press **[STORE]** any changes made (regardless of the channel) will be lost when you select another satellite. If you are making a number of fine tuning adjustments (perhaps during the initial setup of your system) you can bypass the need to press **[STORE]** for every set of tuning changes made on a satellite.

To turn speed store on and off:

- Press **[MENU] [6] [3]** then **[4]**.
- Enter your installation password. If a password is not set press **[ENTER]**.
- Press **[2]** for Operation Locks.
- Press **[3]** to turn SPEED STORE ON or OFF.

Normally SPEED STORE should be kept **OFF** to prevent accidental changes to be stored in memory.

VIDEO TUNING

This tuning selection is used to fine tune the video quality. In Video Tuning, the display (left) will show the difference between the actual frequency and the "center tuned" frequency.

To adjust the video tuning:

- Press the **[◀]** button to lower the video frequency.
- Press the **[▶]** button to raise the video frequency.
- Press **[STORE]** to permanently save any changes.



In Video Tuning, the frequency is displayed as an offset frequency from the center tuned frequency. To display the actual downlink signal frequency, press **[MENU][7][8]**.

If a "noisy" picture exists, use the **[◀][▶]** buttons to "fine tune" the video. A "noisy" picture is one with an uneven amount of "sparkles", or light and dark flashes racing horizontally across the screen. Noisy pictures may be the result of either terrestrial interference (TI) or a slight offset in the video tuning frequency.

VNR: [0][0] TI Filter: [MENU][9][9]

The VNR™ (Video Noise Reduction) and Terrestrial Interference (TI) filter options provide further improvement to noisy pictures. Special filters help to eliminate the effects of TI usually caused by nearby telephone or microwave towers. By "experimenting" with the video tuning and both the VNR and TI options, you may eliminate most video noise on a particular channel.

NOTE: The TI Filter is an option in the Tracker 70. If your receiver is not equipped with this option you will only be able to use the VNR feature. Check with your dealer for more information about the benefits of installing a TI filter in your particular location.

To switch VNR and TI on and off:

- Press **[0][0]** to switch **VNR ON / OFF**.
When ON, the on-screen display will show "VNR" below the channel designator.
- Press **[MENU][9][9]** to switch **TI ON / OFF**.
When ON, the display will show "TI" below the channel designator.

VNR and TI can be accessed in any tuning mode, but to permanently store it in memory you must be in VIDEO TUNING mode and press **[STORE]**. Depending on the "FILTER" selections, VNR and TI are either stored on the current channel only, on the same channel on every satellite, or on every channel on a given satellite. Refer to "Installation Options: System Setup" in Part 3 of this manual.

For further improvement in the video quality you may need to adjust the Dielectric Resonator Oscillator (DRO) located in the LNB. (Refer to "Installation Options: System Setup" Pages 51-52).

VIDEO OPTIONS

In addition to fine tuning and the VNR / TI Filter selections, there are four other options that are closely associated with the video portion of your receiver. These options are: Normal/inverted Video; Baseband Filter On/Off; External Video On/Off; and Ku VideoSeek. To make the "switched" selection permanent you must press **[STORE]**.

Normal / Inverted Video: [MENU][7][2]

Since some broadcasters transmit an inverted signal, it may be necessary to reverse the signal. If you cannot receive an "open" (not a scrambled channel), it may be necessary to use this option.

Ku VideoSeek: [MENU][7][5]

The Ku VideoSeek feature automatically scans through Ku-band transponders to locate video programs. Your receiver pre-programmed with VideoSeek turned **ON**.

To turn Ku Videoseek off/on:

- Tune to a Ku-band satellite and channel.
- Make sure the receiver is in **VIDEO TUNING** (press **[TUNING]**).
- Press **[MENU][7][5]** to switch VideoSeek **OFF/ON**. "SEEK OFF" / "SEEK ON" will show on your on-screen display.

To use Ku Videoseek:

- Press **CHANNEL** [**▲**][**▼**] once to scan the current transponder.
- Pressing **CHANNEL** again will change transponders.

Channel Masking: (toggle On/Off for current channel):

[MENU][8][7]

Mask Defeat: (for all channels on current satellite): [MENU][8][9]

Channel Masking causes the receiver to bypass channels when the **CHANNEL** [**▲**][**▼**] buttons are pressed, while continuing to allow direct entry. Channel Masking is particularly useful for scanning satellites that have a number of "inactive" channels. This feature can also be accessed in normal viewing mode.

To mask/unmask a channel:

- Make sure the receiver is in Video Tuning (press **[TUNING]**).
- Select the desired channel to mask.
- Press **[MENU][8][7]**. The masked channel will be skipped when using the **CHANNEL** [**▲**][**▼**] buttons. Press **[MENU][8][7]** again to unmask the current channel.

To unmask all channels on a satellite:

- Press **[MENU][8][9]**. All masked channels on the current satellite will become "unmasked".

AUDIO TUNING

Audio Tuning is used to adjust the audio frequency of individual channels, as well as to select secondary audio subcarriers. Consult a satellite programming guide to determine the correct type of audio for a particular program. The following functions are only operational when the receiver is in Audio Tuning. Press the **[TUNING]** button until you reach Audio Tuning.

Once the receiver is in Audio Tuning, the on-screen display (top of next page) will show the pre-programmed audio frequency for that channel.

DISH TUNING

Dish Tuning is used to move the antenna east or west when programming new satellites, or to repeak both the feedhorn polarity and dish position for previously programmed satellites. Instructions for programming new satellites are included in Part 3 of this manual, so the following description only applies to the repeak operation.

To re-peak the dish:

- Make sure the receiver is in Dish Tuning (press **[TUNING]**).
- Press **[STORE]**.

The Tracker 70 will first repeak the polarity of the current channel and then optimize the antenna position for the current satellite. Channels of the opposite polarity and the dish positioning of other satellites will not be affected.

Automatic Dish Peaking: [MENU][5][5]

If you wish to repeak the dish position for maximum signal strength, without adjusting the polarity, press **[MENU][5][5]** while the receiver is in Dish Tuning.

QwikPeak: [MENU][4][3]

QwikPeak peaks polarity and dish tuning on every satellite in the arc. The process takes a few minutes, depending on how many satellites are stored in your receiver. Press **[MENU][4][3]** to access the QwikPeak Menu. We recommend using this feature occasionally to maintain the best reception from your satellite system.

Automatic Peak: [MENU][6][6]

When moving from one satellite to another, dish peaking can be automatically performed when the receiver has reached its destination satellite. To turn this feature ON/OFF, press **[MENU][6][6]** in Dish Tuning mode.

POLARITY TUNING

Polarity Tuning is used to adjust the feedhorn polarity for all channels of the same polarity on the current satellite.

Polarity Tuning will optimize the polarization for the current channel, as well as other channels having the same polarity; that is, either all odd-numbered or all even-numbered channels on the current satellite.

To tune the polarity:

- Make sure the receiver is in Polarity Tuning and on the correct channel.
- Press **[STORE]**.

SYSTEM INSTALLATION

IMPORTANT: This installation procedure is **not** intended to provide a tutorial on satellite system installations. **The installation should only be performed by a qualified technician with a thorough knowledge of satellite television components and installations.** An excellent reference source for satellite system installations is: *The Home Satellite TV Installation & Troubleshooting Manual*, by Frank Baylin and Brent Gale; available by writing or calling Baylin/Gale Productions, 1905 Mariposa, Suite 110, Boulder, Colorado, 80302; (303) 449-4551).

The wiring installation must conform to either the National Electrical Code for Class 2 or 3 wiring, or the Canadian Electrical Code (if the unit is installed in Canada). [Effectuer le cablage conformement au code Canadien de l'electricite.] Installation must be performed by a qualified person.

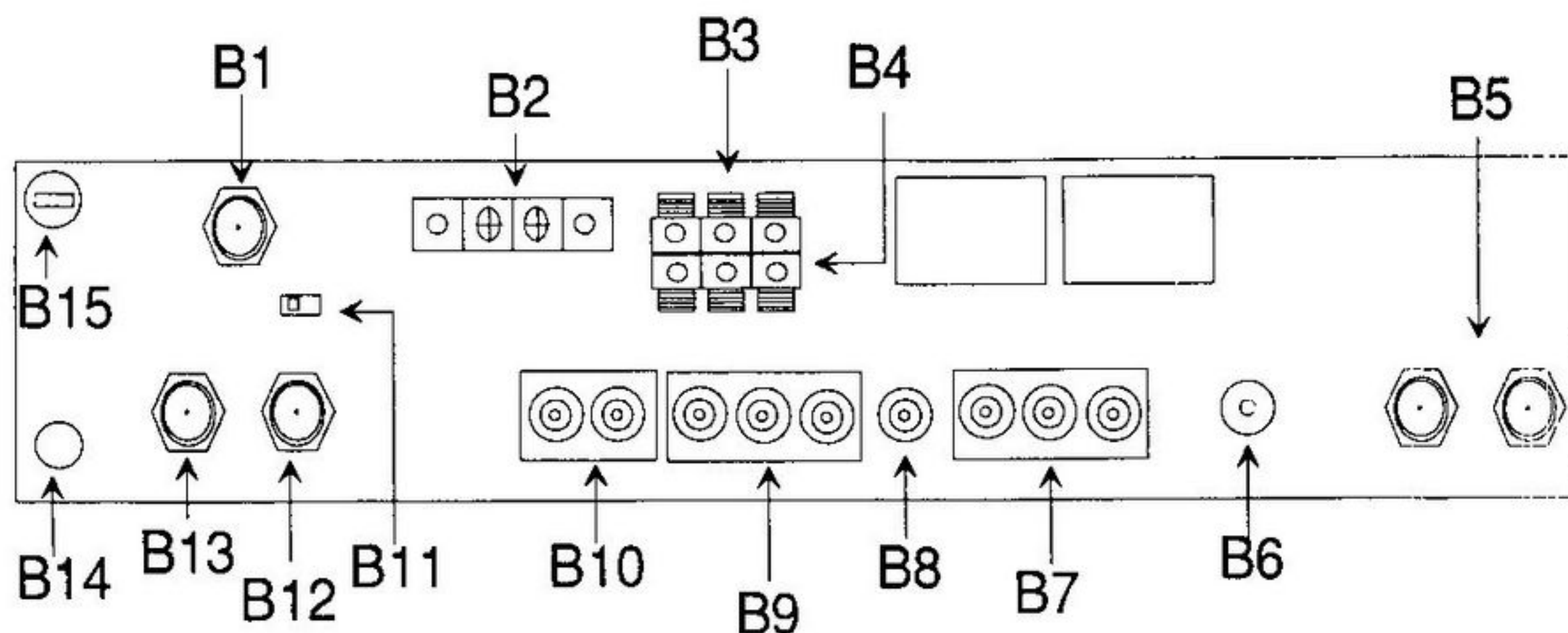
CAUTION

- Do **not** plug the receiver into an AC power source until all connections have been made.
- Do **not** disconnect the ground terminal on the AC power cord. Disconnecting this terminal will void your warranty, and may damage the receiver or result in unreliable operation.
- Potentially damaging input line voltage surges can occur during lightning storms. This can happen when inductive loads such as air conditioners are switched **on** and **off**. Since these external conditions can affect the performance of your IRD, a transient voltage surge suppressor rated for three way protection against input line voltage surges is recommended. Surge suppressors with ratings per UL 1449 and ANSI C 62.1 are recommended. These can be purchased from your local radio and TV supply store.

Note to System Installer

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

BACK PANEL DESCRIPTION



B1: REMOTE CONTROL ANTENNA CONNECTOR

This connector is for the six inch "whip" antenna supplied with your receiver. The antenna receives signals from the UHF remote control(s), and should be oriented vertically with no wires or other objects touching it.

B2: ACTUATOR MOTOR TERMINAL STRIP

These terminals are used to attach the actuator motor wires.

B3: POLARITY SERVO TERMINALS

These terminals are used to attach the polarizer servo motor control wires. On dual C/Ku-Band installations with dual servo motors, both sets of wires may be connected here.

B4: MOTOR SENSOR TERMINAL STRIP

These terminals are used to attach the actuator motor sensor wires.

B5: BLOCK DOWN CONVERTER IF INPUTS

These inputs are provided to connect the receiver to the LNB(s) or BDC(s) at the dish. Connection is made to the HOR/C-BAND input when using a single C-Band servo type feedhorn. Connections are made to both inputs when using a dual C-Band (no Ku) feed. When installing a C/Ku-Band feed system with dual polarity servo motors, connect the C-Band cable to the HOR/C-band, and the Ku-Band cable to the VERT/Ku-Band. Refer to the installation instructions for various system configurations.

B6: EXTERNAL ACCESSORY

This connector provides power (+12 volts DC) to the C/Ku Band multiplier switch required in dual feed systems.

B7: EXTERNAL INPUTS

These inputs may be used for connecting the receiver to external component such as a descrambler, VCR, stereo, CD player, etc. Connect the external components outputs to these jacks.

B8: BASE BAND OUTPUT

This connector is used to provide baseband video to an external descrambler, and is used in conjunction with the Signal Filter option. (Refer to the Video Tuning Mode instructions in Part 2 of this manual.)

B9: OUTPUTS

These three jacks are used to connect the audio and video outputs of the receiver to the inputs of an external component, such as a video monitor, VCR, or stereo. These outputs supply discrete or VideoCipher digital stereo. However, the audio output will be monaural if the receiver is tuned to a signal being broadcast on a single audio channel.

B10: VIDEOCIPHER ACCESSORY

These jacks are provided for connecting an Instant Pay Per View (IPPV) accessory if you subscribe to PPV programming.

B11: CHANNEL 3/4 SWITCH

This switch directs the modulated output of the satellite receiver to either channel three or four of your television. Select the position that provides the best reception in your area. If you have a local TV station on channel three, select channel four for satellite reception (or vice-versa).

B12: TV SET

Connect your television to this output using a standard coaxial cable. If your system includes an A/V monitor rather than a television, use the VIDEO output instead of the TV SET output.

NOTE: When using the Xpert Remote Control, the [SAT/TV] button will determine whether the TV SET output provides satellite signals, or signals that are input via the TV ANTENNA connector.

B13: TV ANTENNA

Connect your TV antenna to this jack for automatic switching between satellite TV and local TV. When the satellite receiver's power is OFF the television's normal operation will resume, allowing you to tune to local stations.

B14: POWER CORD

This plug should only be connected to a standard 110 volt AC power source.

B15: FUSE

Only replace with a 1.5 AMP 120V fuse (Slow-Blo 3AG).

PROGRAMMING SATELLITES

CAUTION: Prior to setting limits and antenna movement, care must be taken to ensure that the actuator is not allowed to extend or retract to a point where it can lose leverage or run the dish into the ground or nearby objects. The actuator's mechanical limits must be correctly set. The following programming instructions should begin only after the antenna has been accurately set on a polar arc and the correct east-west dish movement has been verified.

The Tracker 70 is pre-programmed with the formats of all commercial satellites broadcasting to North America, as well as the polarity, audio and video frequencies for the active channels on them. Programming the Tracker 70 has never been easier thanks to the new features in the Sat-Trak™ Options described below.

MasterTrak™: After storing an eastern satellite, a middle, and a western satellite, the Tracker 70 sets the East and West Limit, calculates the positions of all the remaining satellites (C and Ku-band) and automatically stores them for you. QwikPeak™ is then performed for dish optimization. Easy to follow on-screen menus guide you through the process. We recommend using MasterTrak for most installation applications. For complete instructions for using MasterTrak, refer to "Programming Satellites Using MasterTrak" on Page 43.

FasTrak II™: Similar to MasterTrak, FasTrak II "predicts" the locations of satellites. The installer manually stores the first three eastern or western satellites. EAST and WEST Limits are manually set. But unlike MasterTrak, FasTrak II requires the installer to press **[STORE]** after each satellite "prediction". FasTrak II is recommended when reception of all North American satellites is limited. The installer can "store" satellites with good reception, and skip the ones with limited reception in your area. (See Page 45.)

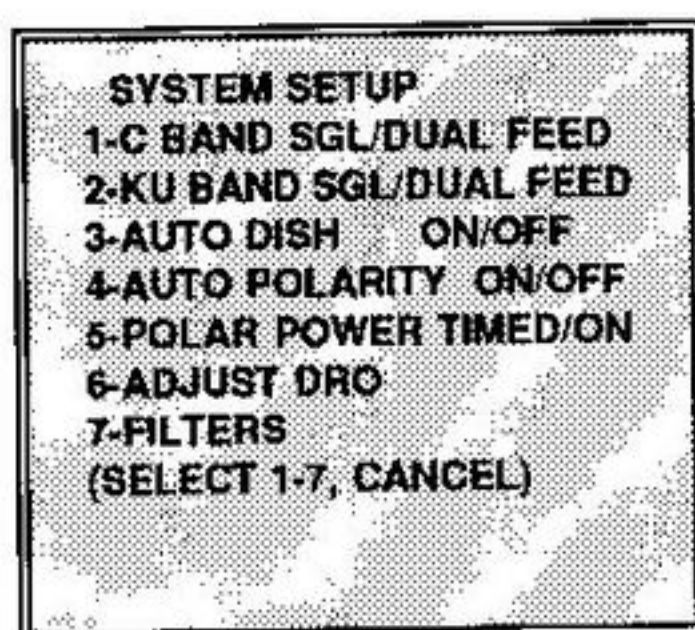
Manual Programming: Satellites can still be stored manually. Programming satellites manually consists of setting the east and west limits, entering the satellite's alphanumeric designator, and locating and storing the satellite. (Refer to Page 47.)

Define Satellite: This feature allows the user to "customize" satellite formats. Band type, number of channels, polarization, and satellite named can all be programmed into the Tracker 70. This feature is especially helpful for programming future satellites yet to be launched. "Define Satellite" is explained on Page 55.

PROGRAMMING SATELLITES cont.

Before programming satellites, your receiver must properly configured in the SYSTEM SETUP screen. It is assumed that the Tracker 70 is properly connected to the antenna and actuator. Please refer to "Installation and Programming: System Installation".

When you first turn the Tracker 70 **ON**, the on-screen graphics will display a Power Up Screen for about five seconds. This screen will disappear and the SYSTEM SETUP screen will be displayed.



This menu is conveniently located here for setting the Tracker 70 to your feedhorn configuration before programming any satellites.

feedhorn configuration:

- The Tracker 70 comes pre-programmed for a SINGLE C-BAND / SINGLE Ku-BAND feedhorn. If this is your configuration, press **[CANCEL]**.
- Press **[1]** if your feedhorn is DUAL C-band.
- Press **[2]** if your feedhorn is DUAL Ku-BAND.
- It is highly recommended that selections **[3] AUTO DISH** and **[4] AUTO POLARITY** remain "ON" during MasterTrak or FasTrak II.
- Press **[CANCEL]** to exit the SYSTEM SETUP menu. The INSTALLATION menu will now be displayed.

NOTE: The System Setup menu is described in detail in "Custom Features: Installation Options" (Page 51) section of this manual.

- To store satellites using either MasterTrak or FasTrak II, press **[7]** for **SAT TRAK**. You will be asked to enter your Installation password to access this screen.

PROGRAMMING SATELLITES USING MASTERTRAK

HINTS / TIPS ON MASTERTRAK AND FASTRAK II: (using a C / Ku feedhorn configuration) FOR MASTERTRAK:

For maximum accuracy on Ku-Band satellite positions, it is highly recommended that you first select and store ALL C-band satellites when using MasterTrak. In the SATTRAK SETUP menu (shown on top of next page) first select C-Band only in the **[1] BAND SELECT** option. When using MasterTrak, perform QwikPeak on the C-Band satellites after they have been located. (This will improve MasterTrak's accuracy when storing Ku-Band satellites.) After this has been performed, select Ku-Band satellites (from **[1] BAND SELECT** in the SATTRAK SETUP menu) and repeat the process.

FOR FASTRAK II:

It is recommended that you first locate and **[STORE]** C-Band satellites first in a east to west direction. Then, using the stored C-band satellites as "markers", store the harder to find Ku-band satellites in a west to east direction.

NOTE: On Dual Ku-band feedhorns (with no C-Band) MasterTrak cannot be performed.


```

SATTRAK SETUP
1-BAND SELECT: C/KU/ALL
SATTRAK OPTIONS
2-MASTERTRAK
3-OWIKPEAK
4-FASTRAK II
5-DIRECTION: E→W/E←W
(1-5, CANCEL)
(CANCEL TO EXIT)

```

The SatTrak Setup menu (at left) is now displayed. Here you are given a selection of options for storing satellites. Before selecting **[2] MASTERTRAK**, selection **[1]** needs to be setup.

Configuring the SatTrak setup menu:

- Press **[1]** to toggle between the satellite types that Calc-Arc will store; C-Band, Ku-Band, or All (both C & Ku-Band). Select the proper band depending on your feedhorn type.
- Press **[2]** for MasterTrak.

```

PLEASE STORE
ALL 3 SATELLITES
(EASTERN, MIDDLE,
AND WESTERN)
THROUGH MASTERTRAK

(ENTER TO PROCEED)
(CANCEL TO EXIT)

```

For MasterTrak to properly "predict" and store satellites, three satellites (an eastern-most, a middle, and the western-most) must be correctly stored manually. You'll be given a choice of selected satellites to locate and store.

- To proceed, press **[ENTER]**.
- To cancel back to the SatTrak Setup menu, press **[CANCEL]**.

NOTE: It is highly recommended that you use a "satellite TV programming guide" for the following procedures. A Satellite Reference Chart is included in this manual on Page 60.

```

(NOT ON SAT)  CH: 5

PUSH SAT TO CHANGE
SAT: SPACENET 2
MOVE TO EASTMOST SAT

DISH: 1000
SIGNAL: 100
(*, CANCEL TO EXIT)

```

The first satellite that the display will prompt you to locate and store will be satellite Spacenet 2. You can choose this satellite to be the eastern-most satellite, or you may choose another.

If you choose Spacenet 2 as the eastmost:

- Using the **[◀][▶]** keys, move the dish to locate Spacenet 2. Use a "satellite TV guide" for verification. When found, press **[STORE]**. The receiver will automatically peak the dish and the polarity and set the EAST LIMIT. (The East Limit is stored approximately 10 "dish counts" east of the eastern-most satellite.)

To select another satellite as the eastmost:

- Press **[SAT]**, then the **[◀][▶]** keys to select another satellite.
- Press **[ENTER]**. The display will now prompt you to locate and store the selected satellite. Use the **[◀][▶]** keys to move the dish to the desired satellite, and when found press **[STORE]**. The receiver will peak the dish and polarity, and set the EAST LIMIT.

In the same manner, the next displays will prompt you to store a middle and western satellite. Follow the same procedure you did when storing the eastern-most satellite. When you store the western satellite, the WEST LIMIT will automatically be stored as well (ten "dish counts" west of the WEST most satellite). You may also choose another satellite to store as your middle and westmost satellites by following the instructions on the previous page.

For MasterTrak to store satellites correctly, it is important that these first three satellites are properly stored. Please use a "satellite program guide" as a reference. If you make a mistake storing one of the first three satellites, it is best to ERASE ALL MEMORY and start over. Refer to "Installation Options: Erase Memory" (Page 54) for instructions.

After the three satellites have been stored, the screen at right will be displayed. MasterTrak is ready to "predict" and store the remaining satellites.

- To store the remaining satellites into the receiver's memory, press **[ENTER]**. "PROCESSING....." will flash on the screen for a few seconds.
- To cancel back to the SAT TRAK SETUP menu, press **[CANCEL]**.

YOU HAVE SELECTED
THE OPTION TO
STORE THE REMAINING
SATS IN THE SELECTED
BAND BASED ON
ARC CALCULATIONS

(ENTER TO CONTINUE)
(CANCEL TO EXIT)

When MasterTrak is completed, the QwikPeak screen will be displayed. It is recommended that QwikPeak be performed at this time to "fine tune" the video reception.

- Press **[ENTER]** for QwikPeak. The process will take a few minutes. The receiver will move and stop at every stored satellite and adjust polarity and "fine tune" the dish.

The MasterTrak feature is complete. All satellites from the selected band(s) are stored in the Tracker 70's memory.

QWIKPEAK

(ENTER) TO BEGIN
(CANCEL) TO EXIT

NOTE: The Tracker 70 is pre-programmed to store all commercial satellites in North America. Depending on your geographical location, you may not be able to receive all of them. You may wish to erase the satellites you are unable to receive by following the instructions in "Installation Options: Erase Memory" on Page 54.

PROGRAMMING SATELLITES USING **FASTRAK II**

Programming satellites is also possible using FasTrak II. This feature also "predicts" the locations of satellites, but the installer must press the **[STORE]** button each time a satellite is found. A minimum of three satellites must be manually stored as well as the East and West limits.

The East Limit must be manually set prior to using FasTrak II.

- If you are in the SATTRAK SETUP menu, press **[CANCEL]**.

```

SATTRAK SETUP
1-BAND SELECT: C/KU/ALL
SATTRAK OPTIONS
2-MASTERTRAK
3-QWIKPEAK
4-FASTRAK II
5-DIRECTION: E→W/E←W
(1-5, CANCEL)
( CANCEL TO EXIT )
  
```

Setting the east limit in FasTrak II:

- Press and hold the **[◀]** key to move the dish east until a "MOTOR ERROR" message is displayed. With the **[▶]** key move the dish 6-10 dish counts to the west and press **[STORE]**. The East Limit is now stored in memory.
- A new screen will display "TO START SATTRAK NOW...". To continue with FasTrak II, press **[ENTER]**.

```

(NOT ON SAT)  CH: 13

SET EAST LIMIT

DISH: 8000
SIGNAL: 100
12:00 AM
  
```

From the SATTRAK SETUP menu, selections **[5]** & **[1]** need to be configured.

- Pressing **[5] DIRECTION**, changes the direction in which FasTrak II stores the satellite arc; east to west, or west to east. Since the dish is presently at the East Limit, leave the direction at **E→W**.
- Pressing **[1]** switches between the satellite types that FasTrak II will program; C-Band, Ku-band, or All (both C and Ku-band). Select the correct band(s) depending on your feedhorn configuration.

```

SATTRAK SETUP
1-BAND SELECT: C/KU/ALL
SATTRAK OPTIONS
2-MASTERTRAK
3-QWIKPEAK
4-FASTRAK II
5-DIRECTION: E→W/E←W
(1-5, CANCEL)
( CANCEL TO EXIT )
  
```

NOTE: On C/Ku-Band feedhorn configurations, it is recommended that you first use FasTrak II to program C-band satellites in an E→W direction, then program the Ku-Band satellites in the W→E direction.

- Select **[4]** for FasTrak II.

The display now will prompt to manually locate and store the satellite Spacenet 2.

- Use the [►] key to move the dish to locate the satellite. When video is seen, verify with a programming guide that you're on the correct satellite.
- Press [STORE]. The receiver will peak the polarity and the dish.
- Locate and store two more satellites in the same way as described above. (A Satellite Reference Chart is included on Page 60.)

```
(NOT ON SAT)    CH: 5

MOVE TO
SAT: SPACENET 2

DISH: 1008
SIGNAL: 110
(◀ ▶, CANCEL TO EXIT)
```

"SKIPPING" AND ERASING SATELLITES IN FASTRAK II

With FasTrak II, you are able to "pick and choose" the satellites to program in your receiver. You may find this desirable if some satellites are out of your reception area.

To "skip" or erase a satellite in FasTrak II:

- When FasTrak II is prompting you to program a satellite you do not wish to store, press [SAT]. The screen will go black.
- Depending on which direction you are storing the arc, use the [◀][►] keys to scroll to the next satellite you wish to store. When found, press [ENTER]. You can now continue with FasTrak II.
- To erase a previously stored satellite, press [SAT], then use the [◀][►] keys to display the desired satellite to erase. At the flashing prompt "(STORE) TO ERASE" press [STORE]. The selected satellite will now be erased.

After manually locating and storing three satellites, FasTrak II will begin to "predict" the locations of the remaining satellites. "MOVE TO" and "(ENTER TO PREDICT)" will flash on the screen. For FasTrak II to locate the next satellite:

- Press [ENTER]. The receiver will automatically move to the next satellite. "MOVING TO" will flash on the screen while the dish is moving. When the dish has stopped moving, FasTrak II has predicted where the next satellite is. It's a good idea to verify (with a programming guide) that you are on the correct satellite.
- Press [STORE]. Polarity and Dish Tuning will automatically be performed.
- Continue the above process; pressing [ENTER] for FasTrak II to predict the location of the next satellite in the arc, then [STORE] to program it in the receiver. "Skip" any undesired satellites. You can program the entire arc in this fashion.
- After storing the west-most satellite in the arc, the WEST LIMIT must be stored. Use the [►] key to move the dish west 6 to 10 counts, then press [STORE].

```
GALAXY 2        CH: 8

MOVE TO
SAT: SATCOM F4

(ENTER TO PREDICT)
DISH: 1078
SIGNAL: 122
(◀ ▶, CANCEL TO EXIT)
```


PROGRAMMING SATELLITES MANUALLY

The Tracker 70 is pre-programmed with the formats of all commercial satellites broadcasting to North America, as well as the polarity, and audio and video frequencies for the active channels on each of them. These formats will automatically be recalled as each satellite is programmed. Programming the Tracker 70 manually consists of setting limits and calling up each satellite and moving to it.

SETTING LIMITS

In order to prevent the dish from moving too far east or west, it is necessary to set the limits to its movement. Upon powering up the unit, first configure the receiver in the SYSTEM SETUP menu. These procedures are explained in detail at the beginning of the "Programming Satellites" section and in "Installation Options".

To begin manually storing satellites, [**CANCEL**] out of the System Setup menu (when configured correctly), then [**CANCEL**] out of the Installation menu. "SET EAST LIMIT" will now flash on the screen.

Setting the east limit:

- Press and hold the [**◀**] button to move the dish east, going slightly beyond the eastern-most satellite. If a "**MOTOR ERROR**" message is displayed, you have moved the dish too far. Use the [**▶**] button and move the dish west 6-10 "dish counts". ("Dish Counts" are shown on the Dish Tuning screen.) Now press [**STORE**]. The receiver will "beep" indicating the East Limit is now stored in memory. The DISH COUNT will default to **1000**.

Setting the west limit:

- Press the [**▶**] **TUNING** button to move the dish to the west limit, going slightly beyond the western-most satellite to be received. If a "**MOTOR ERROR**" message is displayed you have moved the dish too far. Use the [**◀**] button to move the dish back 6-10 dish counts. Press [**STORE**]. The receiver will "beep" indicating the West Limit is now stored.

Once both limits have been set you can move the dish to any position within them. If you move the dish to one of the limits, dish movement will stop and a display will inform you that you cannot move past the stored limit. If it ever becomes necessary to reset the limits, refer to "Custom Features: Installation Options".

MANUALLY PROGRAMMING SATELLITES

When programming satellites, it is necessary to name the satellite to be programmed, prior to locating it. Once the receiver knows which satellite you'll be looking for, you should be able to see and hear the channel when you move the dish in the right direction. The channel number will be displayed on the screen when you name the satellite. It is essential that the satellite being viewed is, in fact, the satellite that has been requested. For this reason it is always a good idea to refer to a current "satellite TV programming" guide to correctly identify the satellite.

The table on Page 60 of this manual lists the satellites whose formats and default channels are pre-programmed into the Tracker 70. It lists the name and number designation that should be entered prior to programming each satellite. (Names and positions of satellites are subject to change. Quite frequently, the guides will continue to use old designators.)

Although your receiver provides a number of pre-programmed satellites, you may not receive broadcasts from all of them. Satellite television reception depends not only on the broadcasters, but on the size of your antenna and your geographical location as well. It is important to make sure you are within a particular satellite's "footprint", or viewing area, prior to trying to locate it.

To manually program a satellite:

- Use the **[TUNING]** button to switch the receiver into this mode. Since the receiver is at the WEST LIMIT, let's store the arc from a WEST to EAST direction.
- Press the **[SAT]** button, within four seconds, enter the letter and number designation of the satellite to be programmed. Start with SATCOM C1, for example, by entering **[SAT][C][1]**. If you are programming a satellite that does not appear in the table on Page 60 of this manual, refer to the "Installation Options: DEFINE SATELLITE" section.
- Use the **[◀][▶]** buttons to move the dish west or east, respectively, until a picture is visible (the picture quality may be poor since the polarization has not been set). Use your programming guide to verify you are on the correct satellite.

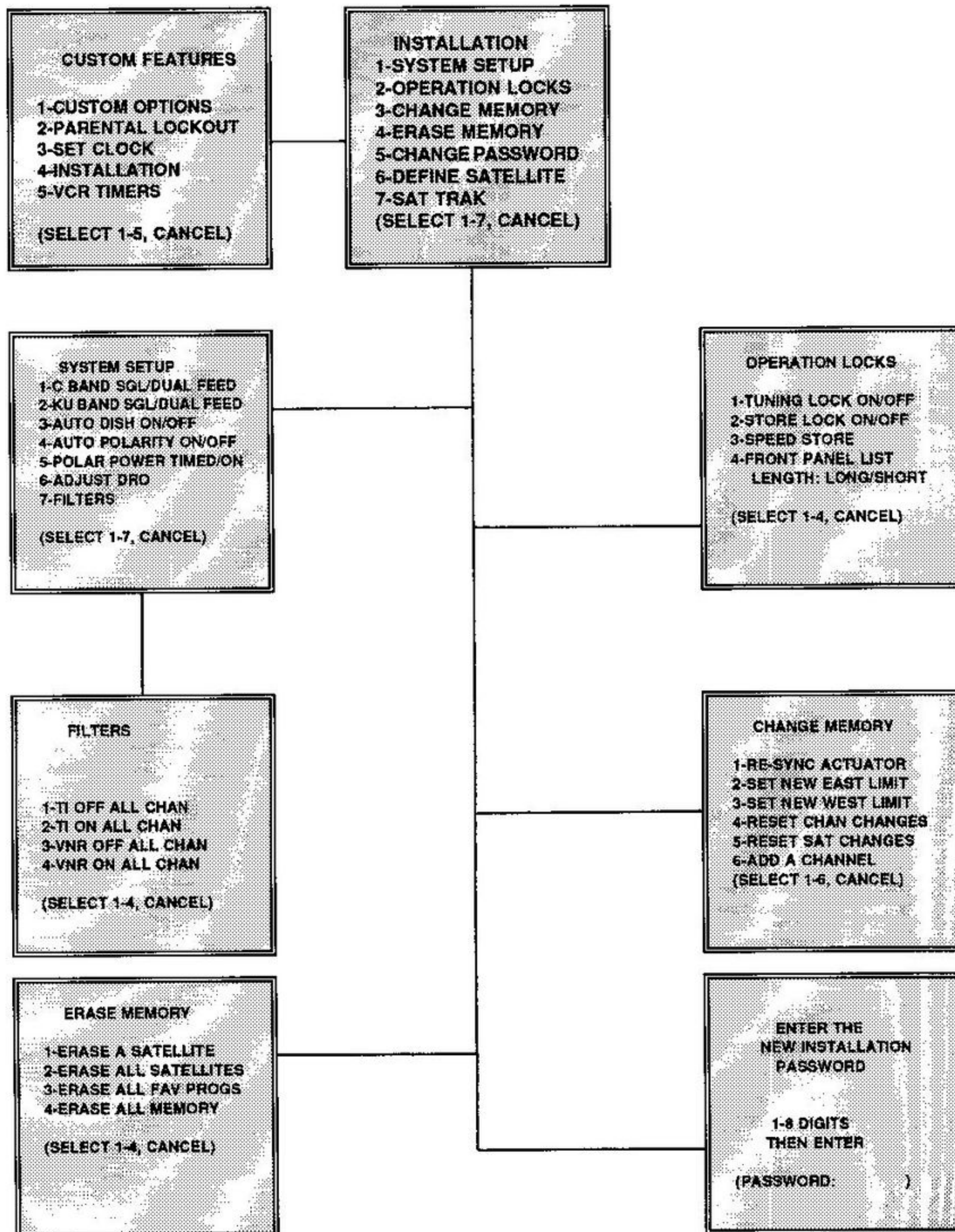
*NOTE: If you have trouble finding a visible channel, it may be helpful to switch the SCAN function (access code **[MENU][6][7]**) on. With SCAN ON, move the dish until some indication of a changing picture occurs. Switch SCAN OFF by keying in **[MENU][6][7]**. Manually change channel to verify that you have located the correct satellite. SCAN should be turned OFF during normal operation.*

As you move the antenna, the front panel display and the on-screen display will show a four-digit number (usually between 1000 and 2000). This "dish count" number may help you position the dish if you note the number as you program each satellite. The count will get smaller when the dish is being moved east, and larger when moved west.

- Once you've located the correct satellite, press **[STORE]**. VNR will be automatically activated when you **[STORE]** a satellite. If you wish to disable VNR during this process, press **[MENU][6][5]**. When **[STORE]** is pressed, polarity and dish peaking will be automatically performed if AUTO DISH and POLARITY have not been turned OFF in the "Installation Options: System Setup".
- If a satellite is stored incorrectly, erase it by accessing the Erase Memory screen under Installation.
- To move a stored satellite, make sure you are in Dish Tuning, press **[SAT]** and the designator number, (e.g. **[SAT][C][1]**), followed quickly by a **[◀][▶]** button. Move the dish until a picture is seen for the selected satellite. Press **[STORE]**. The satellite will now be stored at the new location.
- Repeat the above steps for all the satellites you wish to program. You will not be able to program Ku-band satellites unless your system is equipped with a Ku-band feedhorn and LNB.

When all of the satellites have been programmed, press **[CANCEL]** to exit Dish Tuning. When the receiver is in normal viewing, any of the programmed satellites may be recalled by pressing the **[SAT]** button, followed by the satellite's name and number designation or **[SAT]** and the **[◀]** or **[▶]** to scroll through the list of stored satellites.

CUSTOM FEATURES: INSTALLATION OPTIONS



SYSTEM SETUP

The SYSTEM SETUP option allows you to customize your receiver to match the system configuration, as well as select important tuning options. Some of these selections will "switch" the option setting, while others will present additional displays, or require manual tuning operations.

OPTIONS 1 & 2: FEEDHORN OPTIONS

The Tracker 70 is pre-programmed from the factory to operate a single C-Band and a single Ku-Band feedhorn system using standard servo-driven polarizers. However, using either the C-BAND or KU-BAND SINGLE / DUAL FEED options, you may program the receiver to accommodate a dual feed system. Options 1 and 2 switch between single and dual feeds for C-Band Ku-band systems, respectively.

OPTIONS 3 & 4: AUTOMATIC DISH AND POLARITY PEAKING

These SYSTEM SETUP options allow you to disable the receiver's automatic dish and polarity peaking routines, in the event you want to make these adjustments manually. The automatic peaking features are turned **ON** at the factory.

Once an automatic peaking routine is switched **OFF**, you will either be able to manually re-peak the dish position or polarity angle, depending on which tuning mode the receiver is in. The polarization angle of the oppositely polarized channels will not be affected.

To manually re-peak the dish:

- Select an active channel on the satellite that you are re-peakng the dish for.
- Enter **[MENU][6][3]**, then select **INSTALLATION, SYSTEM SETUP**, and **[3]** for **AUTO DISH ON / OFF** option.
- Switch the option **OFF**. Exit CUSTOM FEATURES by pressing **[VIEW]** or by repeatedly pressing **[CANCEL]**.
- Enter DISH TUNING mode.
- Use the **[◀][▶]** buttons until you see the best picture possible. Press **[STORE]**.
- If you wish to reset the receiver for AUTOMATIC DISH PEAKING, switch option **[3]** in SYSTEM SETUP back **ON**.

To manually adjust the polarity angle:

- Tune to the channel that you wish to adjust.
- Switch option **[4] AUTO POLARITY** to **OFF**.
- While the receiver is in POLARITY TUNING, use the **[◀][▶] TUNING** buttons to adjust the polarization until you see the best picture, then press **[STORE]**.
- If you wish to reset the receiver for AUTOMATIC POLARITY PEAKING, switch option **[4]** in the SYSTEM SETUP back **ON**.

OPTION 5: POLARIZER POWER OPTION

This option switches between continuous (ON) and pulsed (TIMED) power to the polarizer or polarization accessory. There is a three second delay in switching the power **ON** and **OFF**. Under normal operating conditions, this option should be pulsed. The continuous option should be used for polarizers that require continuous power or in extremely cold areas where the polarizer could freeze if it is not continuously moved.

OPTION 6: ADJUST DRO

Select this option if the picture quality can be consistently improved on all channels on all satellites. This option must be set independently for C-Band and Ku-Band LNBs by selecting either a C-Band or Ku-Band satellite prior to selecting the ADJUST DRO option.

To adjust the DRO frequency:

- Select the desired C-Band or Ku-Band satellite.
- While in the CUSTOM FEATURES INSTALLATION menu, select SYSTEM SETUP, and then option [6] **ADJUST DRO**.
- Adjust the DRO frequency using the [◀|▶] buttons. Select several channels and try to improve the picture until all the channels on the satellite have an equal amount of black and white sparkles. If no improvement is noted, return to the center tuned position (indicated by 0.00 on the display).
- If an improvement can be made to all channels, press [ENTER] to save the change. Otherwise, press [CANCEL] to exit without storing any change.

OPTION 7: FILTERS

OPTIONS 1, 2, 3 & 4: VNR AND TI ON OR OFF ALL CHANNELS

These options are provided to erase or store the VNR and TI picture enhancements on every channel of the current satellite. To erase all VNR and TI picture enhancements that have been previously stored on the current satellite, select the option for either **VNR** or **TI OFF ALL CHAN**. To store the picture enhancements on every channel of the current satellite, select the option for either **VNR** or **TI ON ALL CHAN**. The **ON ALL CHAN** options should only be used in areas of high terrestrial interference.

OPERATION LOCKS

This INSTALLATION option allows you to enable or disable the receiver's ability to change or store fine tuning parameters and customized settings. In addition, the OPERATION LOCKS menu provides the SHORT / LONG LIST LENGTH for the Front Panel Mode.

OPTIONS 1 & 2: TUNING AND STORE LOCKS

If **TUNING LOCK** is switched **ON**, the **[TUNING]** button will only select between Video Tuning, Audio Tuning, or normal viewing. This lock prevents any changes from being made to dish position or feedhorn polarity, but continues to allow video and audio adjustments.

If **STORE LOCK** is switched **ON**, the **[STORE]** button is disabled. No changes can be made to the receiver's programmed information.

OPTION 3: SPEED STORE

Normally you will need to press **[STORE]** to program tuning changes and special options in the receiver's memory. If you are making a number of tuning adjustments, you may wish to turn **SPEED STORE ON**. With **SPEED STORE ON**, your tuning changes and selections will become permanent as you make the changes. Normally, **SPEED STORE** should be **OFF** to prevent accidental changes from automatically being saved in the receiver's memory.

OPTION 4: FRONT PANEL LIST LENGTH

This option determines which features will be available when the receiver is in Front Panel Mode. In the **SHORT** mode, five basic operations are provided. In the **"LONG"** mode, another five operations are added to the front panel options. (Refer to "Front Panel Tuning" on Page 30 of this manual).

CHANGE MEMORY

NOTE: The following features in the Change Memory menu cannot be accessed while Parental Lock is **ON**. Turn **OFF** the Parental Lock (See Page 14) before attempting to use these functions.

OPTION 1: RE-SYNC ACTUATOR

This option is useful when repairing or replacing the actuator or defective sensor wires; reconnecting loose actuator wires and clamps; or correcting any other problem that has caused the dish position to be displaced the same amount on every satellite. The **RE-SYNC ACTUATOR** option allows you to align the actuator to match the receiver's currently stored satellite positions, preventing you from having to re-program the receiver.

To re-sync the actuator:

- Select a known active satellite and channel using the **[SAT]** button and the alphanumeric keypad. If the actuator is not in sync, you will probably not see a picture on the screen.
- Enter the **CUSTOM FEATURES INSTALLATION** menu **[MENU][6][3][4][3]** and select the **CHANGE MEMORY** menu. Press **[1]** for **RE-SYNC ACTUATOR**. (The receiver will select Dish Tuning).
- Use the **[◀][▶]** keys to move the dish to the satellite you selected in the first step. The on-screen display will show the current dish count.
- Once you have correctly identified the satellite, press **[STORE]**. If **AUTO DISH ON/OFF** has not been switched **OFF** (If it is **OFF**, return to system Setup and turn it **ON**.), the receiver will optimize the dish position for the current satellite. After a single satellite has been relocated, your receiver will be able to accurately locate **ALL** of the other previously programmed satellites.
- When re-sync is completed, select several other satellites and verify their identity to be sure that the actuator problem has been corrected.

OPTIONS 2 & 3: SET NEW EAST / WEST LIMIT

The SET NEW EAST LIMIT and SET NEW WEST LIMIT options are useful if you have already set a limit but wish to move it, or you are programming a new satellite beyond one of the current limits. Changing the limits does not affect satellites currently programmed in your receiver.

To change the east or west limit:

- Select **[2]** to change the **EAST LIMIT**, or **[3]** to change the **WEST LIMIT**. The receiver will automatically go into Dish Tuning.
- Use the **[◀][▶]** buttons to move the dish to the new limit.
- Press **[STORE]**.

Note that the limits can only be extended by 200 counts at a time. This is to prevent the user from over-extending the actuator arm.

OPTIONS 4 & 5: RESET CHANNEL AND SATELLITE CHANGES

Select these options to reset the satellite receiver back to the factory programmed settings.

OPTION 6: ADD A CHANNEL

This feature allows you to increase the number of channels on your pre-programmed satellite. This is useful when you have more than one video channel on the same transponder at different frequencies. Go to the channel you want to copy and select this option. If the satellite you are on previously had 24 channels, it will now have 25 channels and Channel 25 is a copy of the channel you were on when this option was activated. Use Video Tuning to properly tune the video signal. These added channels can also be stored in the Favorite Channels and given a Custom Name (see Pages 21-23).

A total of 48 channels can be stored on a given satellite. On a 24 transponder satellite, 24 more channels can be added using this feature. On a 32 transponder satellite, 16 more channels can be added.

ERASE MEMORY

NOTE: The following options erase all, or part of your receiver's memory. These Custom Features should be used with caution. Be certain of what you will be erasing before you press **[ENTER]**.

OPTION 1: ERASE A SATELLITE

This option allows you to erase satellites. Select this option and scroll **[◀][▶]** to the satellite you wish to erase. Press **[ENTER]**, the satellite is now erased.

OPTION 2: ERASE ALL SATELLITES

This option may be used to erase all of the programmed satellites without erasing the east and west limit. The factory preset satellite information will not be erased, and will be recalled as each satellite is re-programmed.

OPTION 3: ERASE ALL FAVORITE PROGRAMS

This option allows you to erase all of the Favorite Channels (Videos/Audios) stored in memory

OPTION 4: ERASE ALL MEMORY

CAUTION! This option will erase all user programmed memory! The entire system, including satellites, east and west limit, and Favorite Channels will need to be re-programmed after using this option. Erasing all memory does not restore any VideoCipher passwords you may have entered.

If ERASE ALL MEMORY is selected and confirmed, your Tracker 70 will operate exactly as it did when you first took it out of the box. The factory preset information will not be erased, and will be recalled as each satellite is re-programmed. This option should be used when the unit is being re-programmed after servicing, or installation at a new location.

OPTION 5: CHANGE PASSWORD

If you need to change your Installation password, use this option and, follow the instructions provided by the on-screen menus. You will be prompted to enter the password twice for verification.

OPTION 6: DEFINE SATELLITE

This option allows you to "customize" your own satellite formats for future satellites. This feature assumes the user has a good knowledge of satellite formats. East and West Limits must be set prior to using DEFINE SATELLITE.

When [6] **DEFINE SATELLITE** is selected, the screen at right will be displayed.

To customize your own satellite:

- Enter a two character satellite keycode. **Keycodes from previously stored satellites and "00" cannot be used. "0" cannot be entered as the second digit as well.**
- Using the [◀][▶] keys, scroll and select a satellite format. 13 standard formats are included.
- Press the **CHANNEL** [▼] to select the **NAME** function. Press [ENTER]. Use the [◀][▶] keys select characters and move the cursor. Up to 13 characters can be used. When finished, press [ENTER].
- To locate and store the satellite, press [ENTER]. Use the [◀][▶] **TUNING** keys to move the dish to the satellite you want to store, and press [STORE]. Your custom name will appear on the top left corner of the screen. To call up this satellite, use the keycode you defined or the [◀][▶] keys to scroll through the stored satellites.

DEFINE SATELLITE
KEYCODE: 00
TYPE: C-BAND HUGHES
NAME:
FIND/STORE SAT
(CANCEL TO EXIT)
(0-9)

SELECTABLE SATELLITE FORMATS IN DEFINE SATELLITE:

C-BAND HUGHES
KU GE
KU MORELOS
KU SBS 5
KU TELSTAR

C-BAND GE
KU SPACENET
KU GSTAR
KU SBS 6

KU ANIK
KU SPACENET R
KU SBS 3/4
KU GALAXY HYB (hybrid)

OPTION 7: SATTRAK

Option [7] **SATTRAK** is described in detail in the "Programming Satellites" section on Pages 41 through 48.