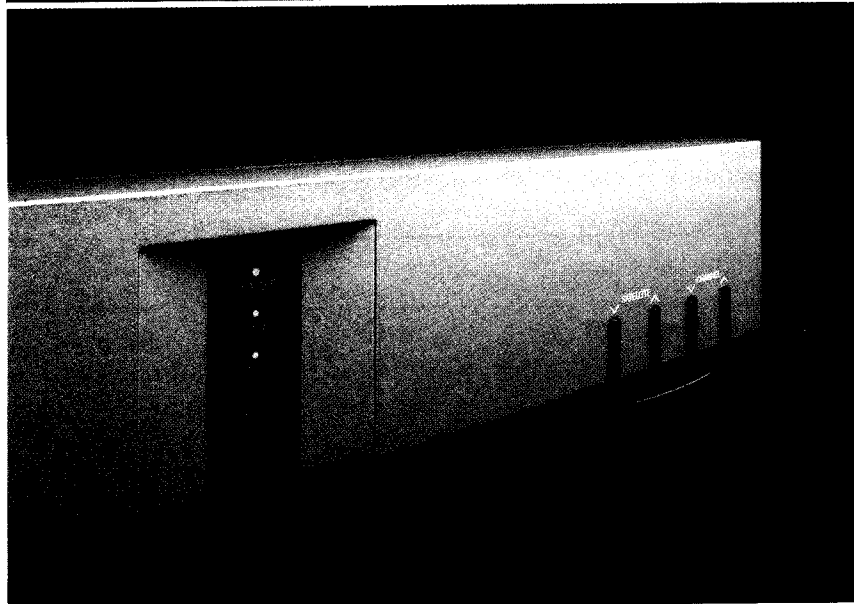# Owner's Manual

Compatible with C/Ku Band
Built-in TI Filter
Full Function UHF Remote Control
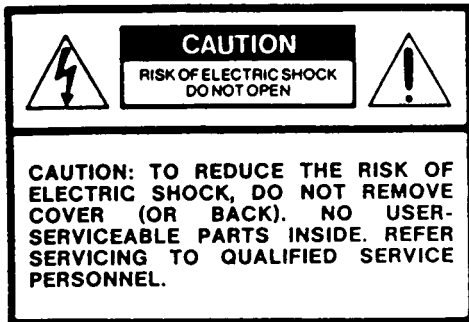
•

TRX-1520
Satellite Receiver

TOSHIBA

PLEASE READ

In the spaces provided below, record the Model and Serial No. located at the rear of your satellite receiver.

VCII PLUS Address No. _____ Serial No. _____

Retain this information for future reference.

(Printed on a white label)

NOTE TO SATELLITE SYSTEM INSTALLER

Please pay close attention to Article 810-20 of the National Electrical Code that provides guidelines for proper installation of antenna discharge units. In particular, this article specifies that each conductor of a "lead in" from an outdoor antenna shall be provided with a listed antenna discharge unit except where the lead in conductors are enclosed in a continuous metallic shield that is effectively grounded.

NOTE TO CATV SYSTEM INSTALLER

For CATV system installations, please pay close attention to Article 820-40 of the National Electrical Code 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.

TABLE OF CONTENTS

FEATURES

Thank you for purchasing the TOSHIBA TRX-1520. This system has superior performance and many advanced functions. We are confident that you will be fully satisfied with your new TRX-1520. This system has the following features.

Compatible with VIDEOCIPHER® RS Descrambler
Allows enjoyment of VIDEOCIPHER® RS programming.

Built-in Programmable Antenna Positioner With Power Supply
24 C-band satellites and 24 Ku-band satellites can be programmed.

Compatible with C/Ku band

On Screen Display
Displays various functions such as satellite name, channel, audio, etc.

Built-in TI Filter
Reduces the video noise which is caused by the terrestrial interference. This filter is programmable by channel, by satellite.

20 Favorite Channel Memory
Stores satellite position, channel number and Audio.

Category Menu Selection
Initially, satellite programs are factory programmed in 10 different categories.
Allows easy selection of the satellite program.

Full Function UHF Remote Control

Additional Features

Frequency Synthesized Tuning System

Parental Control (Antenna lock, Channel lockout)

Auto Tuning

Channel Scan

INDICATION OF CONTROLS

FRONT PANEL
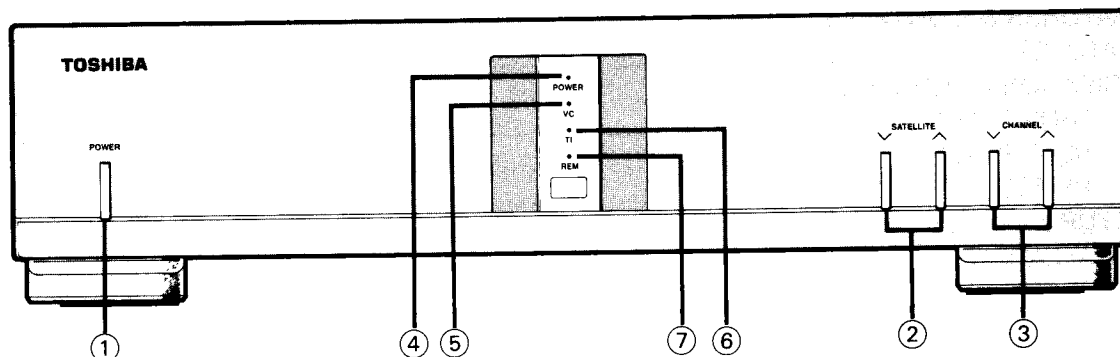
① POWER BUTTON
Turns the receiver on or off.

② SATELLITE BUTTON
This button selects the next programmed satellite to the east or west. When the button is released, the dish will automatically begin moving to the requested satellite.

③ CHANNEL BUTTON
Selects channels up or down.

④ POWER INDICATOR
Indicates the receiver power is on.

⑤ VC INDICATOR
Indicates the system is receiving a VIDEOCIPHER® signal.

⑥ TI FILTER INDICATOR
Indicates the TI filter is on.

⑦ REM (REMOTE CONTROL) INDICATOR
Indicates the receiver is accepting signals from the remote control.

REAR PANEL
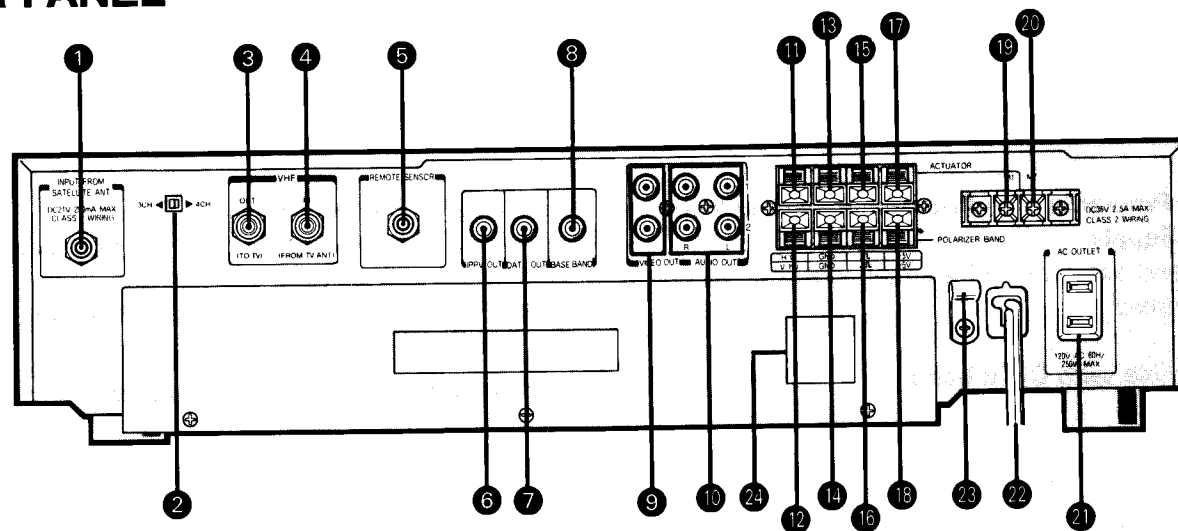
❶ INPUT
This connector accepts the input signal from the satellite antenna.

❷ CHANNEL 3/4
The output of the modulator ❸ (VHF OUT) is controlled by this switch. TV reception on channel 3 or 4 is possible.

❸ VHF OUT
Channel 3 or 4 modulated VHF signal output. Connect to the VHF input on a television set.

❹ VHF IN
A VHF signal input. Connect to a VHF antenna or cable system.

— 3 —

❺ UHF REMOTE IN

This connector is the input terminal for the UHF remote control. Plug the antenna in here.

❻ IPPV OUT

This phono connector provides output data from the VideoCipher® RS module.

❼ DATA OUT

This phono connector provides output data from the VideoCipher® RS module.

❽ BASE BAND

This phono connector provides unfiltered, unclamped composite baseband video output to an external de-scrambler.

❾ VIDEO OUT

These phono connectors provide the video outputs to a VCR or a monitor.

❿ AUDIO OUT

These phono connectors provide the audio outputs, left and right, from the receiver. The output level can be adjusted from the remote control.

⓫ H (C)

This output provides +12V to an external A/B switch when:

● H/V is selected in the INPUT MODE and the H polarity is selected.
● C/Ku is selected in the INPUT MODE and a C-band satellite is selected.

⓬ V (Ku)

This output provides +12V to an external A/B switch when:

● H/V is selected in the INPUT MODE and the V polarity is selected.
● C/Ku is selected in the INPUT MODE and a Ku-band satellite is selected.

⓭ GND

An actuator position feedback line used in conjunction with ⓰ alone or ⓰ and ⓱.

⓮ GND

This is the return line for ⓫, ⓬, ⓰, ⓲.

⓯ ⎍

This is the actuator return pulse.

⓰ ⎍⎍

This terminal is the output control for the polarizer.

⓱ +5V

The actuator signal line that provides +5V to a hall effect device.

⓲ +5V

This terminal is the 5V supply for the polarizer.

⓳ M1

Combined with ⓴, this output controls the motor direction and dynamic braking. When the EAST ☑ is pressed, +36V (MAX) appears at the M1 relative to M2.

⓴ M2

Combined with ⓳, this output controls the motor direction and dynamic braking. When the WEST ☑ is pressed, +36V (MAX) appears at the M2 relative to M1.

㉑ AC OUTLET

Provides 120V AC (250W MAX) as long as the line cord is plugged into an active wall outlet.

㉒ LINE CORD

120V AC, 60Hz (nominal) input.

㉓ CABLE HOLDER

This is used to secure the cable from satellite antenna.

㉔ TELEPHONE JACK

This connects your VideoCipher® RS module to your telephone line when utilizing pay-per-view services.

REMOTE CONTROL

TOSHIBA
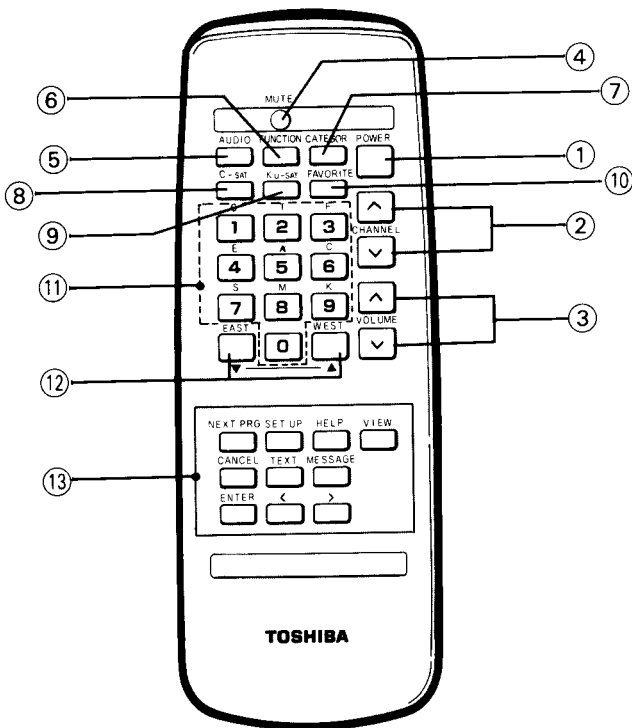
① POWER BUTTON
This button turns the receiver on or off.

② CHANNEL BUTTONS
These buttons allow channel scanning up or down.

③ VOLUME BUTTONS
These buttons adjust the audio up or down.

④ MUTE BUTTON
This button mutes the sound.

⑤ AUDIO BUTTON
Pressing this button, followed by the ALPHANUMERIC buttons or EAST [∨] or WEST [∧] , selects preprogrammed audio subcarriers.

⑥ FUNCTION BUTTON
Pressing this button, selects the MAIN menu.

⑦ CATEGORY BUTTON
Pressing this button, followed by an ALPHANUMERIC button, selects a desired satellite program by category.

⑧ C-SAT BUTTON
Pressing this button, followed by the ALPHANUMERIC buttons or EAST [∨] or WEST [∧] , selects C-band satellites.

⑨ Ku-SAT BUTTON
Pressing this button, followed by the ALPHANUMERIC buttons or EAST [∨] or WEST [∧] , selects Ku-band satellites.

⑩ FAVORITE BUTTON
Pressing this button, followed by the ALPHANUMERIC buttons, selects a favorite program channel which can be stored in the receiver's memory.

⑪ ALPHANUMERIC BUTTONS
These 10 buttons are used to do the following.

(1) To select a satellite and a channel directly.

(2) To select a favorite program.

(3) To select a satellite program by category.

(4) To select an audio program.

(5) To select MAIN FUNCTIONS.

⑫ ANTENNA EAST/WEST BUTTONS
This button is used to move the antenna. When pressed with [Ku-SAT] , [C-SAT], this button cycles through programmed satellite positions.

⑬ VIDEOCIPHER® RS CONTROLS
These buttons perform those functions associated with the operation of the VideoCipher® RS: Descrambler, and are operative only when receiving VideoCipher® signal. See page 24.

Note: [ENTER] , [VIEW] and ◄ ► are also used for other functions.

If the wrong key was pressed or the operation of the TRX-1520 was unknown, press [VIEW].
[VIEW] will clear any on screen display.

■INSTALLING THE BATTERIES:

① Press down and pull off.

② Insert two AAA batteries, observing the polarity shown by the diagram inside the battery compartment.
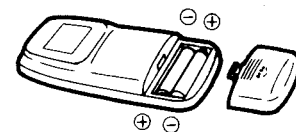
INSTALLATION

1. CONNECTIONS TO A SATELLITE ANTENNA

(1) SINGLE LNB
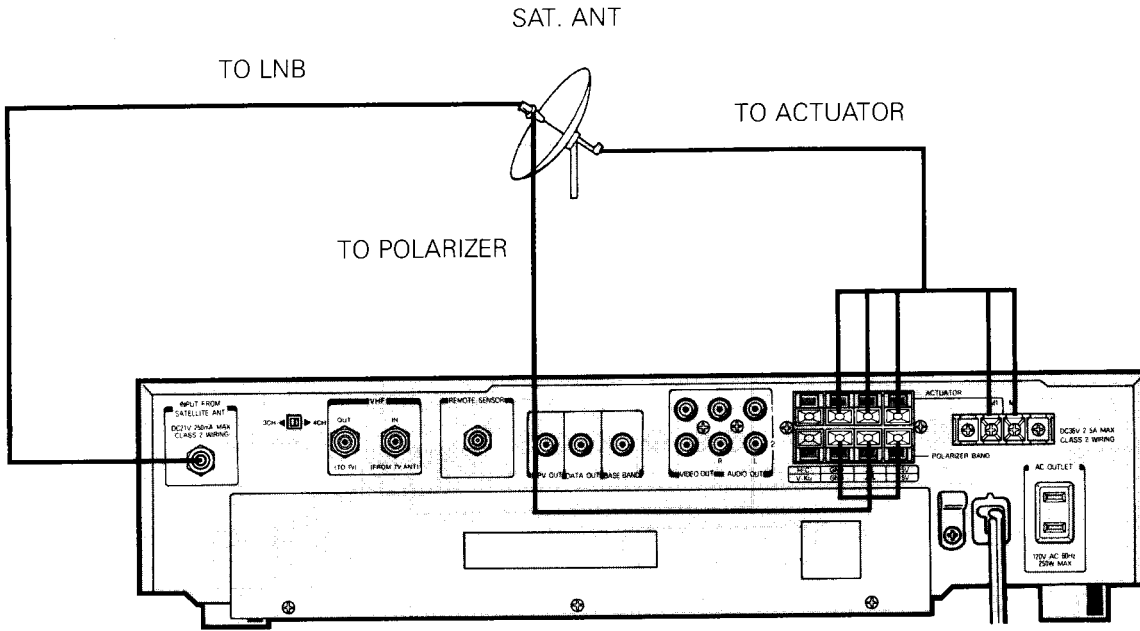
(2) DUAL LNBs (C-Band only or Ku-Band only)

Set the INPUT MODE to V/H.
See page 11.
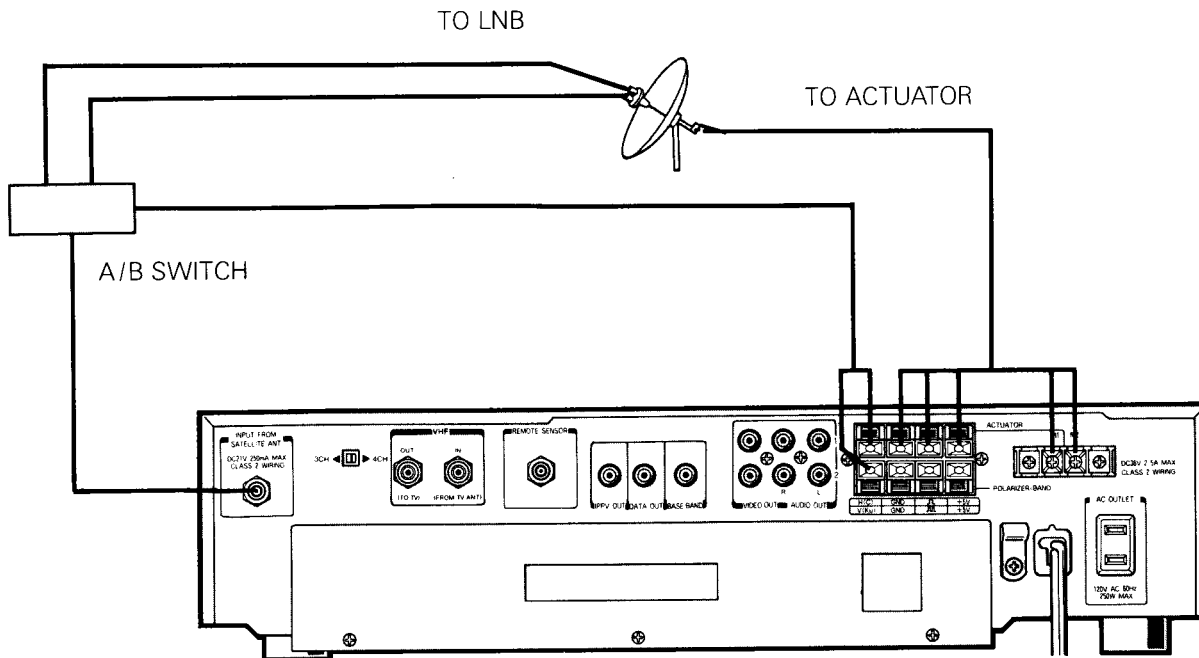
INSTALLATION

(3) DUAL LNBs

Set the INPUT MODE to C/Ku.
See page 11.
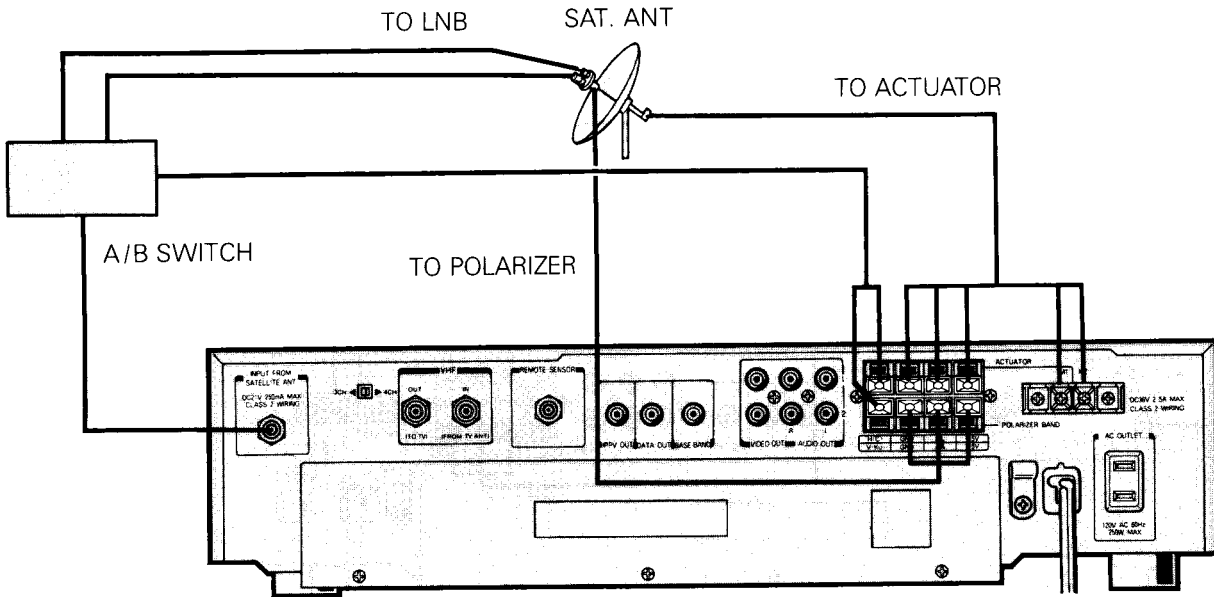
2. CONNECTION TO OTHER AV COMPONENTS

EX. 1

UHF ANT for REMOTE CONTROL

TO TELEPHONE LINE

TO VHF
ANTENNA

VIDEO IN
AUDIO IN

VHF OUT   **VCR**   VIDEO OUT
AUDIO OUT

VHF IN   VIDEO IN
AUDIO IN

TV
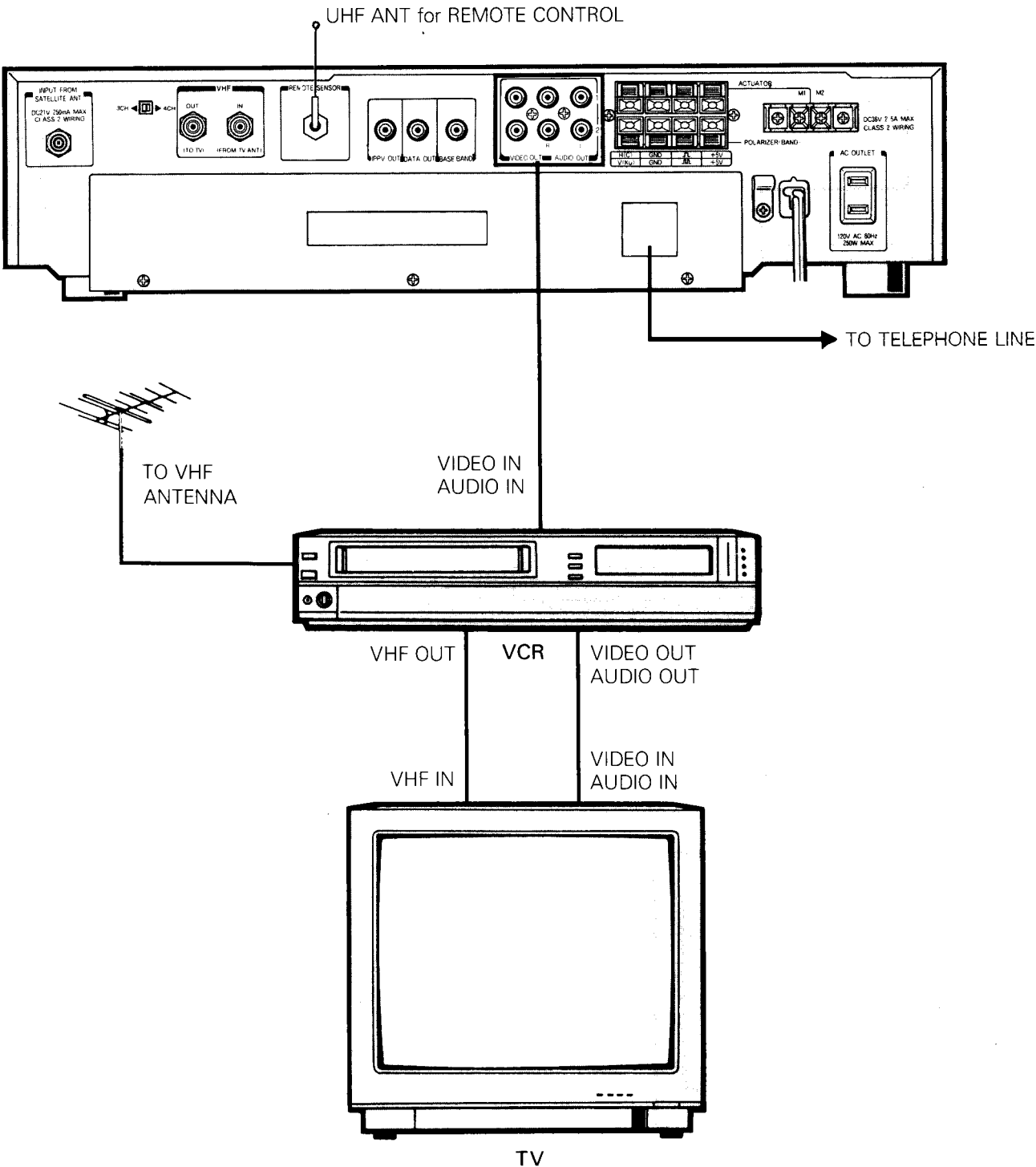
●When recording a program on a VCR, set the TRX-1520's volume control to 63 (max).

INSTALLATION

EX. 2 When using a television without audio and video inputs.

NOTE:

When the receiver is turned on, satellite programs can be watched on TV.
When the receiver is turned off, the VHF TV programs can be watched on TV.

TO VHF
ANTENNA

TV reception on channel 3 or 4 is possible.

UHF ANT for REMOTE CONTROL

TO TELEPHONE LINE

VHF IN

TV
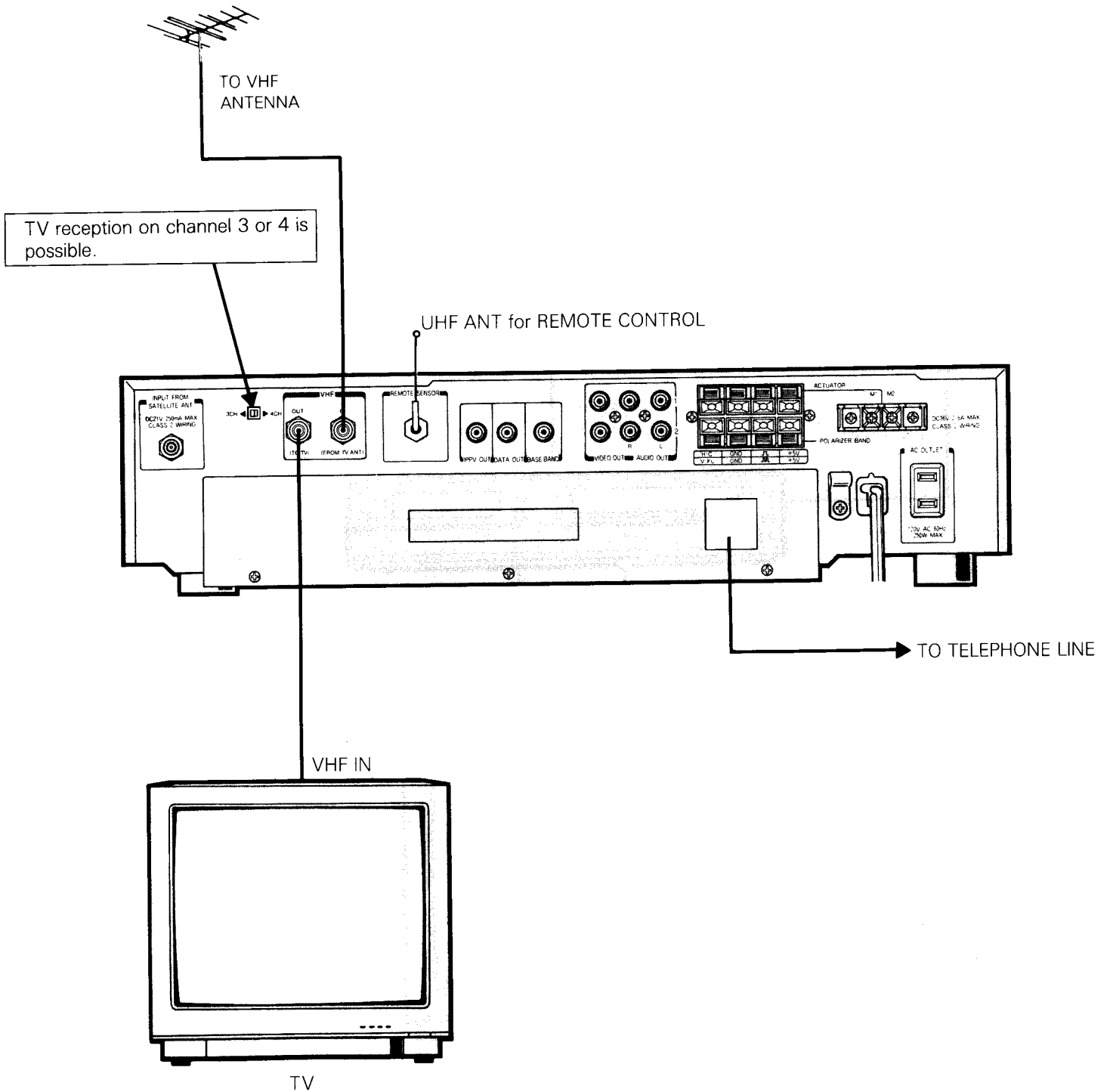
INITIAL SETUP

The following initial setup procedures must be completed before attemping to operate the receiver. Under normal circumstances, there should be no need to change these programs after the initial setup.

1. POWER ON

Turn on the receiver and TV. Change the input of the TV to correspond with the input of the satellite receiver. (Ex. Video 1, 2 or Channel 3/4 when using the RF modulator.)

2. SELECTING THE RECEIVER MODE

Set the receiver to the PROGRAM mode as follows.

(a) Press FUNCTION , 4 and the display will be as shown at right.

```
4 RECEIVER MODE

      1. Auto
   ⊟  2. Program

   Select 1-2
   Then (ENTER)
```
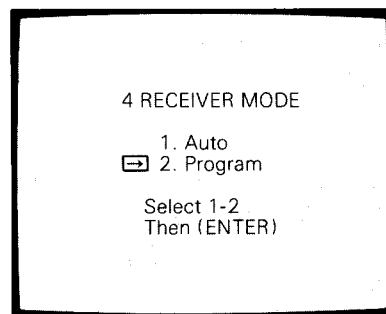
(b) Select 2 and press ENTER .

3. CHECK ACTUATOR WIRING

Confirm that when EAST ⊡ is pressed, the antenna moves to the east. If not, swap the connection of M1 and M2 on the rear panel of the receiver.

(a) Press FUNCTION , 3 , 4 and the display will be as shown at right.

```
   All Data Clear

        1. YES
   ⊟ 2. NO

   Select 1—2
   Then (ENTER)
```
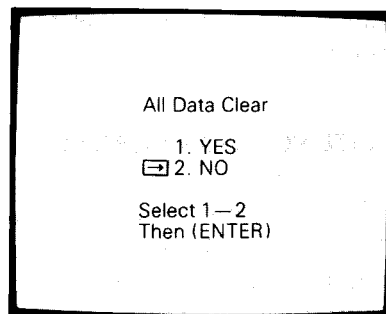
(b) Select 1 and press ENTER . At this time all data is initialized as factory preset. The display will be as shown at right.

```
   Satellite memory is
   all cleared.

   Move dish to
   East Limit (EL).
   Then (ENTER)
```
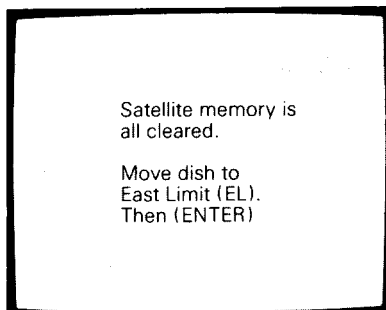
4. SELECTING THE INPUT MODE FOR YOUR SYSTEM

(a) Press [FUNCTION], [1], [4] and the display will be as shown at right.

(b) By pressing EAST [▼] or WEST [▲], select C/Ku or H/V in accordance with the antenna and LNB configuration being used.

(c) Press [VIEW] to return.

```
┌─────────────────────────────┐
│                             │
│          1 SET-UP           │
│        — Program Mode —      │
│                             │
│      1. REM IND.    : ON    │
│      2. Channel Scan : OFF  │
│      3. Auto Tuning  : ON   │
│   [→] 4. Input Mode  : C/Ku │
│                             │
│      Select 1—4 (▼▲)        │
│      Then (VIEW)            │
│                             │
└─────────────────────────────┘
```
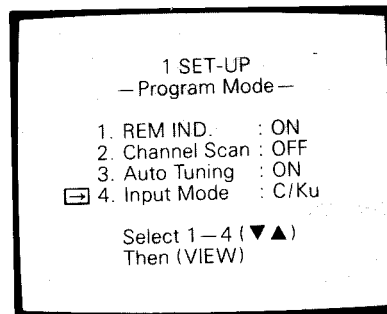
5. SETTING ANTENNA LIMITS

The Antenna limits must be set to prevent the antenna from traveling too far. The antenna limits should be set so that the antenna can aim anywhere between the farthest east satellite and the farthest west satellite, without hitting any objects such as the ground or a fence.

(a) The east limit must be set first. Move the dish east until "No Return Pulse" is displayed on screen. At this time press WEST [▲] for 1~2 seconds. This is the east limit.
Press [ENTER] to store this position.

Note: To avoid possible damage to an actuator without a mechanical stop, an additional person should be located near the dish to notify the installer the actuator is reaching its limit.

(b) Repeat step (a) to enter the west limit. The antenna limit setup is over.

6. SATELLITE POSITION MEMORY

Up to 48 satellite can be programmed (C-band: 24, Ku-band: 24). For the satellites listed on the one sheet manual, the 2-digit ALPHANUMERIC codes designate the band, polarity and audio/video frequencies which have been stored in memory for each of the satellites. Therefore, it is necessary to program only the satellite locations for these satellites.

(a) Press [FUNCTION], [1]. The display will be as shown at right.

```
┌─────────────────────────────┐
│                             │
│          1 SET-UP           │
│        — Program Mode —      │
│                             │
│   [→] 1. REM IND.    : ON   │
│      2. Channel Scan : OFF  │
│      3. Auto Tuning  : ON   │
│      4. Input Mode   : C/Ku │
│                             │
│      Select 1—4 (▼▲)        │
│      Then (VIEW)            │
│                             │
└─────────────────────────────┘
```
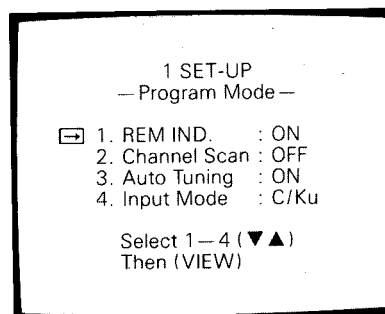
(b) Select ⌷2⌷ and by pressing EAST ⍌▾⍌ or WEST ⍌▴⍌. Turn the CHANNEL SCAN ON.

(c) Select ⌷3⌷ and by pressing EAST ⍌▾⍌ or WEST ⍌▴⍌. Turn the AUTO TUNING ON.

(d) Press ⌷VIEW⌷ to store.

(e) Select C or Ku-band by pressing ⌷C-SAT⌷ or ⌷Ku-SAT⌷ and select a satellite name by pressing ⌷◁⌷ or ⌷▷⌷ until the desired satellite name appears, or enter the satellite designation (2 digit) by the ALPHANU-MERIC buttons.
Ex. When GALAXY 1 is selected, press ⌷C-SAT⌷, ⌷G⌷, ⌷1⌷.

(f) By pressing and holding EAST ⍌▾⍌ or WEST ⍌▴⍌, move the dish to the selected satellite until a picture is visible. To correctly identify the satellite, please refer to a current programming guide.

Press ⌷ENTER⌷, the skew and satellite positioner will automatically adjust to deliver the best possible picture.
When completed, the antenna position is stored.

To program additional satellite positions, repeat step (e) through (f).

The INITIAL SETUP is now complete.

SET UP

```
┌─────────────────────────┐
│                         │
│                         │
│   Galaxy 1       CH: 24  │
│   (C-band)       POL: V  │
│                         │
│            Auto Skew     │
│            Auto ANT.     │
│                         │
│                         │
└─────────────────────────┘
```

Flashing during operation.
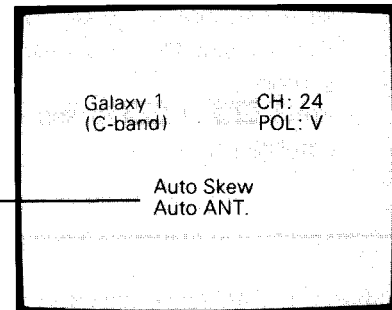
BASIC OPERATION

The following describes the basic operation of this receiver assuming that the operation of INSTALLATION section has been properly completed.

1. POWER ON

Press [POWER] and the power indicator on the front panel will light up.

Set the receiver to the AUTO mode. See page 47.

2. SATELLITE AND CHANNEL SELECTION

(1) Satellite selection

There are two ways to select a satellite.

● Direct access

Press [C-SAT] or [Ku-SAT] and input the desired satellite designation (2-digit as G1, F3, etc.) by pressing the ALPHANUMERIC buttons. Then the dish will move to the desired satellite.

● Next access

Press [C-SAT] or [Ku-SAT] and press and hold EAST [∨] or WEST [∧] until the desired satellite name appears on the display. After releasing the button, the dish will move to the desired satellite.

Note: If it is desired to view the programmed satellite list, press [C-SAT] or [Ku-SAT] twice, the list will then be displayed on the TV screen.
Press [<] or [>] to see next or previous satellite list.
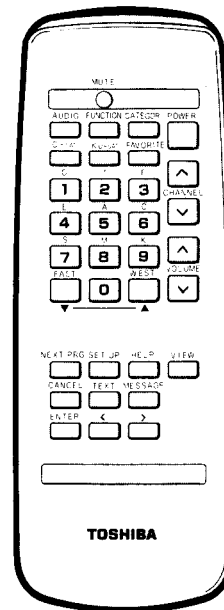
```
C-band SAT List—0

C1 : Satcom C1
G1 : Galaxy 1
F1 : Satcom F1
G5 : Galaxy 5
F2 : Satcom F2
S2 : Spacenet S2

Select SAT Name
```

Ex. When G1, C-BAND is selected.

Press [C-SAT], [G], [1].

or

Press [C-SAT], and hold EAST [∨] or WEST [∧] until G1 is displayed on the front panel and on screen.

After the dish reaches the selected satellite position, (in this case, G1), the display will change.

```
Galaxy 1
(C-band)
```

```
Galaxy 1          CH: 24
(C-band)          POL: V
```

(2) Channel selection
There are two ways to select a channel.

● Direct access
Enter the desired channel number by pressing the
ALPHANUMERIC buttons.

● Up, down access
Press CHANNEL ▼ or ▲ until the desired
channel appears.

When a channel is selected, the number will be
displayed as shown at right.

```
┌─────────────────────────────┐
│                             │
│  Galaxy 1        CH: 24      │
│  (C-band)        POL: V      │
│                             │
│                             │
│                             │
│                             │
│                             │
└─────────────────────────────┘
```
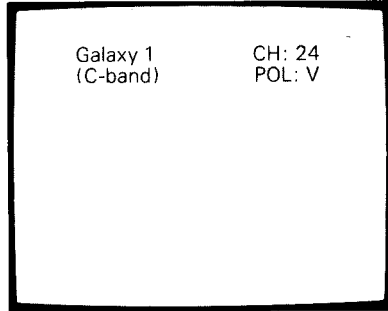
3. AUDIO PROGRAM SELECTION
This receiver has 20 (0—19) AUDIO PROGRAMS.
By using this AUDIO PROGRAM function, the desired
audio data can be selected easily.
There are two ways to select an audio program.

● DIRECT ACCESS
(a) By pressing [AUDIO] twice, the AUDIO PROGRAM
LIST will be displayed.

Press ◄ ► to see the next or previous AUDIO
PROGRAM LIST.

(b) Select the desired program number.

● UP/DOWN ACCESS
(a) By pressing [AUDIO] and holding EAST ▼ or
WEST ▲ , the AUDIO PROGRAM can be
changed.

Note: The AUDIO PROGRAM 0 (VC AUDIO)
is only for the VideoCipher® II RS. The
AUDIO PROGRAM is automatically set to
the AUDIO PROGRAM 0 when receiving
a VideoCipher® II RS program.

Initially, the AUDIO PROGRAM is set as
shown at right.
The AUDIO PROGRAMS can be changed
except for the AUDIO PROGRAM 0, 1, 2,
3, 4 (page 46).

```
┌─────────────────────────────┐
│                             │
│    Audio Program List—0      │
│                             │
│    NO.   Freq.    BW         │
│     0 :  VC Audio            │
│     1 :  6.20 MHz  N         │
│     2 :  6.20 MHz  W         │
│     3 :  6.80 MHz  N         │
│     4 :  6.80 MHz  W         │
│                             │
│       Select 1—19            │
│                             │
└─────────────────────────────┘
```

```
┌─────────────────────────────┐
│                             │
│                             │
│                             │
│    Audio Program : 4         │
│                             │
│    Freq. : 6.80 MHz          │
│    Band : Wide               │
│                             │
│                             │
└─────────────────────────────┘
```
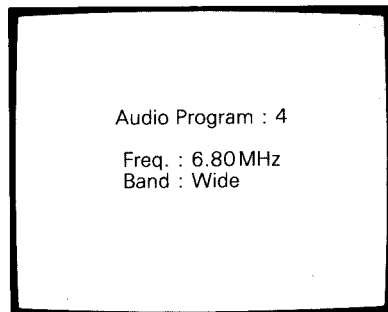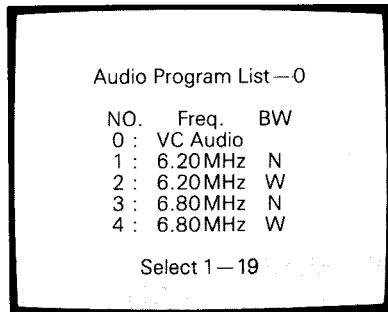
4. VOLUME AND MUTE CONTROLS

Press VOLUME ▼ or ▲ button to adjust the audio to a comfortable listening level.

Audio Level : 63
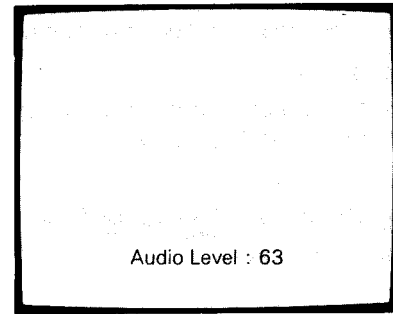
The volume reference level, 0 — 63 will change by pressing VOLUME ▼ or ▲ .

Press [MUTE] to turn off the audio. The display will be as shown at right.

Press [MUTE] again to return to the previous volume level.

Audio Mute
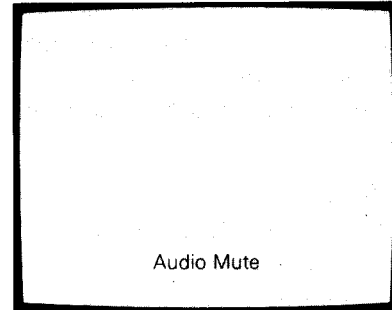
5. MOVING THE DISH

To move the dish, use EAST ▼ or WEST ▲ .

Note: If the wrong key was pressed or an undesired on screen display appears, press [VIEW] . VIEW will clear any on screen display.
If "NO RETURN PULSE" is displayed on screen when a satellite is selected or the dish is moved, check the antenna and actuator connections.

CATEGORY SELECTION

The satellite programs are stored in 10 different categories. (Refer to the supplied PROGRAM NAME LIST.) By using this function, it is possible to select the desired satellite program very easily. If desired, the factory programmed data can be changed. it is possible to store up to 100 satellite programs.

1. SELECTION

(a) Press [CATEGORY] and the category list will be displayed as shown at right.

```
┌─────────────────────────────┐
│        Category List        │
│                             │
│   0. Movies      6. News    │
│   1. Variety     7. Music   │
│   2. Mishmash    8. Superstn│
│   3. Networks    9. Audio   │
│   4. Sports                 │
│   5. Pay-Per-View           │
│                             │
│         Select 0 — 9        │
│                             │
└─────────────────────────────┘
```

Ex. When [0] is selected.

(b) Select the desired category number and the program name list will be displayed as shown at right. Press [<] [>] to see the next or previous list. Select the desired program number.

```
┌─────────────────────────────┐
│          0. Movies          │
│                             │
│  NO.  Name   SAT  CH  Audio │
│   0 : MAX-E   G1   19    4   │
│   1 : MAX-W   G5   16    4   │
│   2 : MAX-E2  T2   21    4   │
│   3 : HBO-E   G1   23    4   │
│   4 : HBO-E2  T2    5    4   │
│                             │
│         Select 0 — 9        │
│                             │
└─────────────────────────────┘
```

ADVANCED OPERATION

— 16 —

2. CHANGING A PROGRAM

Initially, satellite programs have been factory preset.
If desired, they can be re-programmed as follows.

Note: Reprogramming a CATEGORY SELECTION, when a service moves satellites or transponder, be sure to change the same program in the FAVORITE channels. This is not changed automatically. Using CHANGING A PROGRAM has no effect on data stored in the FAVORITE channels.

(1) TO STORE A PROGRAM

  (a) Set the receiver to the AUTO mode.
  Move the dish to the desired satellite and channel.

  (b) Receive the desired satellite, channel and audio that is to be stored.

  (c) Press [FUNCTION], [2], [5] and the display will be as shown at right.

```
┌─────────────────────────┐
│                         │
│    Category Selection    │
│                         │
│    ⊡1. Enter            │
│      2. Cancel          │
│                         │
│    Select 1—2           │
│    Then (ENTER)         │
│                         │
└─────────────────────────┘
```

  (d) Select [1] and press [ENTER]. The category list will be displayed as shown at right.
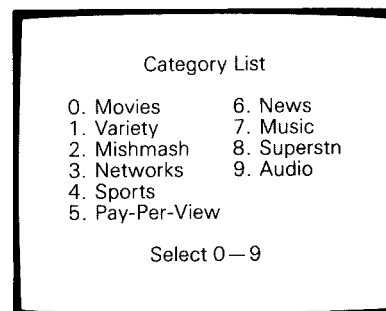
```
┌─────────────────────────┐
│                         │
│      Category List       │
│                         │
│  0. Movies    6. News   │
│  1. Variety   7. Music  │
│  2. Mishmash  8. Superstn│
│  3. Networks  9. Audio  │
│  4. Sports              │
│  5. Pay-Per-View        │
│                         │
│      Select 0—9         │
│                         │
└─────────────────────────┘
```

  (e) Select the desired category number and the program name list will be displayed.
  Press [<][>] to see the next or previous list.

```
┌─────────────────────────┐
│                         │
│       0. Movies          │
│                         │
│  0: MAX-E    6: HBO-W   │
│  1: MAX-W    7: HBO-W2  │
│  2: MAX-E2   8: SHOW-E  │
│  3: HBO-E    9: TMC-E   │
│  4: HBO-E2  10: w/o Name │
│  5: HBO-E3              │
│                         │
│   Select 0—10 : ——      │
│                         │
└─────────────────────────┘
```
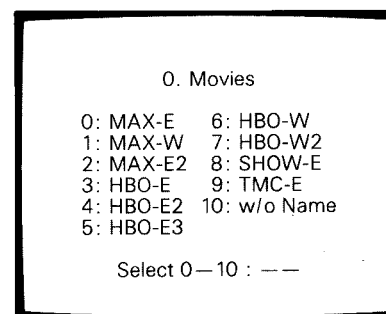
(f) Select the desired program name to be stored. If it is desired to store without a name, select 10 (w/o Name).

Note: When moving a program to a new satellite location, it is necessary to write the new location over the old one, as shown at right.

```
┌─────────────────────────────┐
│                             │
│     CAT. Program NO.0       │
│                             │
│        Name  SAT CH Audio   │
│  New : MAX-E  G1  15   1     │
│  Old  : MAX-E  F1   1   2    │
│                             │
│        Select 0 — 9          │
│        Then (ENTER)         │
│                             │
└─────────────────────────────┘
```

(g) Select the desired program number. The pre-programmed data will be displayed as shown at right. Press [ENTER] to store the new location.

(h) If unsure of which program number to store, press [CATEGORY]. The category program list will be displayed as shown at right. Press [<] [>] to see the next or previous list. Press [VIEW] to return.

```
┌─────────────────────────────┐
│        0. Movies             │
│                             │
│  NO.  Name   SAT CH Audio   │
│  0 :  MAX-E   G1  19   4     │
│  1 :  MAX-W   G5  16   4     │
│  2 :  MAX-E2  T2  21   4     │
│  3 :  HBO-E   G1  23   4     │
│  4 :  HBO-E2  T2   5   4     │
│                             │
│        Press (VIEW)         │
└─────────────────────────────┘
```

(2) TO CANCEL A PROGRAM

(a) Set the receiver to the AUTO mode.

(b) Press [FUNCTION], [2] , [5] and the display will be as shown at right.

```
┌─────────────────────────────┐
│                             │
│    Category Selection       │
│                             │
│    ⟹ 1. Enter               │
│       2. Cancel             │
│                             │
│       Select 1 — 2           │
│       Then (ENTER)          │
│                             │
└─────────────────────────────┘
```

(c) Select [2] , [ENTER] and the category list will be displayed as shown at right.

```
┌─────────────────────────────┐
│        Category List         │
│                             │
│  0. Movies      6. News      │
│  1. Variety     7. Music     │
│  2. Mishmash    8. Superstn  │
│  3. Networks    9. Audio     │
│  4. Sports                   │
│  5. Pay-Per-View             │
│                             │
│       Select 0 — 9           │
└─────────────────────────────┘
```

(d) Select the category number and the preprogrammed list will be displayed as shown at right. Press [<][>] to see the next or previous list.

(e) Select the program name to be cancelled and press [CANCEL] to delete the data.

```
┌─────────────────────────────┐
│        0. Movies             │
│                             │
│  NO.  Name   SAT CH Audio   │
│  0 :  MAX-E   G1  19   4     │
│  1 :  MAX-W   G5  16   4     │
│  2 :  MAX-E2  T2  21   4     │
│  3 :  HBO-E   G1  23   4     │
│  4 :  HBO-E2  T2   5   4     │
│                             │
│       Select 0 — 9           │
│       Then (CANCEL)         │
└─────────────────────────────┘
```
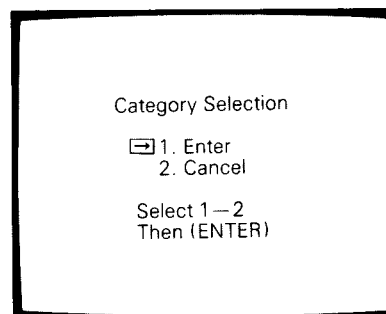
ADVANCED OPERATION

FAVORITE PROGRAM

By using this function, it is possible to store up to 20 of your favorite satellite programs. It is then possible to select your desired program without selecting a satellite or channel. These programs may be on the same satellite or 20 different satellites. This feature is only available in the AUTO mode.

1. PROGRAMMING FAVORITE CHANNELS

(a) Set the receiver to the AUTO mode.

(b) Move the dish to the satellite and channel to be stored.

(c) Press [FUNCTION], [2], [6] and the display will be as shown at right.

```
Favorite Program

➡ 1. Enter
   2. Cancel

Select 1—2
Then (ENTER)
```
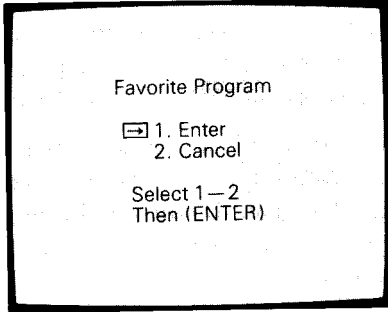
Select [1] and [ENTER]. The satellite and channel will be displayed as shown at right.

```
FAV. Program NO. ——

        Name  SAT  CH  AUD.  TI
New : HBO-E  G1   12   10   ON
Old :  ——    ——  ——   ——   ——

      Select 0—19
      Then (ENTER)
```
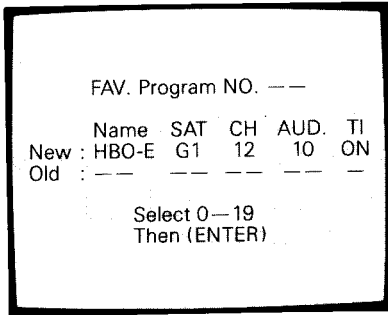
Input the FAVORITE PROGRAM number (0—19), which is to be stored and [ENTER].
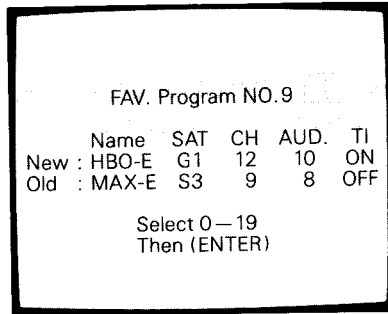
Note: When a program has moved to a new satellite location, it is necessary to program that change in the category selection menu before updating your Favorite Program list.

```
FAV. Program NO.9

        Name  SAT  CH  AUD.  TI
New : HBO-E  G1   12   10   ON
Old : MAX-E  S3    9    8   OFF

      Select 0—19
      Then (ENTER)
```

(d) If it is undecided which program number to store, press [FAVORITE]. Press [◁] or [▷] to see the next or previous favorite program list. Press [VIEW] to return.

```
      FAV. Program List—0
NO. Name     SAT  CH  AUD.  TI
0 : HBO-E    G1   12   10   ON
1 : SHOW-E   S3    8    8   OFF
2 :  ——      ——   —    —    —
3 :  ——      ——   —    —    —
4 :  ——      ——   —    —    —

      Press (VIEW)
```
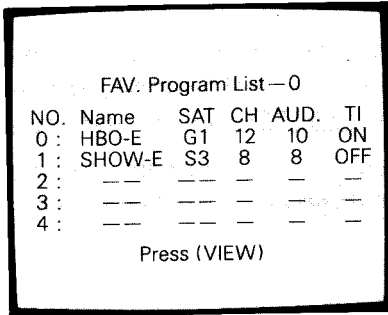
2. TO CANCEL A FAVORITE PROGRAM

(a) Set the receiver to the AUTO mode.

(b) Press [FUNCTION], [2], [6] and the display will be as shown at right.

```
Favorite Program

⮕ 1. Enter
   2. Cancel

Select 1—2
Then (ENTER)
```
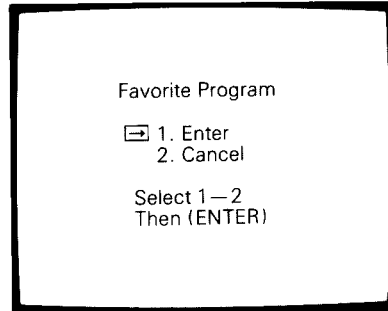
Select [2] and [ENTER], the display will be as follows.

Press ◁ or ▷ to see the next or previous list.

(c) Select the program number and press [CANCEL] to delete a program.

```
FAV. Program Cancel—0
NO.  Name   SAT  CH  AUD.  TI
0 :  MAX-E  G1   12   10   ON
1 :  HBO    S3    8    8   OFF
2 :  ——     ——   —    —    ——
3 :  ——     ——   —    —    —
4 :  ——     ——   —    —    —

Select 0—9
Then (CANCEL)
```
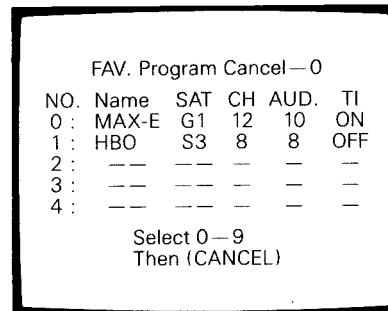
3. OPERATION OF A FAVORITE PROGRAM

Press [FAVORITE] twice and the FAVORITE PROGRAM list will be displayed. Press ◁ or ▷ to see the next or previous list. Enter the program number to select your FAVORITE PROGRAM.

Note: To select a FAVORITE PROGRAM directly without displaying the favorite program list, ·press [FAVORITE] and continue to enter the desired program number.

```
FAV. Program List—0
NO.  Name   SAT  CH  AUD.  TI
0 :  MAX-E  G1   24   15   OFF
1 :  MAX-W  F3   15    5   ON
2 :  ——     ——   —    —    ——
3 :  ——     ——   —    —    —
4 :  ——     ——   —    —    —

Select 0—19: ——
```
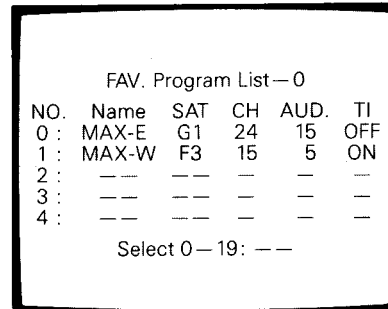
PARENTAL CONTROL

There are two features in PARENTAL CONTROL. One is antenna lock and the other is channel lockout. The password is needed to use this PARENTAL CONTROL feature. The factory preset password is 1048.

NOTE:
This function can be used only when receiver is in the AUTO mode. When PARENTAL CONTROL is on, the receiver can not be changed from AUTO to PROGRAM.

1. THE PARENTAL CONTROL PROGRAMMING

(a) Set the receiver to the AUTO mode.

(b) Press FUNCTION , 3 and the display will be as shown at right.

```
Parental Control
— Auto Mode —

Password needs
authorization.

Input password
Then (ENTER)

Password :  — — — —
```

(c) Input the password and press ENTER . When the password is correct, the display will be as shown at right.

(d) Select the item number (1 — 4).

```
3 PARENTAL CONTROL
— Auto Mode —

1. PL        : Enable
2. Antenna : Unlock
3. Channel Lockout
4. Change Password

Select 1 — 4 (▼▲)
Then (VIEW)
```

(e) The PARENTAL CONTROL items are as follows.

1. PC ENABLE / DISABLE
   By pressing EAST ☑ or WEST ☒ , select Enable or Disable.

2. ANTENNA LOCK PROGRAMMING
   By pressing EAST ☑ or WEST ☒ , the antenna can be locked or unlocked.

3. CHANNEL LOCKOUT PROGRAMMING
   When 3 is selected, the display will be changed as shown at right.

   ● Programming a channel lockout
     Select the desired channel by pressing EAST ☑ or WEST ☒ .
     Press ENTER and the channel is programmed to lockout and an L will be displayed as indicated at right.
     Press VIEW and the previous on-screen display will be back.

   ● Canceling a channel lockout
     By pressing EAST ☑ or WEST ☒ , select the channel that is locked out.
     Press CANCEL and the channel will not be locked out.
     Press VIEW and the previous on-screen display will be back.

```
        Channel Lockout
   1      2      3 L    4      5
   6   ⇥7      8      9 L    10
  11     12     13     14     15
  16     17     18     19     20
  21     22     23     24

Press (▼▲)
Then (ENTER) or (CANCEL)
```

On the C-band satellite.

```
        Channel Lockout
   1      2      3      4      5
   6      7      8      9     10
  11     12   ⇥13 L   14     15
  16     17     18     19     20
  21     22     23     24     25
  26     27     28     29     30
  31     32

Press (▼▲)
Then (ENTER) or (CANCEL)
```
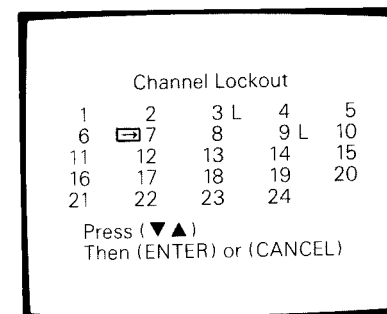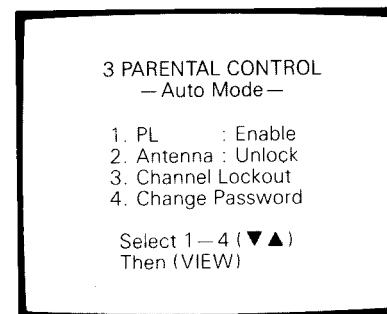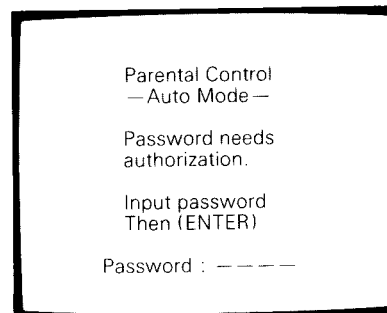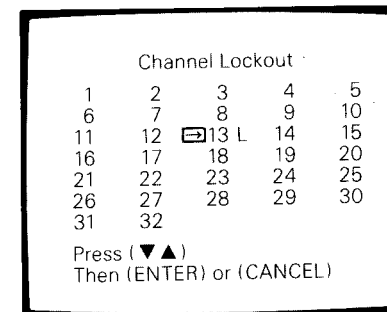
On the Ku-band satellite.

4. CHANGING A PASSWORD
   When [4] is selected, the display will be as
   shown at right.
   Input the new password (4 digit) by using the
   ALPHANUMERIC buttons and press [ENTER] to
   store. The display will be back to the parental
   control menu.

```
Change Password

Input new password
Then (ENTER)


Password: — — — —
```
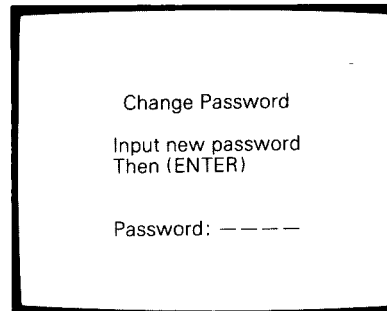
EX. When "1234" is entered as a new pass-
    word, the display will be as shown at right.

```
Password
1234
Authorized
```

(f) Press [VIEW] to return to normal mode.

```
3. PARENTAL CONTROL
   —Auto Mode—

1. PL        : Enable
2. Antenna : Unlock
3. Channel Lockout
4. Change Password

Select 1—4 (▼▲)
Then (VIEW)
```
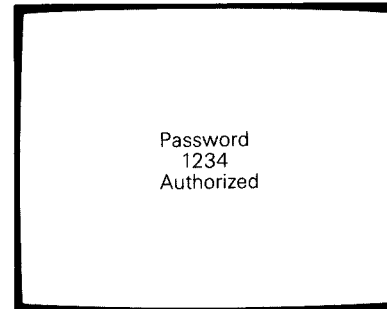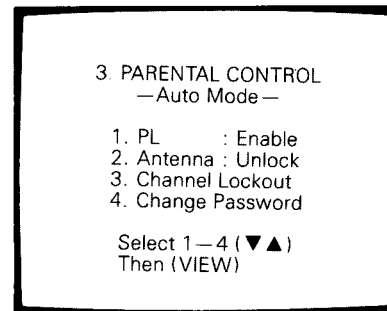
2. OPERATION OF THE PARENTAL CONTROL FEATURES

● When the antenna lock is on and EAST [∨] or WEST
[∧] is pressed to try to move the antenna, or if a sat-
ellite ALPHANUMERIC designation is entered, the
display will be as shown at right.

```
Parental Control
Antenna Locked
```
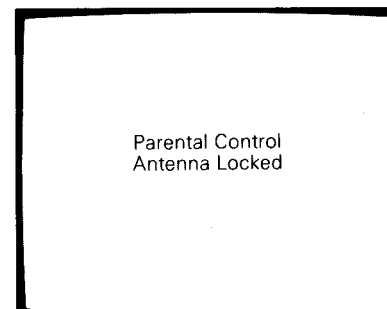
● When the channel lockout is on and a satellite chan-
nel is selected that is programmed to lockout, the
display will be as shown at right.

```
Parental Control
Channel Locked out
```

ADVANCED OPERATION
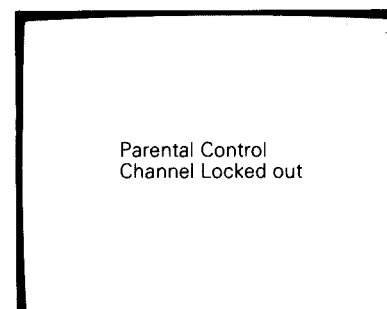
T.I FILTER & CH FINE TUNING

This receiver has a built in TI filter and storable frequency tuning by channel, with the TI/CH Fine function. By using this function, it is possible to reduce the sparkle noise in the picture, which is caused by terrestrial interference. Only when the AFC (Auto Frequency Control) is off, can the channel frequency be tuned. The TI filter ON/OFF selection and the channel fine tune can be stored by channel.

(a) Press [FUNCTION], [2], [2] and the display will be as shown at right.

```
┌─────────────────────────────┐
│                             │
│       TI Filter/CH Fine     │
│                             │
│    ➡1. AFC    : ON          │
│      2. TI Filter : OFF     │
│                             │
│                             │
│      Select 1—2 (▼▲)        │
│      Then (ENTER)           │
│                             │
└─────────────────────────────┘
```
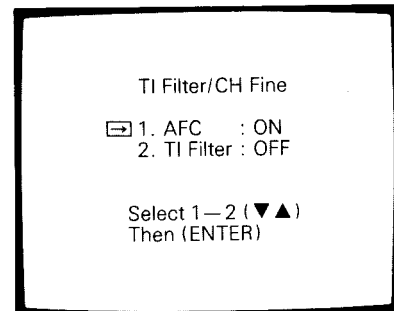
(b) Select 1—2.
By pressing or holding EAST [∨] or WEST [∧], turn the AFC & TI filter ON or OFF.

```
┌─────────────────────────────┐
│                             │
│       TI Filter/CH Fine     │
│                             │
│    ➡1. AFC    : OFF         │
│      2. TI Filter : OFF     │
│      3. CH Fine :           │
│            +5.000 MHz       │
│                             │
│      Select 1—3 (▼▲)        │
│      Then (ENTER)           │
│                             │
└─────────────────────────────┘
```
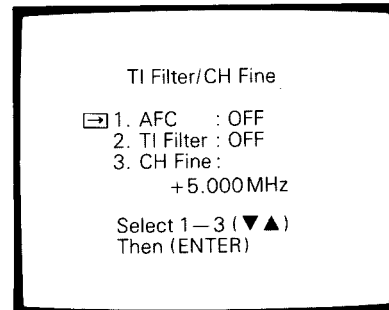
(c) The channel frequency can be tuned only when the AFC is OFF. Select [3] and press EAST [∨] or WEST [∧] to set the channel frequency.
Press [ENTER] to store.

Note: The TI filter can also be used to avoid bleed over from adjacent satellite channels, especially useful for tuning half transponder broadcasts on the Ku-Band.

DESCRAMBLER OPERATION

Your new satellite system may contain a VideoCipher® Renewable Security (VideoCipher® RS, or VCRS) descrambler. With this descrambler, Videocipher® scrambled channel can be enjoyed. This section describes how to use the descrambler.

I. GETTING STARTED

MODULE AUTHORIZATION

After your dealer has installed your new VCRS module, you or your dealer must follow the steps below.

1. Tune to a VideoCipher® scrambled channel. At this time the VideoCipher® signal LED should be illuminated on the receiver.

2. Press [SET UP] and [1] and [1]. The Unit ID will appear in two formats on the screen (shown below) in lines number 1 and 2. Please write the numbers down in the spaces provided:

Unit ID: _ _ _ _ - _ _ _ _ - _ _ _ _ - _ _ _ _

Phone ID: _ _ _ _ - _ _ _ _ - _ _ _ _ - _ _ _ _

These lines contain your unique unit identification numbers (which will differ from those shown at right) and are used by your program providers to authorize you for subscription program reception.

3. The installation data will also show Signal Quality on line 8. This should read greater than 60. If this signal reads less than 60, you may experience difficulty authorizing the module. Adjusting dish alignment, receiver video fine tuning, and/or skew may help to increase the Signal Quality received by the module. Press [VIEW] to leave this screen and resume normal viewing.

```
* INSTALLATION DATA *
VideoCipher RS Descrambler
 1) Unit ID:        0400-3057-FF4E
 2) Phone ID: 0100-0060-2577-7516
 3)
 4) Version: Module 1.0
 5) IRD S: Subscribed
 6) VIDEOpal not enabled
 7) Provider ID              153
 8) Signal Quality           100
 9) Trip Counter               1
10) Message Rate              10
11) Category               CO-4F
12) Location                 Set
        (Press VIEW to exit)
```

SUBSCRIPTION SERVICES TRANSFER: NEW OR EXISTING

4. Call the programmer(s) who provided subscription services on the old module (their telephone numbers are included with the new module for your convenience). This is necessary to transfer your subscription programs to your new module. Programmers may ask for the Unit ID that appeared on your most recent billing statement(s), or on the back of the older module. Your Programmers will also require the ID numbers noted in item 2 above. These numbers are also used for all new subscription purchases.

NOTE: The unit ID is sometimes referred to as the Unit Address, or UA.

5. After initiating or transferring services, leave the receiver tuned to a VideoCipher® scrambled channel until the module receives authorization and you are able to view the programs you ordered. If you view the Setup 1,1 screen again, you will notice that your trip counter number has increased.

ADVANCED OPERATION

DESCRAMBLER OPERATION

OPERATIONS: ON-SCREEN DISPLAYS AND DESCRIPTIONS

Once your module has received subscription authorization, you may want to take the time to become familiar with the many different features, capabilities, and on-screen displays (OSDs) that your VCRS module can produce and what purposes they serve. Your on-screen displays allow you to: 1) see how well your system is functioning on VideoCipher® channels; 2) receive important messages from your programmer; 3) limit access to programs with mature subject materials; or 4) use the Instant Pay-Per-View features of your module.

> **NOTE:** These on-screen displays are visible only on VideoCipher® channels.

THE SETUP SCREEN
Available Services Menu
The first screen you see after you press [SET UP] is "Available Services Menu". This menu simply allows you to choose the next screen you want to see from four available choices. If you wish to return to normal television viewing at any time, press [VIEW].

```
        Available Services Menu

     1. Unit Setup
     2. Personal Messages
     3. VideoCipher  Audio/Video
     4. System Information Service

          (Press 1—4, or VIEW)
```
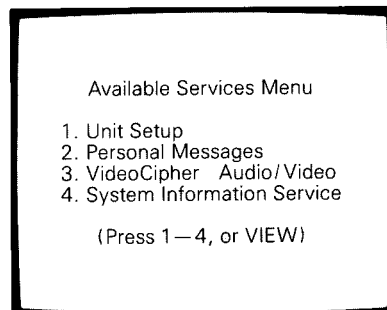
THE SETUP AND 1 SCREEN
VideoCipher® Unit Setup
Pressing [SET UP] and [1], will allow you to view the VideoCipher® Unit Setup screen. This screen contains eight different choices. Choices 1 through 4 are used for normal operation of the module, while choices 5 through 8 relate to instant pay-per-view operation. Press [VIEW] to leave this screen and resume normal viewing.

```
     VideoCipher  Unit Setup

        1. Installation Data
        2. Audio Selection
        3. Rating Ceiling
        4. Rating Password
        5. Purchase Password
        6. Purchase History
        7. Credit Information
        8. Reportback Status

     12-May-92     2:00 pm

     (Press 1—8, or VIEW)
```
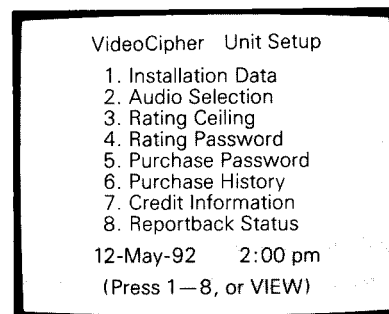
SETUP 2
Personal Messages
Pressing [SET UP] and [2], or the message key will allow you to view the Personal Messages screen. Unless your programmer has sent you a message, this screen will read "No Personal Messages". Press [HELP] for additional information on the Personal Messages screen. Press [VIEW] to leave this screen and return to normal viewing.

> **NOTE:** Your VCRS module cannot be disabled from receiving messages. Read messages (to remove the blinking message indicator) by pushing the [MESSAGE] key. Press [VIEW] to leave this screen and resume normal viewing.

SETUP 3
VideoCipher® Audio/Video

Pressing [SET UP] and [3] will allow you to view the programming currently offered on the VideoCipher® channel that you have selected. Selecting [VIEW] is the same as pressing [SET UP], [3].

SETUP 4
System Information Service

Pressing [SET UP] and [4] will allow you to view the Systems Information Services screen. This screen is intended for broadcast text messages and will be headed by the title VideoCipher® Text Service. This text service is broadcast at the programmer's option and may not be available on many channels. Press [HELP] for further information on the Systems Information Services screen. Press [VIEW] to leave this screen and return to normal viewing.

OTHER MODULE FUNCTIONS

In addition to the [SET UP] key functions, your VCRS module also offers some other key functions. They are listed below:

HELP
This key provides any additional information available for the screen you are viewing.

MESSAGE
This key allows you to view any personal messages you may have.

NEXT
This key allows you to see information about the next program being broadcast on the channel you are viewing. This information is transmitted at the programmer's option.

VIEW
This key allows you to see information about the current program. This may include the program name and how much time is left in the program. In addition, it returns you to normal viewing from any other on-screen display. The information displayed disappears after 5 seconds if the key is not pressed again.

NOTE: Not all programmers broadcast [VIEW] or [NEXT] information.

The VideoCipher® Unit Setup screen contains many important diagnostic items. Let's review them one at a time.

THE SETUP 1 AND 1 SCREEN
Checking The Unit Status

When you press [SET UP], [1] and [1] you will see the Installation Data screen. This screen provides information about unit and system operation. Press [HELP] for additional information on the Installation Data screen. Press [VIEW] to leave this screen and continue normal viewing, or press [ENTER] to return to the Setup menu.

```
* INSTALLATION DATA *
    VideoCipher RS Descrambler
 1) Unit ID:         0400-3057-FF4E
 2) Phone ID: 0100-0060-2577-7516
 3)
 4) Version: Module 1.0
 5) IRD S: Subscribed
 6) VIDEOpal not enabled
 7) Provider ID                 153
 8) Signal Quality              100
 9) Trip Counter                  1
10) Message Rate                 10
11) Category                  CO-4F
12) Location                    Set
        (Press VIEW to exit)
```

ADVANCED OPERATION

DESCRAMBLER OPERATION

Lines 1 and 2 contain your unique unit identification number, used by the programmer to authorize you for subscription programming.

Line 3 will be blank unless the VideoCipher® RS replaceable security element, the TvPass Card, is installed. It will then display a TvPass Card ID number.

> **NOTE:** The TvPass Card is not included in this initial shipment of the VCRS module.

Line 4 tells you what version of module and TvPass Card is in your system.

> **NOTE:** The numbers shown on your screen may be different than the ones shown above. The TvPass Card version will only show up if one is installed.

Line 5 tells you the scrambling status of the VideoCipher® channel to which you are currently tuned. Refer to the table below for possible displays.

MODEL TYPE	SCRAMBLING STATUS	AUTHORIZATION STATUS
DES = Module inserted into a standalone descrambler	F = Fixed Key	Subscribed
IRD = Module inserted into an integrated receiver descrambler	P = Processed, Unscrambled	Purchased
	S = Scrambled	Not Subscribed

Line 6 shows if your new module has been authorized for instant pay-per-view operation. This line will read, "VIDEOpal enabled" if the module is authorized for instant pay-per-view (see page 34 of this manual to authorize your built-in VIDEOpal Order Recorder).

Line 7 contains the unique Programmer ID code for each channel.

Line 8 is your Signal Quality. The maximum Signal Quality is 100. As noted earlier in the Authorization-section of this manual, if this number is less than 60, you may have difficulty authorizing the module and your satellite system is possibly in need of tuning or maintenance to operate properly.

Line 9 shows how many authorization change requests your module has received since you turned to this screen.

Line 10 shows if your module is receiving a clear signal from your satellite dish. The clearest signal will be a 10.

Line 11 shows if your system has received its monthly authorization update from the programmer. These numbers should be the same on all working descramblers, and will change on a monthly basis. Your programmer may ask about these characters should you have trouble gaining access to programming.

Line 12 shows that the programmer has your unit identification number stored properly, enabling you to receive the programming you have ordered.

THE SETUP 1 AND 2 SCREEN
Checking The Unit Settings
When you press [SET UP] , [1] and [2] you will see the
Audio Selection screen.

```
Unit Settings

Current Audio Selection is
* * *Primary* * *
Press 1 for Alternate Audio

(Press 1, 2, or ENTER)
```
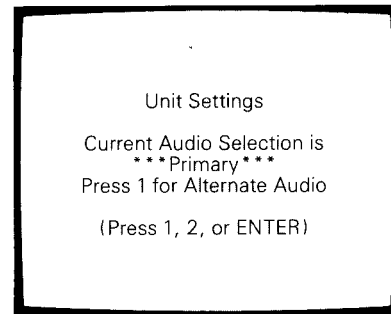
Current Audio Selection
This feature allows setting the audio on scrambled channels to either * * *Primary* * * or * * *Alternate* * *. The normal setting will be * * *Primary* * *. Scrambled channels may or may not broadcast an * * *Alternate* * * audio feed. Pressing [1] will change the module setting to * * *Alternate* * *. (Alternate could be a second language transmission.) Press [VIEW] at any time to resume normal viewing.

THE SETUP 1 AND 3 SCREEN
Setting The Rating Ceiling
Pressing [SET UP] , [1] and [3] reveals the Set Rating Ceiling screen. For example, if you set your Rating Ceiling at "PG-13", your module will require a password (if one has been set) before allowing viewing access of any movies with "R" or "X" ratings. You cannot, however, lockout shows with a "G" rating or non-rating, "NR". Refer to the guide below for a complete list of movie ratings.

```
SET RATING CEILING

PROGRAM RATING: NR
RATING CEILING: R

(Press ←, →, or ENTER)
```
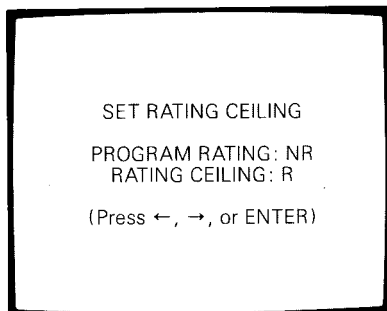
MOVIE RATINGS GUIDE

NONE — No Rating
G — General Audiences
PG — Parental Guidance Suggested
PG13 — Parental Guidance for Children Under 13
R — Restricted
NR — Not Rated; Used for Non-Rated Adult Programming
NC17 — No Children 17 or Under
X — Adult, No One Under 18

ADVANCED OPERATION

The Program Rating line shows the rating the current program carries. An "NR" on this line indicates the program being viewed is not rated by the Motion Picture Association of America (MPAA). The Rating Ceiling line indicates the highest rating the module will allow to be viewed. To set the level, press the left or right arrow keys until the rating ceiling reaches the desired level. If you wish to insure that no programs are locked out due to Rating Ceiling, this setting should remain at "X". Remember, you must press [ENTER] to save the changes and it is advisable to set a password, as described below, to enforce this rating level. Press [HELP] for additional information on the Set Rating Ceiling screen. Press [VIEW] to return to normal viewing.

DESCRAMBLER OPERATION

THE SETUP 1 AND 4 SCREEN
Setting A Rating Password
Pressing [SET UP] , [1] and [4] allows you to establish
a Rating Password. This screen will allow putting
a password into place so that the Rating Ceiling can
only be changed by you.

```
┌─────────────────────────────┐
│                             │
│                             │
│      SET RATING PASSWORD    │
│                             │
│       Enter the new Program │
│      Rating Password (0 to 8│
│      digits, followed by ENTER).│
│                             │
│                             │
└─────────────────────────────┘
```
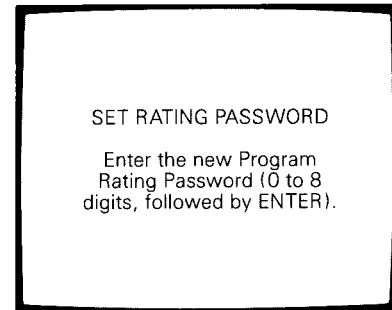
To Set A Rating Password
Choose an easy to remember number (a birth date, etc.). Enter up to 8 characters (the screen will show one * for
each number pressed) and press [ENTER] . The module will ask you to enter your password again for confirmation.
Enter the same numbers, followed by [ENTER] . Your new Rating Ceiling Password will be stored. If you make
a mistake, use the left arrow key to erase the entry. If you decide to change your Rating Ceiling ([SET UP] [1] and
[3]), the module will ask you to enter the existing Rating Password. After the password has been entered, you can
change your Rating Ceiling as described above. Press [HELP] for further information on the Set Rating Password
screen. Press [VIEW] to leave this screen and resume normal viewing.

To Remove A Rating Password
Press [SET UP] , [1] and [4] to re-enter the Password screen. Next, enter the existing password, then press [ENTER] .
Now, press [ENTER] two more times to remove your Rating Ceiling Password. If you want to set a new password,
follow the instructions above. Press [VIEW] to resume normal viewing.

THE TvPass Card

In the event of a change in Programmers' authorization levels, programmers may decide to utilize the card authoriza-
tion feature of the VCRS module. This feature consists of a TvPass Card, which is a plastic "smart card", about the
size of an average credit card. This card will fit into the slot provided in the rear of the module, at the back of IRD.

If a TvPass Card is in use with this VCRS module, you will need to be aware of some additional OSDs. These OSDs
are designed to inform you of satellite system problems relating to the installation and use of the TvPass Card. These
displays will appear automatically on all VideoCipher® Channels in the event of a problem with your TvPass Card.

┌──┐
│ **NOTE:** These displays cannot be seen unless the TvPass Card system is in use and you are tuned to a Video- │
│ Cipher® channel. The TvPass Card is not included in this initial shipment of the VCRS module. │
└──┘

CONDITION

EXPLANATION/ACTION

TvPass Card Not Installed

```
PLEASE INSERT
A TVPASS CARD
```
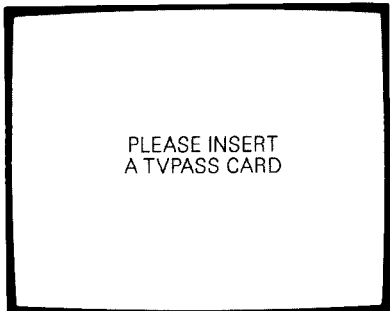
System authorization has been upgraded to a higher level, which now requires a TvPass Card.

1. Insert your TvPass Card into the VCRS descrambler via the opening in the back of the module.

2. If this screen appears and you do not have a TvPass Card, contact your program provider.

TvPass Card Installation Error

```
*TvPass Card INSTALLATION ERROR*

It may:
        -be inserted backwards
        -be inserted upside down
        -not be a TvPass Card

Remove card, check and reinsert.

If condition persists, contact your
program provider.
```
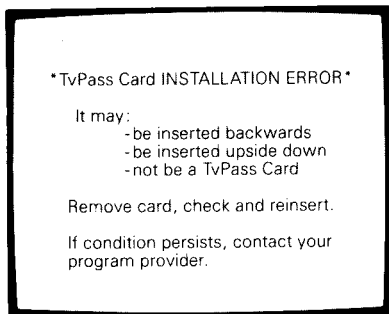
The TvPass Card you are attempting to install is not working properly. Please make sure that its orientation is correct. Only General Instrument TvPass Cards will work in this VCRS descrambler. Contact your program provider if this problem persists.

TvPass Card Needs Information

```
This TvPass Card needs additional
information to operate.

Write these numbers down:
1) Phone ID: 0020-1003-0100-0133
2) Card ID: 5253-5741-6720-0333

Leave your TvPass Card installed.
Contact your program provider.

Stay tuned to this channel.
```
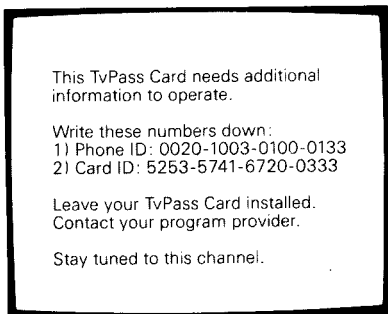
This TvPass Card needs additional information to operate. Write down the numbers appearing on your screen, leave your TvPass Card installed, stay tuned to this channel, and contact your program provider.

Phone ID:

_ _ _ _ - _ _ _ _ - _ _ _ _ - _ _ _ _

Card ID:

_ _ _ _ - _ _ _ _ - _ _ _ _ - _ _ _ _

Descrambler Not Authorized

```
This Descrambler does not have
current authorization.

Write these numbers down:
1) Phone ID: 0020-1003-0100-0133
2) Card ID: 5253-5741-6720-0333

Leave your TvPass Card installed.
Contact your program provider.

Stay tuned to this channel.
```

This descrambler is not currently authorized. Write down the numbers appearing on your screen, leave your TvPass Card installed, stay tuned to this channel, and contact your program provider.

Phone ID:

_ _ _ _ - _ _ _ _ - _ _ _ _ - _ _ _ _

Card ID:

_ _ _ _ - _ _ _ _ - _ _ _ _ - _ _ _ _

ADVANCED OPERATION

DESCRAMBLER OPERATION

Wrong TvPass Card In Descrambler

```
*ERROR*

This TvPass Card will not work
with this Descrambler.

Please remove the TvPass Card.

Return TvPass Card to correct
Descrambler.
```

This TvPass Card was authorized in a different VCRS-equipped IRD, and cannot be moved to this VCRS descrambler. You must return it to the original unit.

II. INSTANT PAY-PER-VIEW

THE WORLD OF VIDEOPAL® INSTANT PAY-PER-VIEW

The VIDEOpal Order Recorder is a breakthrough in home satellite viewing. It provides your system with instant pay-per-view at the touch of a button! With it, you'll enjoy many special programs and events once available only to cable subscribers or on videotape. The benefits of the VIDEOpal system are many.

INSTALLATION INFORMATION

FCC-Required Notification
Type Of Service
The built-in VIDEOpal system in the VCRS module is designed to be used on standard telephone lines and connects to the telephone line by means of a standard jack called the USOC RJIIC. Connection to telephone company-provided coin service (central office implemented systems) is prohibited.

Telephone Company Procedures
In order for your telephone company to provide you service, it may occasionally be necessary for them to make changes in their equipment, operations, or procedures. If these ch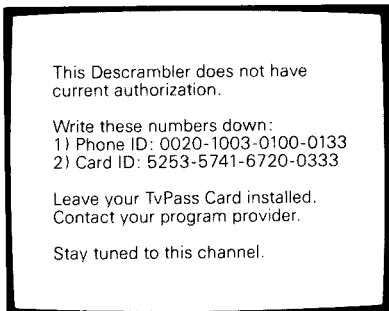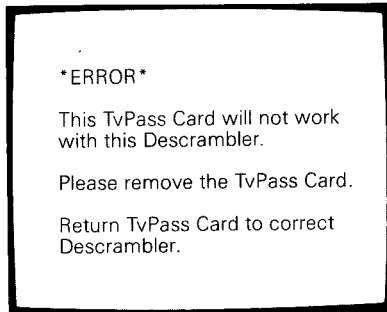anges affect your service or the operation of your equipment, the telephone company should give you notice, in writing, to allow you to make any changes necessary to maintain uninterrupted service. If you have any questions about your telephone line, such as how many pieces of equipment you can connect to it, your telephone company should provide this information upon request. In certain circumstances, it may be necessary for your telephone company to request information from you concerning the equipment which you have connected to your telephone line. Upon request of your telephone company, provide the FCC registration number and the Ringer Equivalence Number (REN) of the equipment which is connected to your line: both of these items are listed on the equipment lable. The sum of all the RENs on your telephone lines should be less than five in order to assure proper service from your telephone company. In some cases, a sum of five may not be usable on a given line.

NOTE: The REN for your built-in VIDEOpal system in the VCRS module is 0.3B.

If Problems Arise
If any of your telephone equipment is not operating properly, you should immediately remove it from your telephone line, as it may cause harm to the telephone network. If your telephone company notes a problem, they may temporarily discontinue service. When practical, they will notify you in advance of this disconnection. If advance notice is not feasible, you should be notified as soon as possible. When you are notified, you should be given the opportunity to correct the problem and be informed of your right to file a complaint with the FCC.

NOTE: The VIDEIOpal Order Recorder will not work properly at this time if you are on a party line or if operator assistance is required to make long distance telephone calls.

NOTICE FOR CANADIAN USERS

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction. Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service is some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment. Users should ensure, for their own protection, that the electrical ground connections of the powre utility, telephone lines, and internal metallic water pipe system (if present) are connected together. This precaution may be particularly important in rural areas.

CAUTION: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician.

The Load Number for the VCRS with the internal VIDEOpal system is 7.

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the load numbers of all the devices does not exceed 100.

PAY-PER-VIEW AUTHORIZATION WITH THE SATELLITE VIDEO CENTER

To authorize your VCRS module for pay-per-view programming, please follow these simple steps:

1. Ensure proper connection of the module to the telephone system as explained in the installation instructions. It is necessary for the module to be connected to a live telephone line for pay-per-view authorization. It is suggested that you test this line by connecting a telephone to this line and placing a call. Be sure to reconnect the telephone line to the module before proceeding with authorization.

2. Tune to a VideoCipher® scrambled channel and verify proper signal strength. Press [SET UP] , [1] and [1] to verify. The signal strength that appears on line 8 should read greater than 60. If this signal reads less than 60, you may experience difficulty authorizing the module. Adjusting dish alignment, receiver tuning, and/or skew may help to increase the module Signal Quality.

```
       • INSTALLATION DATA •
      VideoCipher RS Descrambler
 1) Unit ID:          0400-3057-FF4E
 2) Phone ID: 0100-0060-2577-7516
 3)
 4) Version: Module 1.0
 5) IRD S: Subscribed
 6) VIDEOpal not enabled
 7) Provider ID                  153
 8) Signal Quality               100
 9) Trip Counter                   1
10) Message Rate                  10
11) Category                   CO-4F
12) Location                     Set
          (Press VIEW to exit)
```

3. Call your pay-per-view program provider or the Satellite Video Center at 800-54-VIDEO (800-548-4336). A Customer Service Representative will assist you in setting up an account to purchase pay-per-view. The module is authorized for pay-per-view when Line 6 reads "VIDEOpal enabled".

ADVANCED OPERATION

DESCRAMBLER OPERATION

ON-SCREEN DISPLAYS AND DESCRIPTIONS FOR PAY-PER-VIEW

THE SETUP 1 AND 5 SCREEN
Setting/changing Purchase Passwords

1. Press [SET UP] , [1] and [5] to establish a purchase password. This screen allows you to limit access to pay-per-view programming, by setting a security password for use with the module's internal VIDEOpal Order Recorder. For example, you may wish to prevent purchases by children or babysitters in your home. This feature is for customer convenience, but is not required to operate the instant pay-per-view feature. It is, however, strongly suggested that a password be used in order to prevent unauthorized pay-per-view purchases. Press [HELP] for further information on the Purchase Password screen. Press [VIEW] to leave this screen and resume normal viewing.

```
+-----------------------------------+
|                                   |
|                                   |
|       SET PURCHASE PASSWORD       |
|                                   |
|        Enter the new Program      |
|  Purchase Password (0 to 8 digits,|
|        followed by ENTER).        |
|                                   |
|            Password:              |
|                                   |
+-----------------------------------+
```
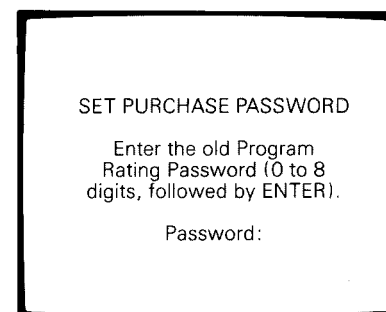
2. There are two types of passwords with this product. You may have already set a Rating Password, now you are going to set a Purchase Password. Choose an easy to remember number (such as an anniversary, etc.). Enter up to 8 characters (the screen will show one * for each number pressed) and then press [ENTER] . For confirmation, the module will ask you to enter your new password again. Enter the same numbers, followed by the [ENTER] key. Your new Purchase Password will be stored. If you then wish to make a purchase, you will be asked to enter the Purchase Password. Enter it as instructed above and you will be allowed to complete your purchase.

To Change A Purchase Password
Follow these simple steps:
1. Press the [SET UP] , [1] and [5] keys on the remote control and follow the directions on your screen.

```
+-----------------------------------+
|                                   |
|                                   |
|       SET PURCHASE PASSWORD       |
|                                   |
|        Enter the old Program      |
|         Rating Password (0 to 8   |
|      digits, followed by ENTER).  |
|                                   |
|            Password:              |
|                                   |
+-----------------------------------+
```

Removing A Password
Press [SET UP] , [1] and [5] to re-enter the Password screen. Next, enter the existing password, then press [ENTER] . Now, press [ENTER] two more times to remove your Purchase Password. If you want to set a new password, follow the instructions at the top of this page. Press [VIEW] to resume normal viewing.

NOTE: If you should forget your password, it may be necessary to call your pay-per-view program provider or the Satellite Video Center at 800-54-VIDEO. They will remove the forgotten password via satellite. This will reset the Purchase Password and the Rating Password, making it necessary to reset both. There may be a charge for a password reset.

THE SETUP 1 AND 6 SCREEN
Purchase History

Pressing the [SET UP] , [1] and [6] buttons will allow you to view the Purchase History screen. This screen will allow you to review the 16 most recent programs purchased with your instant pay-per-view feature. Use the left and right arrow keys on your remote control to see all 16 purchases. Press [HELP] for additional information on the Purchase History screen. Press [VIEW] to leave this screen and resume normal viewing. (If you have no purchase history, you will only view the Unit Setup screen.)

```
        PURCHASE HISTORY

     9-Sep.-91   11:00pm   $3.99

        *SHIPWRECKED* *PG*
        ON ABC PAY-PER-VIEW
```
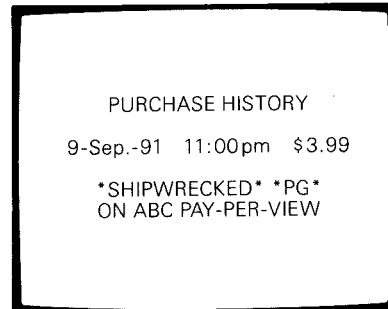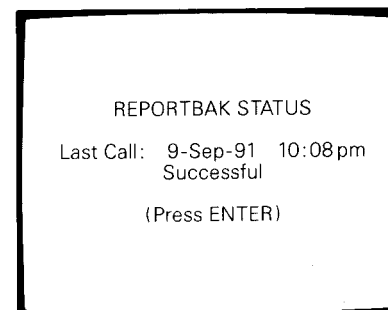
THE SETUP 1 AND 7 SCREEN
Credit Information

Pressing [SET UP] , [1] and [7] will allow you to view the Credit Information screen. The Satellite Video Center (or another authorization center) may ask you to read this screen if the unit's instant pay-per-view services are interrupted. The credit amount shown at the top of the screen does not represent dollars credited to the unit account — it is for administrative purposes only. The last line indicates whether or not you have established an account to purchase programs with the Satellite Video Center. Press [HELP] for additional information on the Credit Information screen. Press [VIEW] to leave this screen and resume normal viewing. You will not be able to access this screen if you have not established VIDEOpal services.

```
        CREDIT INFORMATION

   Descrambler Credit:      45.00

       Credit Verification:
     F246  ODOB  94AB  3678  FB

   You have established an account to
        purchase programs.

          (Press ENTER)
```

THE SETUP 1 AND 8 SCREEN
Reportback Status

Pressing [SET UP] , [1] and [8] will allow you to view the Reportback Status screen. Periodically, the VIDEOpal Order Recorder will report through a toll-free (800) number, any instant pay-per-view purchases that have been made. This screen will display whether or not the last reportback attempt was successful. The screen should always read SUCCESSFUL. If this screen reads anything else, please check the telephone cable connection on the rear of the module and contact the Satellite Video Center at 800-54-VIDEO. Press [HELP] for additional information on the Reportback Status screen. Press [VIEW] to leave this screen and resume normal viewing.

```
        REPORTBAK STATUS

   Last Call:  9-Sep-91  10:08pm
           Successful

          (Press ENTER)
```

ADVANCED OPERATION

DESCRAMBLER OPERATION

Instant Pay-Per-View Operation

Once authorized by the Satellite Video Center, your module provides you with the ability to purchase pay-per-view services on satellite. Simply consult your program listings for available program services and follow the instructions below to enjoy VCRS pay-per-view programming.

Satellite Video Center Pay-Per-View Programs

The VIDEOpal built into the module allows purchase of the current program being offered on pay-per-view channels or the program coming up next after the current program ends.
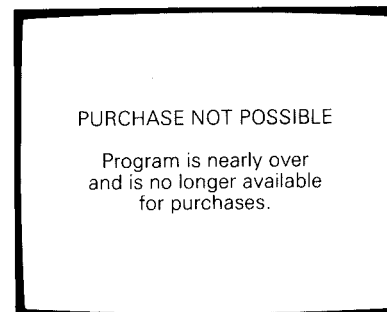
Purchasing The Current Program

1. Tune the satellite receiver to the satellite and transponder (channel) of the pay-per-view program you wish to purchase. For a complete listing of pay-per-view movies and events, check your satellite program guide.

2. Press [VIEW] for purchasing information. This screen will display the name of the program, the amount of time remaining in the program (if it has already started), and the price of the program.

3. To order the program, press the [ENTER] key, enter the password (if there is one), then press [ENTER] again to confirm the order. *That's all it takes!*

```
PROGRAM TITLE

COST:
( + APPLICABLE TAXES)
TIME STARTS IN:

*ENTER*
```
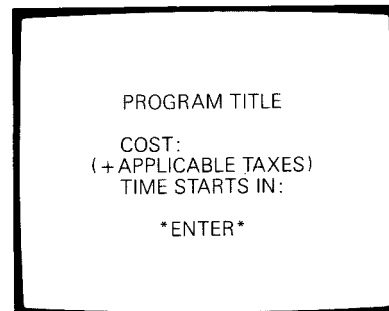
Current Program Screen

NOTE: Pay special attention to the time the program ends. Your account will be billed for the full program price regardless of how much of the program has elapsed before you order. Also, Rating Ceiling lockout applies prior to confirmation of purchase, if active.

NOTE: All programmers have the ability to prevent a late program purchase after some portion of the program has already elapsed. For example, if you should accidentally try to purchase a program after it has passed the halfway mark, you may see a message stating that you cannot purchase this program. This lockout feature, called the Purchase Window, is optional with each programmer who may or may not decide to use it.

```
PURCHASE NOT POSSIBLE

Program is nearly over
and is no longer available
for purchases.
```

Purchase Window Screen

Purchasing The Next Program

1. To order the next program, tune the satellite receiver or IRD to the correct satellite and transponder (channel) and press [NEXT] . The screen will display information on the program title, cost, and the amount of time remaining before the next program begins. You may also consult a satellite guide for program availability.

```
        PROGRAM TITLE

        Rating:  PG 13
          Cost:  4.95
     ( + APPLICABLE TAXES)

        Starts:  7:37 am
      Starts in:  1-25:15

 * Press ENTER to purchase program *
```
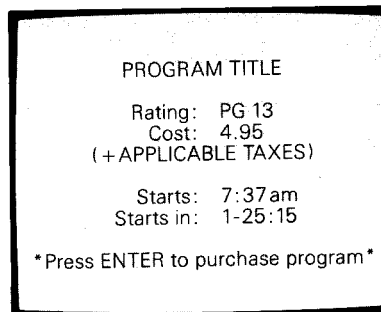
Next Program Screen

2. The screen will prompt you to press [ENTER] to purchase the next program. Press [ENTER] if you wish to order the program, enter the purchase password (if there is one), and then press [ENTER] again to confirm the order. Keep your IRD turned on and wait for the start of the next program. You may buy only one show in advance.

IMPORTANT: Cancelling The Program After Ordered

It is possible to cancel the NEXT program once it has been ordered. Should you decide not to view the program coming up next, simply change the channel. Or, you may also press [NEXT] and then [ENTER] at the "press ENTER to CANCEL" prompt before the program begins. Your account will not be billed for the purchase of the program if it is cancelled before it begins. It is not possible, however, to cancel the current program once it has been purchased and the program has begun.

Note: VIDEOCIPHER® RS is a registered trademark of GENERAL INSTRUMENT CORPORATION.

TvPass™ Card is a trademark of GENERAL INSTRUMENT CORPORATION.

VIDEOCIPHER® RS trademark is used under license from CABLE/HOME COMMUNICATIONS CORP. (C/HCC), subsidiary of GENERAL INSTRUMENT CORPORATION.

To enable your satellite descrambler and obtain proper authorization for descrambling, appropriate programming providers or their agents must be contacted.

ADVANCED OPERATION

DESCRAMBLER OPERATION

VIDEOPAL® QUESTIONS AND ANSWERS

Q) What happen if the phone line to the VCRS system is accidentally unplugged?

A) If the unit should be disconnected from your home telephone system your pay-per-view programming services may be interrupted. If your service is discontinued, you must call the billing center or the Satellite Video Center for re-authorization.

Q) Will the VIDEOpal system interfere with my phone service?

A) Usually not. The VIDEOpal system is called upon to use your phone line when you are least likely to be using it. If you should pick up your receiver and hear a very unusual noise, it may be the VIDEOpal unit communicating with the Satellite Video Center's (or billing center's) computer at the other end. Please hang up and try your call again.

Q) Do I have to pay for the phone call?

A) The VIDEOpal Order Recorder calls in on a special toll-free (800) number so you shouldn't see the call on your monthly phone bill.

Q) How long do the calls last?

A) Typically, they last less than 15 seconds and they are usually made late at night when you are least likely to be using your telephone.

Q) Will the VIDEOpal system interfere with my telephone answering service or answering machine?

A) The VIDEOpal module is not equipped to receive phone calls, only make them. If your service or answering machine is not currently disturbed by outgoing calls, the VIDEOpal system should not cause any problems.

Q) I'm on a party line. What happens if my VIDEOpal unit tries to make a call and someone else is on the line?

A) The VIDEOpal will not work with party lines, or if you require an operator's assistance to make long distance calls.

Q) I have call forwarding / call waiting. Will the VIDEOpal system have any affect on it?

A) The VIDEOpal features should not have any affect on these services.

Q) I sometimes unplug my phone at night. Will that affect the VIDEOpal system's ability to call out?

A) It is all right to unplug your phone, however, be certain to unplug it rather than leave the receiver off the hook. Leave the VIDEOpal unit plugged into the phone line at all times.

Q) What if I should happen to forget my password?

A) If you should forget your password, it will be necessary to call the Satellite Video Center (or your billing center). They will remove the password for you, along with any other VCRS passwords. (There may be a service charge for this.) You may then enter a new password if you wish. **NOTE:** The VIDEOpal password may be the same as your VCRS password.

Q) What if I should change channels while the event is taking place, and then tune back to the same channel? Will I be charged twice for the same program?

A) No. To clarify, you will not be charged again when returning to a purchased program, even if you purchased a second program before returning to the original.

Q) What if I purchase the NEXT program, but then don't watch it?

A) Your account won't be charged for any programming you order in advance if your receiver is tuned to a different channel before the next program starts.

Q) How far in advance may I order a program?

A) You may order only the program in progress or the next program available.

Q) My telelphone sometimes chirps when the VIDEOpal Order Recorder is making a phone call. Is this normal?

A) There are two basic types of phone service your phone company may offer: Rotary/Pulse (mechanical dial) and Tone (push button). Many electronic push button telephones will work with Rotary/Pulse service by using the Pulse dialing method (after pressing the telephone's buttons you will hear a clicking sound in the receiver.) The VIDEOpal Order Recorder operates in the same manner as a Pulse telephone and may cause some telephones to chirp briefly when it makes a call. This will not interfere with your telephone service or your telephone.

Q) I cannot receive the channel. What do I do?

A) Operation of the VIDEOpal system is almost totally automatic and there are no adjustments necessary. If you should ever experience any difficulty using the VIDEOpal system, please refer to the following troubleshooting suggestions:

1) Check all connections and make sure that the power is ON to all components.

2) Make certain that your satellite system is tuned to the correct satellite and channel. **NOTE:** Weather conditions and your geographical location may affect signal quality.

3) Check a program guide to make certain that the program you're interested in is available for pay-per-view and can be ordered with the VIDEOpal system.

4) Make certain your account is current (press `SET UP`, `1`, `7` for possible on-screen directions).

ATTENTION:

This consumer unit is intended for the authorized descrambling for personal use of those satellite television signals which have been scrambled using the VIDEOCIPHER® II or VIDEOCIPHER® II Plus scrambling format. Ownership or possession of the descrambler does not entitle (not enable) the owner or possessor thereof to receive descrambled VIDEOCIPHER® II or VIDEOCIPHER® II Plus television signals. To obtain proper authorization for this consumer descrambler, the owner or possessor must separately contract with the appropriate programming provider(s) or this (their) agent(s).

U.S. government restrictions may prohibit the export of this product outside the United States, its territories, or possessions without a valid export license.

ADVANCED OPERATION

MAIN FUNCTIONS

MAIN MENU

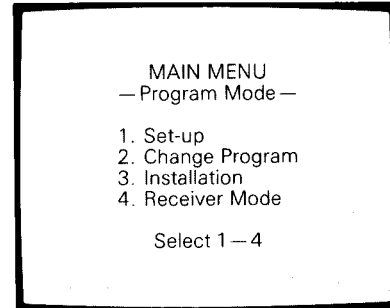| —PROGRAM MODE—		—AUTO MODE—	

1. SET-UP	1.1 REM IND.
	1.2 CH SCAN
	1.3 AUTO TUNING
	1.4 INPUT MODE
	   (C/KU OR H/V)
		1. CUSTOMER
		   CHOICE
			1.1 REM IND.
			1.2 BASIC OSD
			1.3 ANT. MOVE BLANK
			1.4 SKIP TUNING

2. CHANGE
   PROGRAM
	2.1 CHANGE POLARITY/SKEW
	2.2 TI FILTER/CH FINE
	2.3 CHANGE ANT. LIMIT
		2. CHANGE
		   PROGRAM
			2.1 CHANGE POLARITY/SKEW
			2.2 TI FILTER/CH FINE TUNING
			2.3 CHANNEL SKIP
			2.4 AUDIO PROGRAM
			2.5 CATEGORY SELECTION
			2.6 FAVORITE PROGRAM
			2.7 REALIGN SAT. MEMORY

3. INSTALLATION	3.1 KU-SAT FORMAT 3.2 CALIBRATE KU-CH 3.3 REM NOISE SENSOR 3.4 ALL DATA CLEAR	3. PARENTAL CONTROL	3.1 PL ENABLE/DISABLE 3.2 ANTENNA LOCK 3.3 CH LOCKOUT 3.4 CHANGE PASSWORD

4. RECEIVER MODE
   (AUTO/PROGRAM)
		4. RECEIVER MODE
		   (AUTO/PROGRAM)	

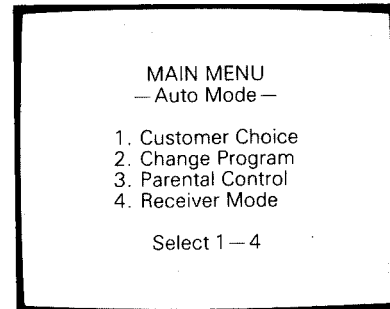These functions can be easily used with [FUNCTION] and an ALPHANUMERIC BUTTON as follows.

1. BASIC OPERATION OF THE MAIN FUNCTIONS

(a) Press [FUNCTION] and the main menu will be displayed as shown at right.

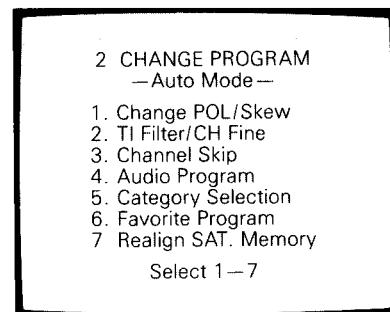Note: If parental control is enabled, the receiver cannot be set into the program mode. See page 21.

```
         MAIN MENU
       — Program Mode —

       1. Set-up
       2. Change Program
       3. Installation
       4. Receiver Mode

          Select 1 — 4
```

IN THE PROGRAM MODE

```
         MAIN MENU
        — Auto Mode —

       1. Customer Choice
       2. Change Program
       3. Parental Control
       4. Receiver Mode

          Select 1 — 4
```
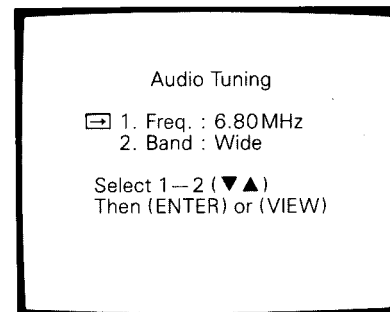
IN THE AUTO MODE

(b) Select the desired main function number by pressing an ALPHANUMERIC button. The main function chosen will be displayed as shown at right.
Ex. 1. When [FUNCTION], [2] is pressed in the AUTO mode.

```
    2  CHANGE PROGRAM
        — Auto Mode —

    1. Change POL/Skew
    2. TI Filter/CH Fine
    3. Channel Skip
    4. Audio Program
    5. Category Selection
    6. Favorite Program
    7  Realign SAT. Memory

         Select 1 — 7
```

(c) Select the desired item number by an ALPHANUMERIC button. Operating instructions will appear on screen.
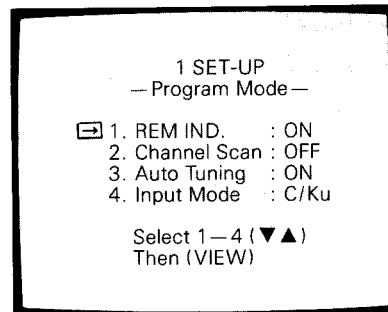Ex. 2. When [4] is pressed after Ex. 1.

```
        Audio Tuning

    ⊡ 1. Freq. : 6.80 MHz
       2. Band : Wide

    Select 1 — 2 ( ▼ ▲ )
    Then (ENTER) or (VIEW)
```

ADVANCED OPERATION

—PROGRAM MODE—

1. SET UP

(a) Press FUNCTION , 1 and the SET UP menu will be displayed as shown at right.

(b) Select the item number (1—4).
Press EAST ▼ or WEST ▲ to set the desired mode.

(c) Press VIEW to return.

The SET UP items are as follows.

```
            1 SET-UP
          — Program Mode —

    ⮕ 1. REM IND.     : ON
      2. Channel Scan : OFF
      3. Auto Tuning  : ON
      4. Input Mode   : C/Ku

      Select 1—4 (▼▲)
      Then (VIEW)
```

1.1 REMOTE CONTROL INDICATOR (ON/OFF)

This function is used to turn the remote control indicator on the front panel on or off.

1.2 CHANNEL SCAN (ON/OFF)

The channel scan feature allows the receiver to search rapidly for an active channel. The receiver stops scanning when a signal is found. When the channel signal is lost, the receiver begins scanning again. See the SATELLITE POSITION MEMORY section (page 11).

1.3 AUTO TUNING (ON/OFF)

When this function is on, the antenna position and the skew is automatically fine-tuned.

1.4 INPUT MODE SELECTION (C/Ku or H/V)

Select C/Ku or H/V in accordance with the antenna and LNB configuration being used.

2. CHANGE PROGRAM

2.1 CHANGE POLARITY AND SKEW

Polarity settings are factory programmed and are se-
lected when recalling a satellite and a channel. Normally
it is not necessary to change the poloarity. When the
factory polarity does not correspond to the channel
polarity, it can be changed and stored.
The CHANGE POLARITY AND SKEW function is avail-
able both in the PROGRAM mode and AUTO mode.

(a) Press [FUNCTION], [2], [1] and the display will be as
shown at right.

(b) Select 1—3.

(c) By pressing EAST [∨] or WEST [∧] , set the format
and skew desired.

(d) Press [ENTER] to store the data.

The items are as follows.

● C-band

1. FORMAT
   Select NORMAL for the factory programmed polar-
   ity, or select INVERSE for the opposite polarity.
   The selected polarity is set to every channel.

2. SKEW
   Changes the angle of the probe in the feedhorn.
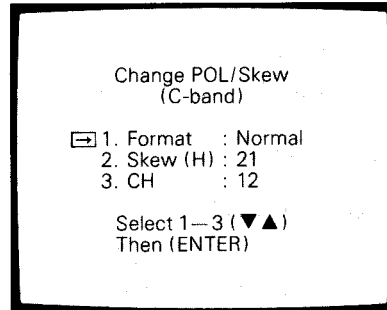
3. CH
   Changes the satellite channel being received.

● Ku-band

1. POLARITY
   Select H for the horizontal polarity, or V for the
   vertical polarity.

2. SKEW
   Changes the angle of the probe in the feedhorn.
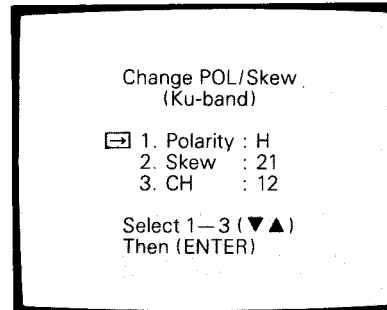
3. CH
   Changes the satellite channel being received.

2.2 TI FILTER AND CH FINE TUNING

By using this function it is possible to reduce the sparkle
noise in the picture, which is caused by terrestrial inter-
ference.
See page 23 for operation.

```
          Change POL/Skew
              (C-band)

       ⇨ 1. Format    : Normal
          2. Skew (H) : 21
          3. CH        : 12

          Select 1—3 ( ▼ ▲ )
          Then (ENTER)
```

On the C-band satellite.

```
          Change POL/Skew
              (Ku-band)

       ⇨ 1. Polarity : H
          2. Skew    : 21
          3. CH      : 12

          Select 1—3 ( ▼ ▲ )
          Then (ENTER)
```
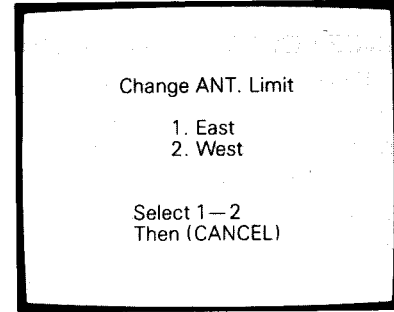
On the Ku-band satellite.

ADVANCED OPERATION

2.3 CHANGE ANTENNA LIMIT

The antenna limits can be changed as follows.

(a) Set the receiver to PROGRAM mode.

(b) Press [FUNCTION], [2], [3] and the display will be as shown at right.

(c) Select [1] for EAST limit, [2] for WEST limit and press [CANCEL] to cancel the old antenna limit.
Ex. Select [1] for the EAST limit and then [CANCEL].

(d) Move the dish to the new east or west limit.
Press [ENTER] to store the new antenna limit.

```
Change ANT. Limit

    1. East
    2. West


Select 1—2
Then (CANCEL)
```

```
Change ANT. Limit

Move dish to
new East Limit.


Press (▼▲)
Then (ENTER)
```

3. INSTALLATION

3.1 KU SAT. FORMAT

This function is used to specify the Ku-band satellite channel format, number of channels, polarity, and center frequencies for any new satellites. This will be helpful when programming a new Ku-band satellite that does not appear on the satellite chart in the programming section of this manual. The time required to program a new satellite is reduced by assigning it a similar existing format. This function can be used as follows.

(a) Set the receiver to the PROGRAM mode.
Press [Ku-SAT] and enter the satellite designation that is desired to match the specified format.

(b) Press [FUNCTION], [3], [1] and select the desired satellite format (1—5).
Press [ENTER] to specify the format.

```
Ku-SAT. Format

    1. SBS 1—5
    2. SBS 6
    3. Anik
    4. G-Star
    5. GE

Select 1—5
Then (ENTER)
```
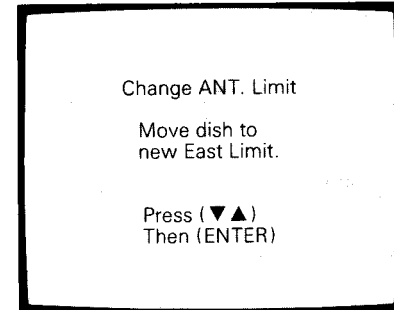
3.2 CALIBRATE Ku-CHANNEL

This function is used to assign any channel frequency to any channel number on the Ku-band. A Ku-band satellite channel can be programmed as follows.

(a) Set the receiver to the AUTO mode.
Select the Ku-band satellite to be calibrated.

(b) Set the receiver to the PROGRAM mode.

(c) By using the channel [▼] or [▲] buttons, or the ALPHANUMERIC buttons, input the channel number to be programmed.

(d) Press [FUNCTION], [3], [2] and the display will be as shown at right.

(e) By using the EAST [▼] or WEST [▲] buttons, adjust the frequency for the best picture.

(f) Press [ENTER] to store the channel frequency.

```
Calibrate Ku-CH

G-Star 1              CH: 6
(Ku-band)            POL: V
    12.035000GHz


Press (▼▲)
Then (ENTER)
```
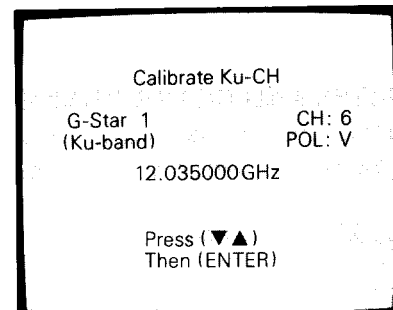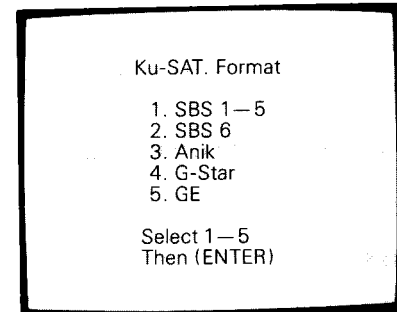
If it is desired to program additional channels, operate again from (c). When completed, set the receiver mode to AUTO.

3.3 REM (Remote Control) NOISE SENSOR

The remote noise sensor detects unwanted interference which can inhibit proper operation of the Remote Control unit (RCU). Using the indicators on the front panel, it is possible to reorient the UHF antenna to minimize the amount of noise being received. This is essential for maximum Remote Control performance.

(a) Set the receiver to the PROGRAM mode.

(b) Press FUNCTION, 3, 3 and the display will be shown at right.

(c) There are 4 LED's on the front panel of the TRX-1520. Only the power indicator should be illuminated. If any of the other 3 indicators are flashing or illuminated, (TI, VC, REM), reorient the UHF antenna. The antenna must be repositioned away from the noise generating source. It may be necessary to extend the antenna away from the unit using a COAX cable.
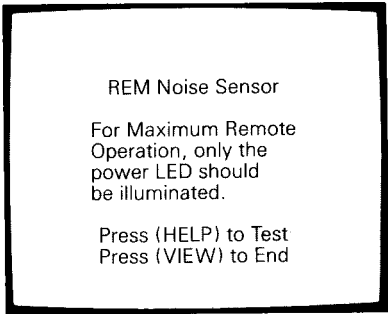
Maximum RCU performance will be achieved when the TI, REM, and VC indicators are not illuminated or flashing.

To test the remote control, press HELP . When pressing and holding HELP on the RCU, the VC indicator should flash once and the TI and REM Led's should continue to flash. This indicates proper operation of the RCU and Receiver.

(d) Press VIEW when finished.

(e) Return the receiver to the AUTO mode.

```
REM Noise Sensor

For Maximum Remote
Operation, only the
power LED should
be illuminated.

Press (HELP) to Test
Press (VIEW) to End
```

If the VC indicator is flashing.	The receiver is accepting remote control signals.
If the TI indicator is flashing.	The receiver is accepting the remote control signals or interference which is similar to the remote control's signal.
If the RCU indicator (REM) is flashing.	The receiver is accepting interference.

3.4 ALL DATA CLEAR

This function is used to erase and initialize all data which has been programmed.

(a) Set the receiver to the PROGRAM mode.

(b) Press FUNCTION, 3, 4 and the display will be as shown at right.
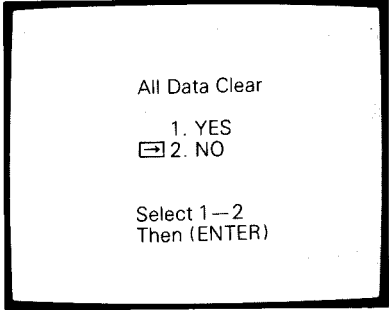
Select 1 and press ENTER to erase and initialize all data.

Note: When data is initialized, the audio level is set to maximum.

```
All Data Clear

1. YES
2. NO

Select 1-2
Then (ENTER)
```

ADVANCED OPERATION

4. RECEIVER MODE SELECTION

The 2 modes of the receiver are PROGRAM and AUTO. The PROGRAM mode is used when entering the east and west limits and satellite positions. The AUTO mode is used after initial programming is completed.
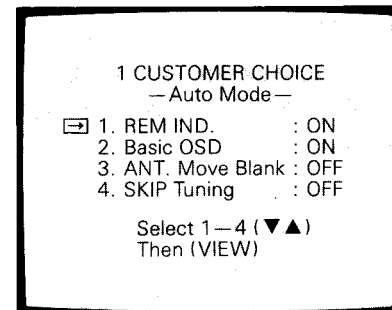
(a) Press [FUNCTION] , [4] , and the display will be as shown at right.

(b) Select [1] for the AUTO mode, [2] for the PROGRAM mode and press [ENTER] .

```
        Receiver Mode

          1. Auto
      ⇨ 2. Program

        Select 1—2
        Then (ENTER)
```
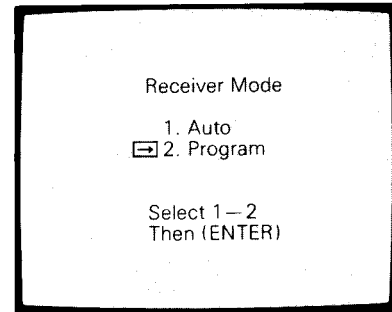
— AUTO MODE —

1. CUSTOMER CHOICE

(a) Press [FUNCTION] , [1] and the CUSTOMER CHOICE MENU will be displayed as shown at right.

(b) Select the item number (1—4).
By pressing EAST [▼] or WEST [▲] , select ON or OFF. Press [VIEW] to return to normal mode.

(c) The CUSTOMER CHOICE items are as follows.

```
     1 CUSTOMER CHOICE
        —Auto Mode—
  ⇨ 1. REM IND.       : ON
    2. Basic OSD      : ON
    3. ANT. Move Blank : OFF
    4. SKIP Tuning    : OFF

      Select 1—4 ( ▼ ▲ )
      Then (VIEW)
```

1.1 REMOTE CONTROL INDICATOR (ON/OFF)

This function is used to turn the remote control indicator on the front panel on or off.

1.2 BASIC OSD (ON/OFF)

This function is used to turn the basic on-screen display ON or OFF. The Basic OSD is the channel, polarity, band, satellite name, volume and mute information.

1.3 ANTENNA MOVE BLANK (ON/OFF)

This function makes the TV screen blackout when the antenna is moving between the satellites.

1.4 SKIP TUNING (ON/OFF)

When this function is on, the channel [▼] [▲] buttons will select the same polarities first and the opposite polarities second.
Ex. 1, 3, 5, 7, 9, ..., 2, 4, 6, 8, 10, ...

2. CHANGE PROGRAM

2.1 CHANGE POLARITY AND SKEW

2.2 TI FILTER AND CH FINE TUNING

By using this function it is possible to reduce the sparkle noise in the picture, which is caused by terrestrial interference.
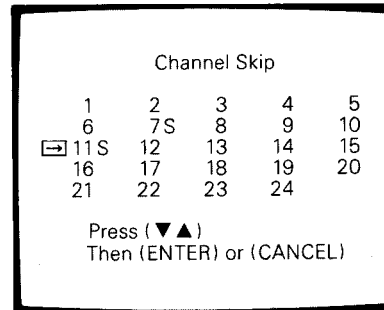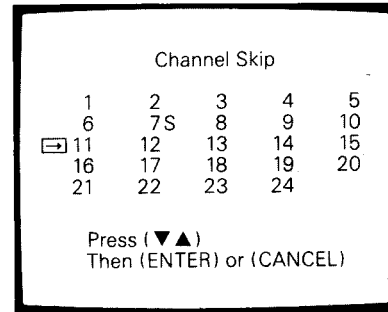
2.3 CHANNEL SKIP

The TRX-1520 can be programmed to skip one or more channels of a satellite.

(a) Select the satellite that has a channel or channels desired to be skipped.

(b) Press FUNCTION , 2 , 3 and the display will be as shown at right.

When programming a channel skip: Select the desired channel by pressing EAST ▼ or WEST ▲ . Press ENTER and the channel is programmed to be skipped. An S will be displayed as shown at right. Press VIEW to clear the on screen display.

When canceling a channel skip: Pressing EAST ▼ or WEST ▲ to select the desired channel to cancel a skip. Press CANCEL and the skip will be canceled. Press VIEW to clear the on-screen display.

```
         Channel Skip

    1     2     3     4     5
    6    7S     8     9    10
 ⇥ 11    12    13    14    15
   16    17    18    19    20
   21    22    23    24

   Press ( ▼ ▲ )
   Then (ENTER) or (CANCEL)
```

```
         Channel Skip

    1     2     3     4     5
    6    7S     8     9    10
 ⇥ 11S   12    13    14    15
   16    17    18    19    20
   21    22    23    24

   Press ( ▼ ▲ )
   Then (ENTER) or (CANCEL)
```

2.4 AUDIO PROGRAM

20 audio subcarriers are factory programmed. If desired, the audio program can be changed as follows.

(a) Press FUNCTION , 2 , 4 and the display will be as shown at right.

(b) Select 1.

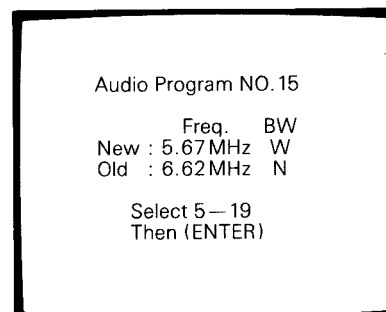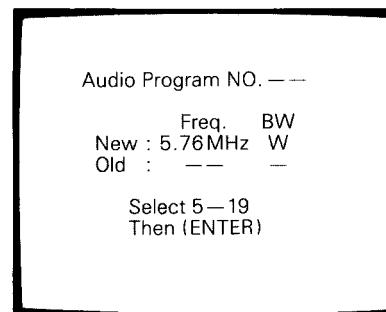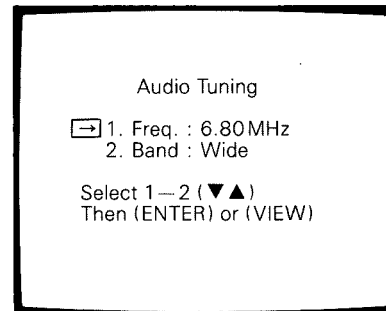By pressing EAST ▼ or WEST ▲ , select the desired audio subcarrier.

Select 2.

By pressing EAST ▼ or WEST ▲ , select the desired bandwidth W-Wide or N-Narrow.
Press ENTER and the AUDIO program will be displayed as shown at right.

Select the AUDIO PROGRAM number (5—19) that is to be changed, and press ENTER .

```
         Audio Tuning

 ⇥ 1. Freq. : 6.80 MHz
   2. Band : Wide

   Select 1 — 2 ( ▼ ▲ )
   Then (ENTER) or (VIEW)
```

```
   Audio Program NO. — —

              Freq.    BW
   New : 5.76 MHz   W
   Old  :   — —      —

       Select 5 — 19
       Then (ENTER)
```

```
   Audio Program NO. 15

              Freq.    BW
   New : 5.67 MHz   W
   Old  : 6.62 MHz   N

       Select 5 — 19
       Then (ENTER)
```

MAIN FUNCTIONS

(c) If it is undecided which program number to store, press [AUDIO]. Then the AUDIO PROGRAM list will be displayed as shown at right.

Press [<] or [>] to see the next or previous list.
Press [VIEW] to return.

2.5 CATEGORY SELECTION
By using this function, it is possible to change the stored data for category selection.
See CATEGORY SELECTION section (page 16) to operate.

2.6 FAVORITE PROGRAMS
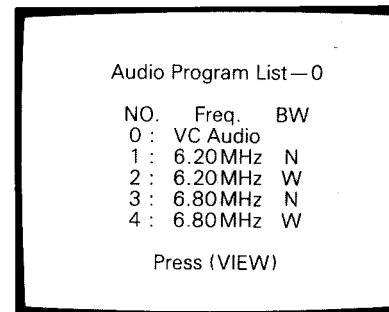This receiver can store up to 20 favorite programs.
See FAVORITE PROGRAM section (page 19) to operate.

## 2.7 SATELLITE MEMORY REALIGNMENT
This function is used when a sensor wire has come loose, an actuator clamp has slipped, or an actuator has been reinstalled after a repair. It allows realignment of the actuator to match the already stored satellite positions without having to reprogram all of the satellites. Memory can be restored if all satellites are mispositioned either east or west by the same amount.

(a) Confirm that the receiver is in the AUTO mode.

(b) Select an active channel on the desired satellite that is programmed.

(c) Press [FUNCTION], [2], [7] and the display will be as shown at right.

(d) By using EAST [v] or WEST [^], move the antenna to the position for the best picture.
Press [ENTER] to realign the satellite memory.

Note: There must be a satellite name on the OSD to enter this function. If a satellite name does not appear, move EAST [v] or WEST [^], until one is found.

```
Audio Program List—0

NO.    Freq.    BW
 0 :  VC Audio
 1 :  6.20 MHz   N
 2 :  6.20 MHz   W
 3 :  6.80 MHz   N
 4 :  6.80 MHz   W

     Press (VIEW)
```

AUDIO PROGRAM 0 (VC AUDIO) is only for VideoCipher® channels.
AUDIO PROGRAM 0, 1, 2, 3 and 4 cannot be changed.

```
Realign SAT. Memory

Galaxy 1              CH: 24
(C-band)              POL: V

    Press (▼▲)
    Then (ENTER)
```
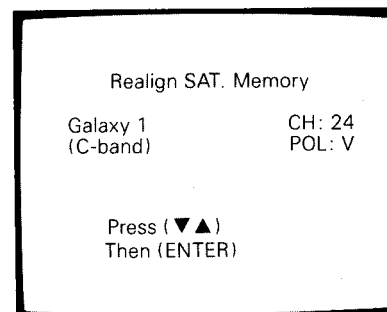
3.PARENTAL CONTROL

This receiver has two parental control functions, antenna lock and channel lockout.
See page 21 for operation.

4. RECEIVER MODE SELECTION

The 2 modes of the receiver are PROGRAM and AUTO. The PROGRAM mode is used when entering the east and west limits and satellite positions. The AUTO mode is used after initial programming is completed.

(a) Press [FUNCTION], [4], and the display will be as shown at right.

(b) Select [1] for the AUTO mode, [2] for the PROGRAM mode and press [ENTER].

```
Receiver Mode

⇨ 1. Auto
  2. Program


Select 1—2
Then (ENTER)
```

ADVANCED OPERATION

—48—
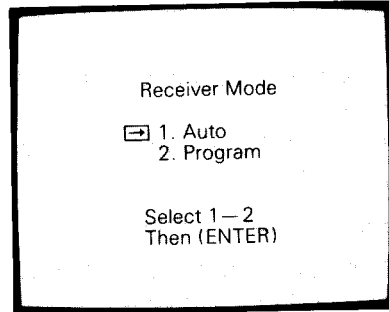
TROUBLESHOOTING

The TRX-1520 is designed to give years of trouble free service. However, if a problem should occur, please check the following before calling your dealer.

problem: No picture or sound, no front panel light.
solution: Check that the receiver AC cord is plugged into an active wall outlet.

problem: No picture or sound, but the front panel LED's are on.
solution: Check that the antenna is aimed to an operating satellite.

Check all cable connections.

Check to be sure television is tuned to channel 3 or 4 channel when using the RF modulator.

problem: No picture but sound is OK.
solution: Check cable connections to the video monitor or television.

problem: Snowy or sparkly picture.
solution: Check antenna alignment, polarity fine tuning and all interconnect cables. On some weak transponders, some snow in the picture may be normal.
Turn TI filter on or off.

problem: No sound or noisy sound but the picture is OK.
solution: Check the volume and mute controls.

Check the audio program and the audio tuning.

Check all audio cables for worn insulation or shorts.

problem: Antenna does not return accurately to all satellites.
solution: Check the mounting of the actuator on the antenna, and mounting bolts on the antenna.

Realign satellites by using the REALIGN SATELITES SECTION in the MAIN MENU.

problem: The receiver can not be set to the PROGRAM mode.
solution: Confirm that the PARENTAL CONTROL is off.

problem: When the parental control password has been forgotten.
solution: Use 1048.

problem: When an unusual condition occurs and the remote control buttons do not operate.
solution: Unplug the AC cord.
Wait a few minutes and reconnect.
Check that the UHF antenna is plugged into the UHF REMOTE IN connector.
See page 3❺.

problem: The receiver is responding poorly/intermittently to UHF remote control commands.
solution: See page 44 in Owner's Manual. The Remote Control Noise Sensor detects unwanted interference which can inhibit proper UHF functions. Press FUNCTION , 4 , 2 , ENTER to access the Program mode. Now press FUNCTION , 3 , 3 . If any LEDs on the front panel are lit (besides Power), some type of noise is present in the receiver's environment causing poor UHF performance. Moving the UHF antenna (with coax cable) or moving the noise source are possible solutions. Please call a Toshiba Technical Support Rep. for details/assistance.

In the event you have questions or problems with any of the features or funcntions listed in this manual please call our CUSTOMER SUPPORT HOTLINE at

(800) 631-3811

When connected, press Prompt #4 — Product Hook-Up and Information.

●PROGRAMMING A NEW SATELLITE

A new satellite can easily be stored into memory by performing the following steps:

(a) Move to a satellite closest to the one you desire to enter.

(b) Put receiver into the program mode.

(c) Press [C-SAT] or [Ku-SAT].

(d) Enter the 2-digit name for the desired satellite using the ALPHANUMERIC buttons.

(e) Choose a known active channel on the desired satellite (refer to a current programming guide.)

(f) Use the EAST [∨] or WEST [∧] buttons to move to the desired satellite location.

(g) Press [ENTER].

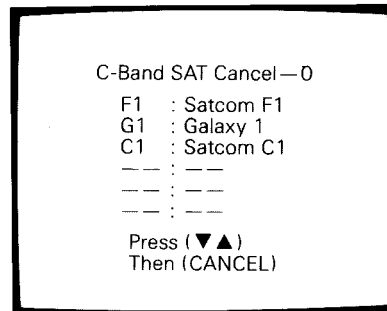(h) Return the receiver to the AUTO MODE.

●FINE TUNING A SATELLITE

A snowy or poor picture can be fine tuned.

IN AUTO MODE

(a) Move to the satellite to be fine tuned.

(b) Put receiver into Program Mode.

(c) Make sure AUTO-TUNING is on (page 12).

(d) Press [C-SAT] or [Ku-SAT].

(e) Enter the 2-digit name of the satellite you are viewing.

(f) Press [ENTER] . The skew and antenna positioner will automatically adjust to the best possible picture.

(g) Put receiver back into Auto Mode.

●TO CANCEL A SATELLITE PROGRAM

(a) By pressing [FUNCTION], [4], [2], [ENTER], set the receiver to the PROGRAM mode.

(b) Press [C-SAT] or [Ku-SAT] and continuously press [CANCEL]. The display will be as shown at right.

```
C-Band SAT Cancel—0

 F1  : Satcom F1
 G1  : Galaxy 1
 C1  : Satcom C1
 __  : __
 __  : __
 __  : __

 Press (▼▲)
 Then (CANCEL)
```

(c) By pressing EAST [∨] or WEST [∧] , select the desired satellite name to be canceled. Press [<] or [>] to see the next or previous list. Press [CANCEL] to delete the data.

SPECIFICATIONS

RF

Input Frequency	950 to 1450 MHz
Input Impedance	75 ohms
Noise Figure	12 dB
Image Rejection	45 dB
Input Signal Level	−60 to −30 dBm
L.O. Leakage at Input Terminal	−50 dbm max.
2nd IF Frequency	402.78 MHz
Threshold	7 dB C/N
Bandwidth	27/16 MHz (Selectable)

VIDEO PERFORMANCE

Video Out	
Format	NTSC
De-Emphasis	CCIR REC. 405-1
Output Impedance	75 ohms
Frequency Response (10 KHz to 4.2 MHz)	+1/−3 dB
Output Level	1 Vp-p ±2 dB

AUDIO PERFORMANCE

Bandwidth	330 KHz/150 KHz (selectable)
De-emphasis	75 μsec.
Subcarrier Frequency	5.0 to 8.5 MHz tuneable
Frequency Response	±1 dB (30 to 15 KHz)
Output Impedance	600 ohms Unbalanced
Output Level	−4.2 dBs ±2.5 dB at 75 KHz Deviation
Signal to Noise	60 dB

RF MODULATOR

Output Frequency	VHF US 3 or 4ch selectable
Output Level	66 dBμV ±3 dB

POWER

Primary Power	120V AC, 60 Hz
Power Consumption	170 watts (max.)
Power Supply to LNB	15 to 21.2V DC, 250 mA max.
Polarizer Output (Motor Driven type)	5 ±0.5V, 1.0A max.

ACTUATOR INTERFACE

Motor Power (M1, M2)	36V max., 2.5A max. class 2
5V Supply	5.5V min. 6.0V max.
Sense (Reed Switch) (Hall)	Form C closure +5V TTL Level

ENVIRONMENTAL CONDITIONS

Ambient Operation Temperature	+0 to +40°C (32 to 104°F)
Humidity	Indoor Environment

MECHANICAL

Size	16-15/16″ × 4-3/16″ × 15″
Weight	17 lbs

SUPPLIED ACCESSORIES
1. UHF Remote Control (TRX-1520RN)
2. Two "AAA" size Batteries
3. UHF Antenna for Remote Control
4. Video Cable
5. Audio Cable

Design and specifications are subject to change without notice.

TOSHIBA AMERICA CONSUMER PRODUCTS, INC.

23551711C