TOSHIBA
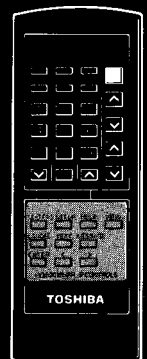
INSTALLATION AND OPERATION MANUAL

TRX-100
SATELLITE RECEIVER

TOSHIBA

VIDEO
SATELLITE RECEIVER MODEL TRX-100

TOSHIBA

PLEASE READ

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

Model No. _____   Serial No. _____

_____   _____

Retain this information for future reference.

IMPORTANT SAFEGUARDS

1. Read the owner's manual carefully, and follow all the operating and safety instructions.
2. All warnings and instructions should be retained for future reference.
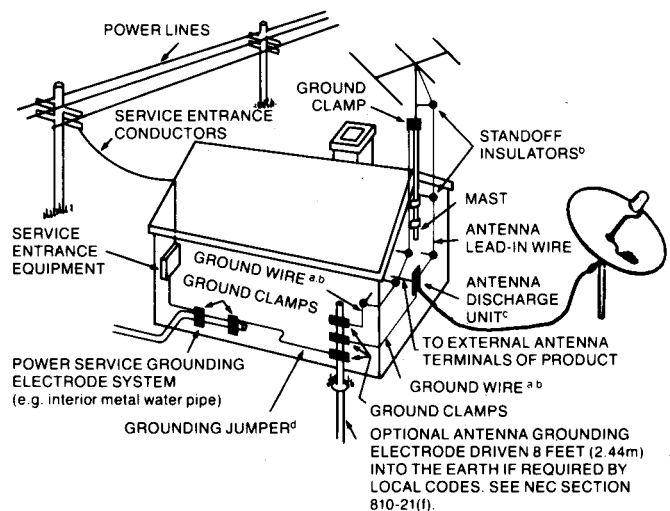3. This product should be operated only from the type of power source indicated on the marking labels. If you are not sure of the type of power supply in your home, consult your sales person or local power company.
4. Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them.
5. For added protection against damage to this product due to lightning or powerline surges, unplug power cord from wall outlet and disconnect the antenna or cable system during lightning storms or when left unattended or unused for long periods of time.
6. Do not overload wall outlets and extension cords as this can result in a risk of fire or electrical shock.
7. Never spill liquids on this product or insert objects of any kind through its openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electrical shock.
8. Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult and serious damage to the appliance.
9. Do not use attachments not recommended by the product manufacturer as they may cause hazard.
10. Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided.
11. Unplug the product from the wall outlet before cleaning. Use only a soft damp cloth and never use benzine, thinner, or other solvents for cleaning.
12. Before connecting a satellite antenna, conventional TV antenna or cable system to this product, be sure antenna or cable system is properly grounded so as to provide some protection against voltage surges and built-up static charges.

a. Use No.10AWG (5.3mm) copper, No.8AWG (8.4mm) aluminum, No.17 AWG (1.0mm) copper-clad steel or bronze wire, or larger as a ground wire.
b. Secure antenna lead-in wire and ground wires to the house with stand-off insulators spaced from 4ft (1.22m) to 6ft (1.83m) apart.
c. Mount antenna discharge unit as close as possible to where lead-in enters the house.
d. Use jumber wire not smaller than No.6AWG (13.3mm) copper, or the equivalent, when a separate antenna-grounding electrode is used. See NEC section 810-21.

13. Unplug the product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    a. When the power-supply cord or plug is damaged.
    b. If liquid has been spilled, or objects have fallen into the product.
    c. If the product has been exposed to rain or water.
    d. If the product does not operate normally by following the operating instructions.

EXAMPLE OF ANTENNA GROUNDING ACCORDING TO NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810 — "RADIO AND TELEVISION EQUIPMENT"

POWER LINES

SERVICE ENTRANCE CONDUCTORS

GROUND CLAMP

STANDOFF INSULATORS[b]

MAST

ANTENNA LEAD-IN WIRE

ANTENNA DISCHARGE UNIT[c]

SERVICE ENTRANCE EQUIPMENT

GROUND WIRE[a,b]

GROUND CLAMPS

TO EXTERNAL ANTENNA TERMINALS OF PRODUCT

POWER SERVICE GROUNDING ELECTRODE SYSTEM (e.g. interior metal water pipe)

GROUND WIRE[a,b]

GROUND CLAMPS

GROUNDING JUMPER[d]

OPTIONAL ANTENNA GROUNDING ELECTRODE DRIVEN 8 FEET (2.44m) INTO THE EARTH IF REQUIRED BY LOCAL CODES. SEE NEC SECTION 810-21(f).

"INSTALL WIRING ACCORDING TO THE CANADIAN ELECTRICAL CODE"
"EFFECTUER LE CABLAGE CONFORMEMENT AU CODE CANADIEN DE L'ELECTSICITE"

e. If the product has been dropped or the cabinet has been damaged.
f. When the product exhibits a distinct change in performance.

14. Upon completion of any service or repair, request the service technicians assurance that only authorized replacement parts have been used and that routine safety checks have been performed to determine that the product is in safe operating condition. Unauthorized parts may result in fire, electrical shock, or other hazards.

15. An outside antenna system should not be located in the vicinity of overhead power lines or other electric lights or power circuits, or where it can fall into power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching power lines or circuits as contact with these lines may be fatal.

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.

FEATURES

Thank you for purchasing the TOSHIBA TRX-100. This system has superior performance and many advanced functions. We are confident that you will be fully satisfied with your new TRX-100.
This system has following features.

Compatible with C/Ku band
The dual LNB inputs may be connected to either single C-band and Ku-band inputs or dual C-band or dual Ku-band inputs.

Built-in VideoCipher® II Descrambler Module
Allows enjoyment of VideoCipher® II programming.

Built-in Programmable antenna positioner
30 C-band satellites and 30 Ku-band satellites can be programmed.

Large Liquid Crystal Multi-Function Display
Displays antenna position, satellite name, channel, and audio output level etc.

On Screen Display
Displays various functions such as memory data, satellite name, channel number on screen.

Favorite Satellite Channel Memory
The TRX-100 can be programming to store your favorite satellite channels. This includes storing the satellite, band, format, channel, and audio tuning.

Additional Features

Sophisticated HIGH-TECH Design

Frequency Synthesized Tuning System

Direct Access To Satellite and Channel

Parental Control (antenna lock, channel lock out)

Beep Sound ON/OFF
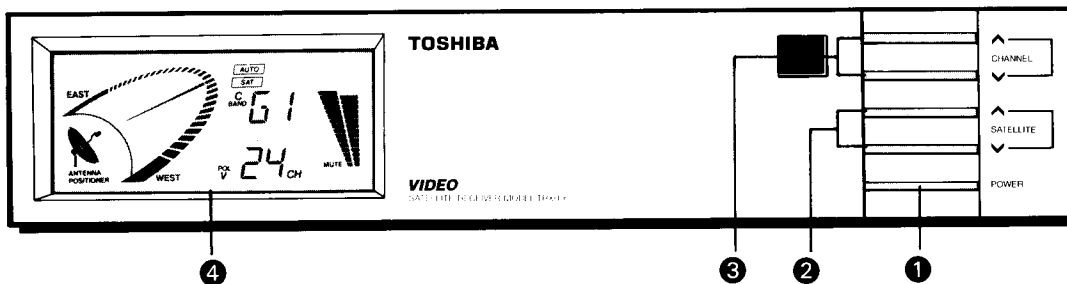
Auto Tuning (skew, dish position)

Full Function Remote Control Unit

TABLE OF CONTENTS

INDICATION OF CONTROLS

FRONT PANEL

❶ POWER BUTTON
Turn the receiver on or off.

❷ SATELLITE BUTTON
This buttton 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.

❸ CHANNEL BUTTON
Selects channels up or down.

❹ LIQUID CRYSTAL DISPLAY
Displays current satellite information.

REAR PANEL

❶ INPUT C/V
This F connector is one of two "block" inputs accepting signals in the range of 950 to 1450 MHz. Selection of this input is determined by the setting of "C/Ku" or "V/H".

❷ INPUT Ku/H
This F connector is one of two "block" inputs. See 1.

❸ 140 MHz IF OUT
This F connector is the output from the 2nd converter. It must be connected to 4 via the jumper cable provided. A terrestrial filter may be connected in this loop if necessary.
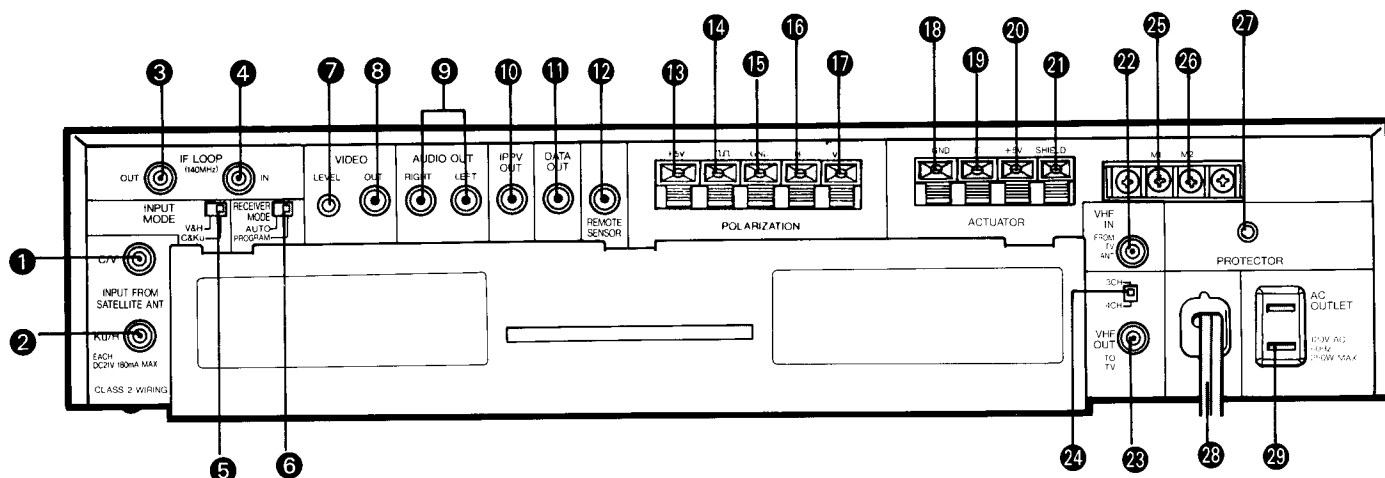
❹ 140 MHz IF IN
This F connector is the input to the 140 MHz IF strip. See 3.

❺ INPUT MODE SWITCH
This switch selects the input mode, V, H or C, Ku by the antenna and ODU system which is used.

❻ RECEIVER MODE SWITCH
This switch selects the receiver mode, AUTO or PRO-GRAM. This switch should be in the AUTO position except when programming the receiver's memory.

— 5 —

❼ VIDEO LEVEL CONTROL

This control adjusts the video output level and the VIDEOCIPHER® II input level. This has been properly adjusted at the factory and should only be changed by a authorized technician.

Note: If improperly adjusted, the VIDEOCIPHER® II Descrambler may not be actuated or buzzing in the audio may occur.

❽ VIDEO OUT

This phono connector provides the video output to a VCR or a monitor.

❾ AUDIO OUT

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

❿ IPPV OUT

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

⓫ DATA OUT

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

⓬ REMOTE SENSOR

This jack is used the optional wired remote control unit.

⓭ +5V

This terminal is the 5V supply for the polarizer.

⓮ ⎍⎍

This terminal is the output to control for the polarizer.

⓯ GND

This is a return line for 13, 14, 16, 17.

⓰ H

This is an auxiliary output that provides control signals to the H/V switch when H polarity is selected.

⓱ V

This is an auxiliary output that provides control signals to the H/V switch when V polarity is selected.

⓲ GND

An actuator position feedback line used in conjunction with 19 alone or 19 and 20.

⓳ ⎍

This is the return pulse from the actuator.

⓴ +5V

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

㉑ SHIELD

A shielded line for the actuator signal.

㉒ VHF IN

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

㉓ VHF OUT

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

㉔ CHANNEL 3/4

The output of the modulator, 23, (VHF OUT) is controlled by this switch. TV reception on channel 3 or 4 is possible.

㉕ M1

Combined with 26 this output controls the motor direction and dynamic braking. When the EAST ▾ is pressed, +36V appears at the M1 relative to M2.

㉖ M2

Combined with 25, this output controls the motor direction and dynamic braking. When the WEST ▴ is pressed, +36V appears at the M2 relative to M1.

㉗ PROTECTOR

When pressed, this button resets the circuit breaker for the actuator, and provides power to the actuator.
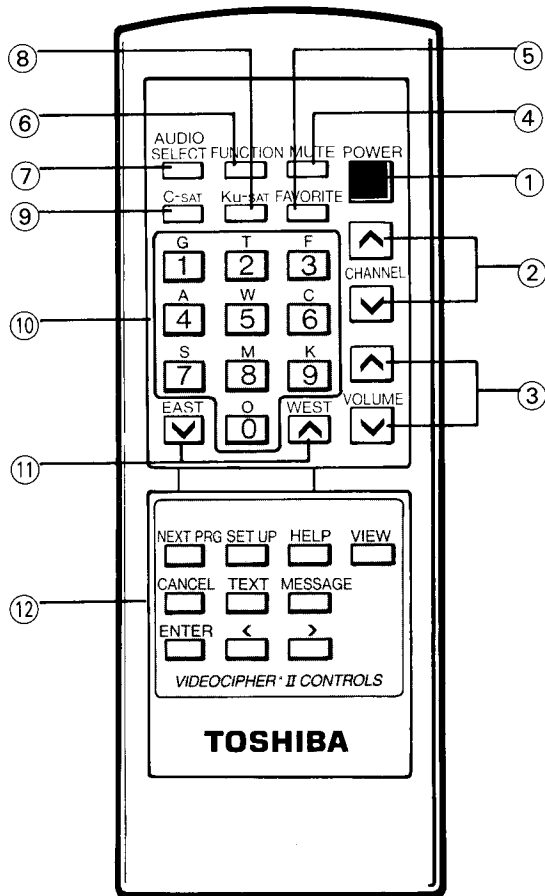
㉘ LINE CORD

120V AC, 60Hz (nominal) input.

㉙ AC OUTLET

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

INDICATION OF CONTROLS

REMOTE CONTROL

① POWER BUTTON
This button turns the receiver on and off.

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

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

④ MUTE BUTTON
This button to mute the sound. Press again to return to the previous volume level.

⑤ FAVORITE BUTTON
Pressing this button, followed by the ALPHANUMERIC buttons, selects a favorite program channel which can be stored in the receiver's memory.

⑥ FUNCTION BUTTON
Pressing this button, followed by the ALPHANUMERIC buttons, selects one of the SENIOR FUNCTIONS.

⑦ AUDIO SELECT BUTTON
Pressing this button, followed by the ALPHANUMERIC buttons or EAST ▼ or WEST ▼, selects preprogrammed audio programs.

⑧ Ku-SAT BUTTON
Pressing this button, followed by the ALPHANUMERIC buttons or EAST ▼ or WEST ▲, select Ku-band satellites.

⑨ C-SAT BUTTON
Pressing this button, followed by the ALPHANUMERIC buttons or EAST ▼ or WEST ▲, selects C-band satellites.

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

(1) To select a channel and a satellite directly. See page 18.

(2) To select a favorite program which has been stored in the receiver's memory. See page 22.

(3) To select an audio program.

(4) To use senior functions . See page 33.

(5) To enter passwords.

⑪ ANTENNA EAST/WEST BUTTONS
This button is used to move the antenna. When pressed with AUDIO SELECT , Ku-SAT or C-SAT , this button works as ▼ or ▲

⑫ VIDEOCIPHER® II CONTROLS
These buttons perform those functions associated with the operation of the VideoCipher® II Descrambler, and are operative only when receiving a VideoCipher® signal. See page 31.
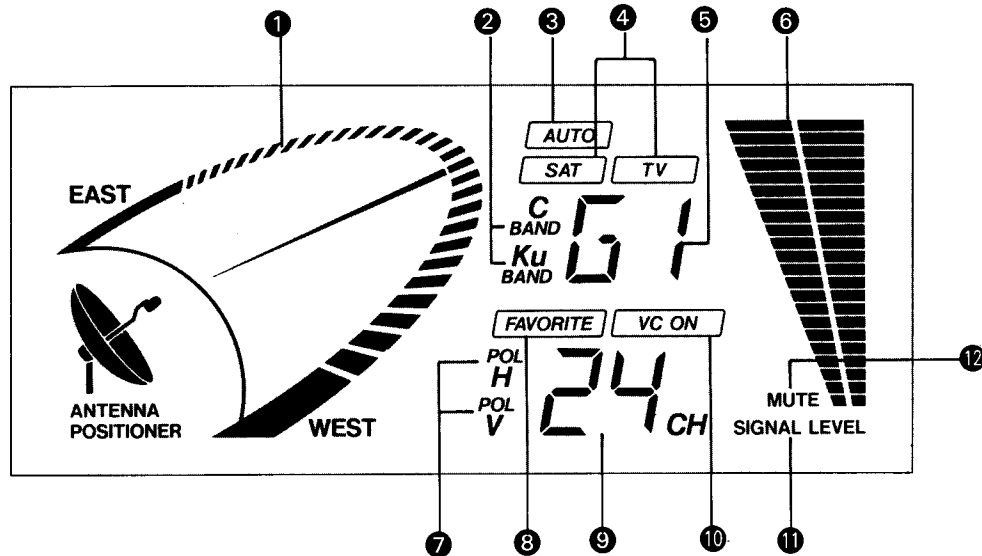
Note: ENTER , VIEW and ⟨ ⟩ are also used for other functions.

■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.
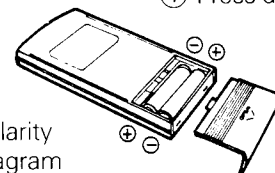
LCD (LIQUID CRYSTAL DISPLAY)

❶ ANTENNA POSITION DISPLAY
Graphically displays the antenna position.

❷ C/Ku BAND INDICATOR
Indicates the satellite band being received.

❸ AUTO MODE INDICATOR
Indicates the AUTO mode has been selected on the rear panel.

❹ SAT/TV INDICATOR
Indicates "SAT" when the satellite signal is selected to the RF output, and indicates "TV" when the television signal is selected.

❺ SATELLITE NAME DISPLAY
Display the receiving satellite designation by 2 digits. Displays EL when the dish is at the east limit, and WL when the dish is at the west limit.

❻ BARGRAPH INDICATOR
When the receiver is in the AUTO mode, the audio output level. (L and R channel) is displayed. When the receiver is in the PROGRAM mode, the input signal strength is displayed.

❼ POLARITY INDICATOR
Indicates the channel polarity. Indicates "H" for horizontal and "V" for vertical polarity.

❽ FAVORITE INDICATOR
Indicates the favorite program is selected.

❾ CHANNEL DISPLAY
Displays the receiving satellite channel number or the favorite program number.

❿ VIDEOCIPHER INDICATOR
Indicates the system is receiving a VideoCipher® II signal.

⓫ SIGNAL LEVEL INDICATOR
The signal input level will be displayed when the receiver is in the program mode.
The audio output level will be displayed when the receiver is in the AUTO mode.

⓬ AUDIO MUTE INDICATOR
Indicates the audio output is muted.

INSTALLATION

1. BASIC INSTALLATION

(1) SINGLE C-BAND

TO LNB

TO ACTUATOR

TO POLARIZER

TO VHF
ANTENNA

Set to C•Ku

V•H
C•Ku

VIDEO IN

AUDIO IN

VHF IN

MONITOR

AUDIO SET

TV

(2) DUAL LNBs

TO LNB

TO ACTUATOR

TO VHF
ANTENNA

Set to V•H

V•H
C•Ku

VIDEO IN

AUDIO IN

VHF IN

MONITOR

AUDIO SET

TV
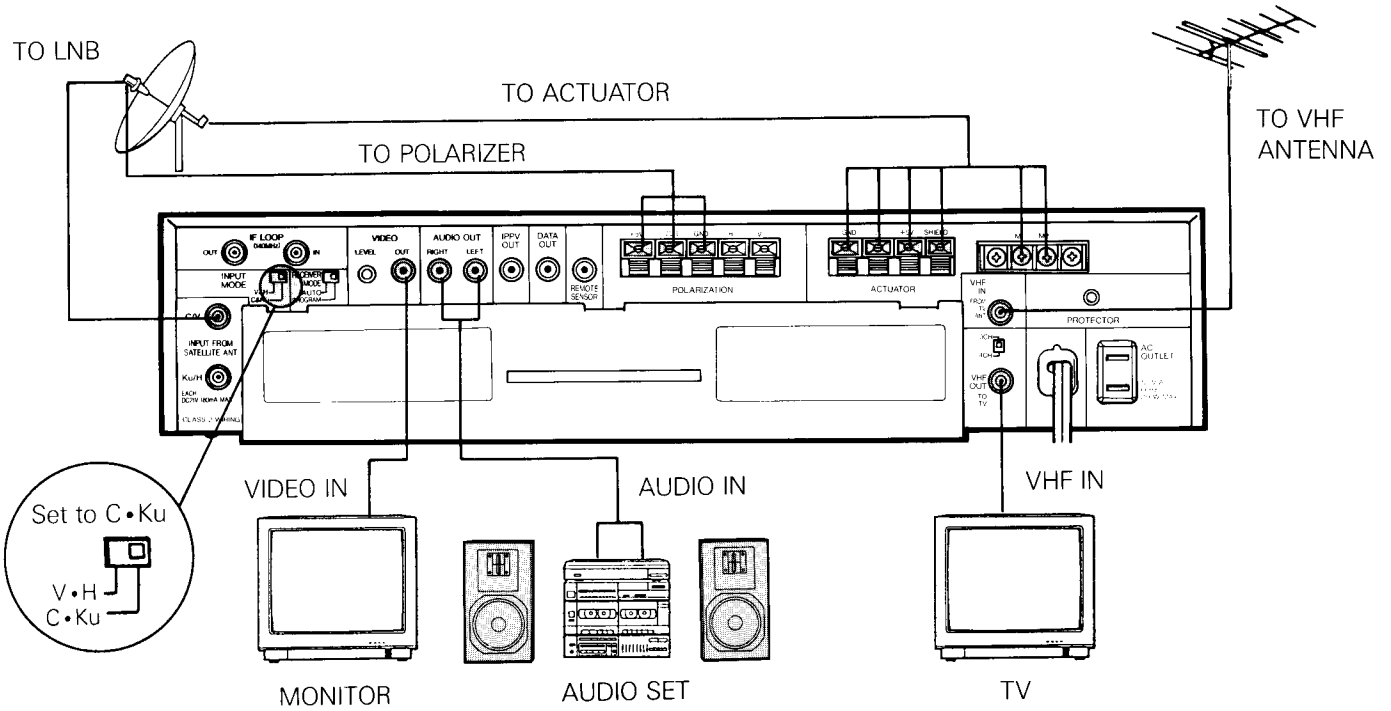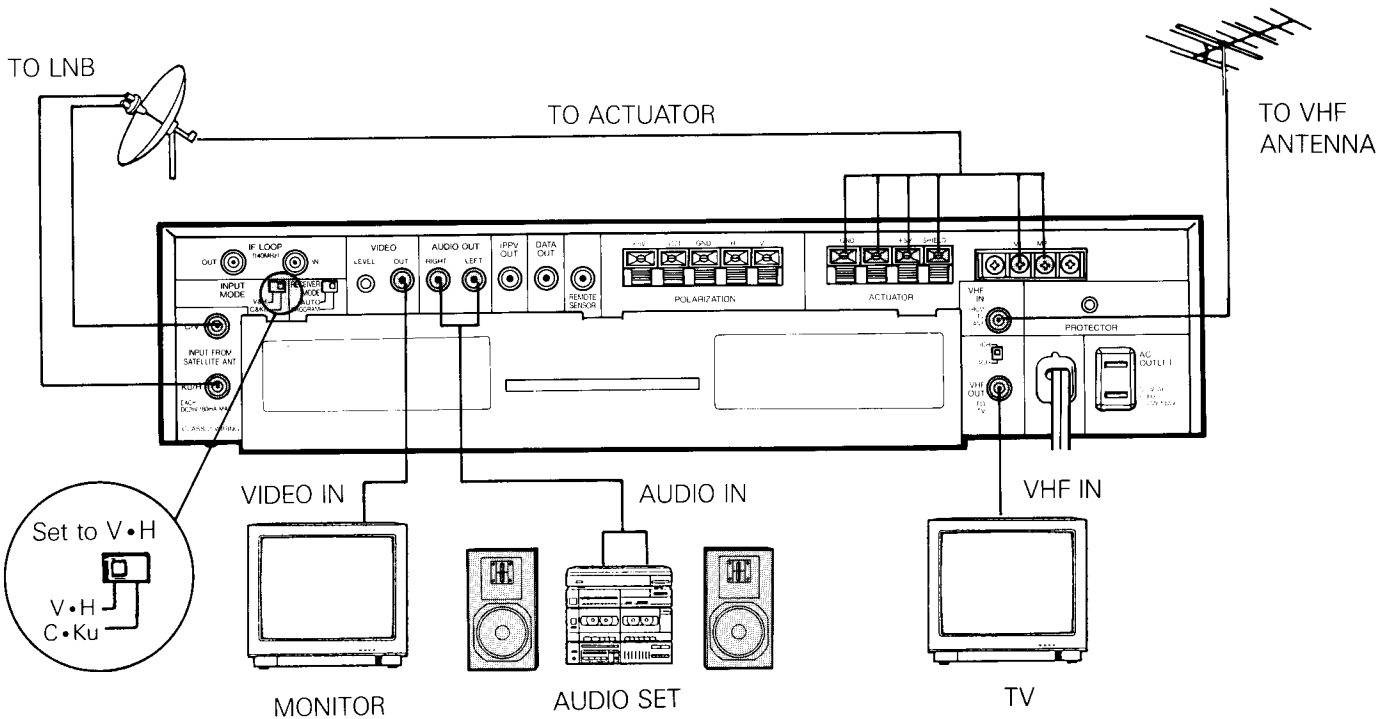
(3) SINGLE C-BAND AND SINGLE Ku-BAND

TO ACTUATOR

TO POLARIZOR

VHF ANTENNA

Set to C•Ku

V•H
C•Ku

VIDEO IN

AUDIO IN

VHF IN

MONITOR

AUDIO SET

TV

(4) DUAL C-BAND LNBs AND MALTIPLE RECEIVERS

Splitter

VHF ANTENNA

Set to V•H

V•H
C•Ku

VHF In

TV

Set to V•H

V•H
C•Ku

VHF IN

TV

— 10 —
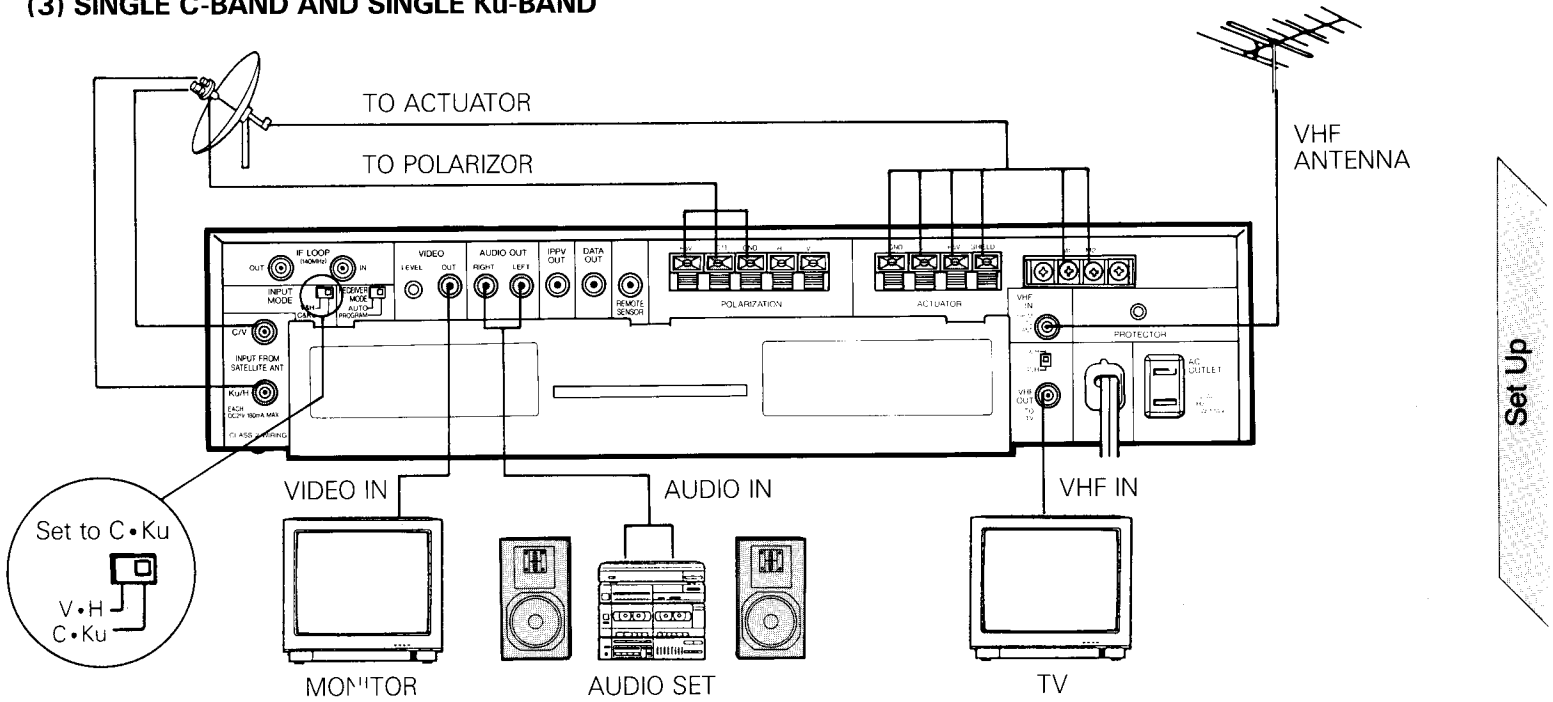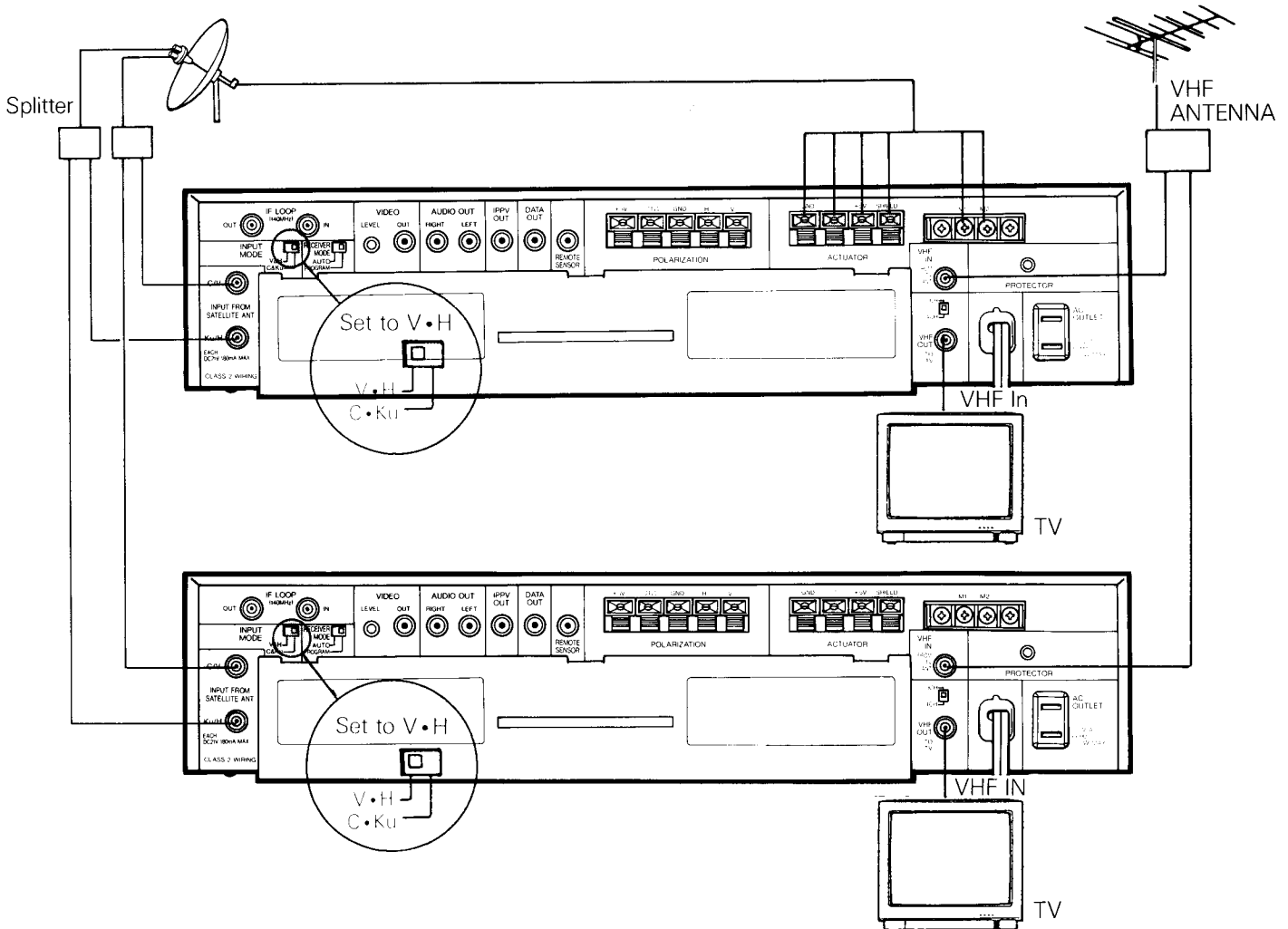
2. EXAMPLE OF CONNECTIONS TO OTHER AV COMPORNENTS

Ex 1. Connection to a TV, a VCR and an AUDIO SET

VIDEO IN

VHF IN

AUDIO IN

VCR

VHF OUT

VHF IN

TV

TAPE PLAY

TAPE REC
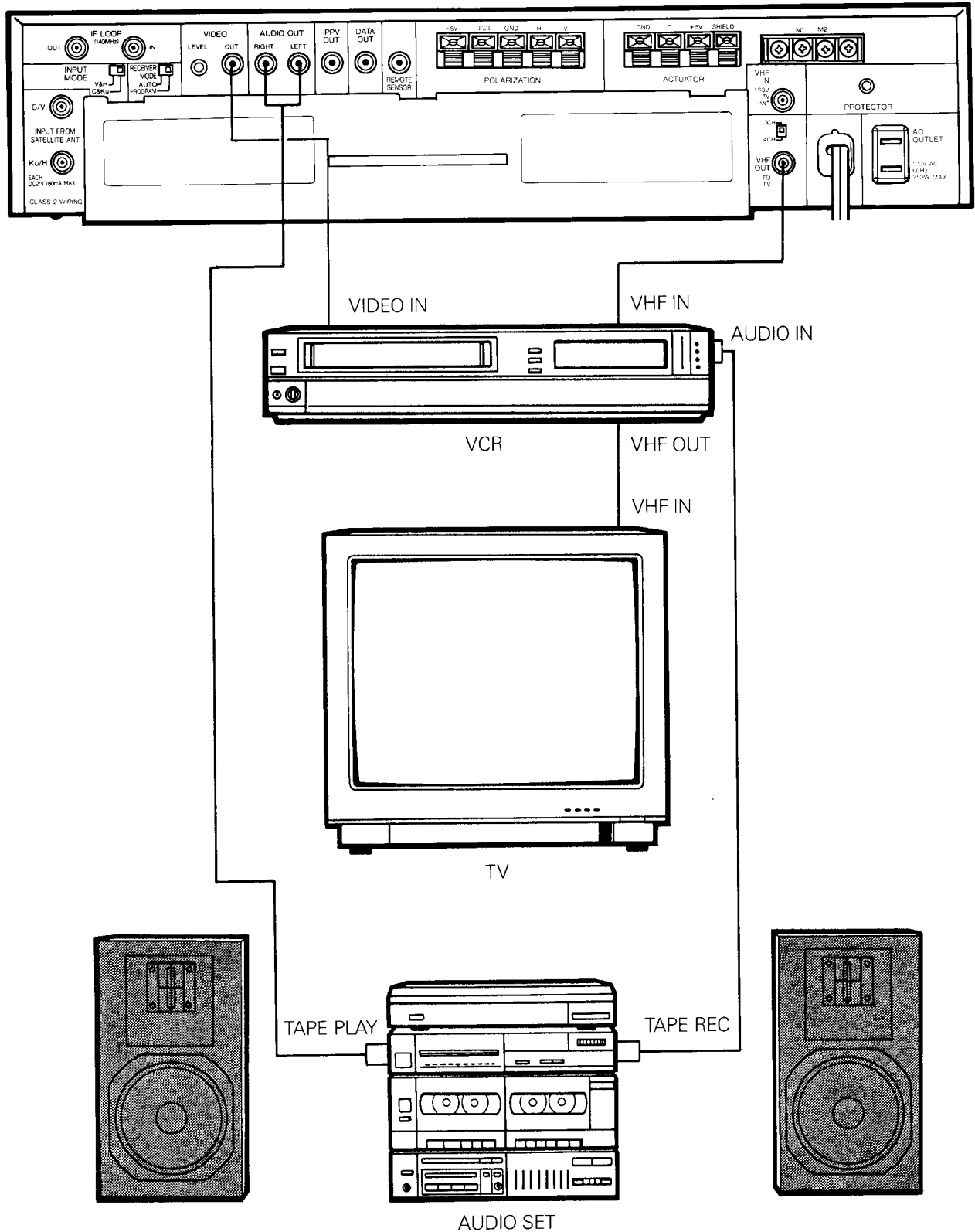
AUDIO SET

Note: When recording a program on a VCR, set the TRX-100's volume control to 31 (max.).

— 11 —

Ex 2. Connection to a MONITOR, a VCR and an AUDIO SET

AUDIO IN   VIDEO IN   VHF IN

AUDIO OUT

VIDEO OUT

VCR

VIDEO
IN 1

MONITOR

AUDIO IN 1

AUDIO SET
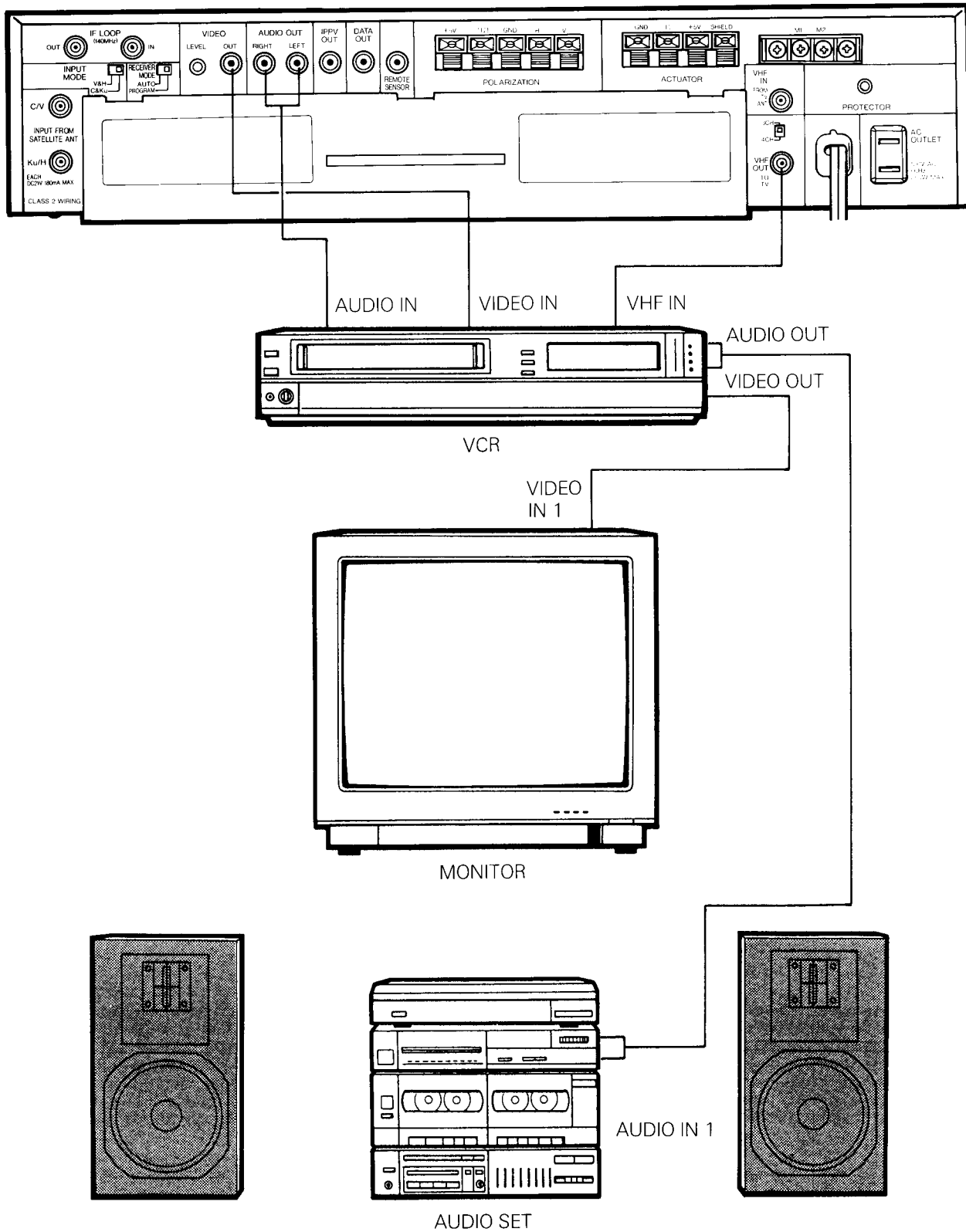
Note: When recording a program on the TRX-100's volume control to 31 (max.).

INITIAL SETUP

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

1. SELECTING THE INPUT MODE FOR YOUR SYSTEM

By using the INPUT MODE switch, select the input mode, V & H or C & Ku in accordance with the antenna and LNB System which is being used.

```
        ┌─□┐
V•H ──┘
C•Ku ──┘
```

2. POWER ON

Turn on the receiver, the TV, and other equipment (such as audio system, or a video system.) Select the TV channel (3 or 4) in accordance with the receiver's VHF output of TRX-100.

3. SETTING THE RECEIVER MODE

Set the RECEIVER MODE switch on the rear panel to the PROGRAM position.

4. CHECK ACTUATOR WIRING
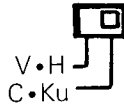
Confirming that when EAST ☑ is pressed, the dish moves to the east. If not, swap connection M1 and M2 on the rear panel of the TRX-100.

5. SETTING ANTENNA LIMITS

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

(a) Press ⎡FUNCTION⎤, ⎡7⎤ , ⎡1⎤ and the display will be as shown at right.

```
┌─────────────────────────┐
│                         │
│   INITIALIZE DATA       │
│   ALL DATA              │
│                         │
│      1. YES             │
│      2. NO              │
│                         │
│   SELECT 1 — 2          │
│   THEN (ENTER)          │
│                         │
└─────────────────────────┘
```
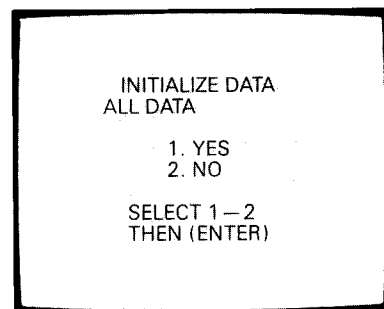
Select ☐1 and press ENTER , at this time all data is initialized as factory preset. The display will be as shown at right.

```
┌─────────────────────────────┐
│                             │
│     SATELLITE MEMORY        │
│      IS ALL CLEARED         │
│                             │
│       MOVE DISH TO          │
│       EAST LIMIT (EL)       │
│       THEN (ENTER)          │
│                             │
│                             │
└─────────────────────────────┘
```
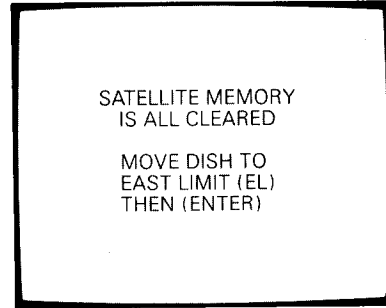
(b) East limit must be set first. Move the dish east until "NO RETURN PULSE" is displayed on screen.

At this time, press WEST ☐∧ for 1~2 seconds. This is the electrical east limit.
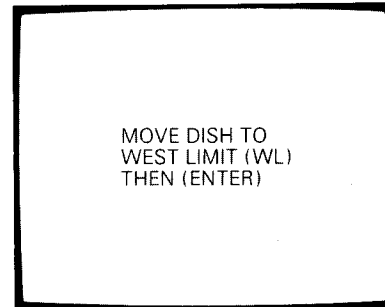Press ENTER to store this position.

(c) The display will change as shown at right.

```
┌─────────────────────────────┐
│                             │
│                             │
│                             │
│       MOVE DISH TO          │
│       WEST LIMIT (WL)       │
│       THEN (ENTER)          │
│                             │
│                             │
└─────────────────────────────┘
```

(d) Move the dish to the west until "NO RETURN PULSE" is displayed on screen.
At this time, press EAST ☐∨ for 1~2 seconds. This is the electrical west 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.

The antenna limit setup is over.
Next, continue to enter the satellite positions.

Set Up

INITIAL SETUP

5. SATELLITE POSITION MEMORY

Up to 60 satellites can be programmed (C-band: 30, Ku-band: 30). For the 36 satellites listed below, the 2-digit ALPHANUMERIC designates 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 36 satellites.

C-BAND

NO.	DESIGNATION	SATELLITE	POSITION
1	F5	AURORA	143° W
2	F1	SATCOM F1R	139° W
3	G1	GALAXY 1	134° W
4	F3	SATCOM F3	131° W
5	C1	ASC 1	128° W
6	T3	TELESTAR 303	125° W
7	W5	WESTAR 5	122.5° W
8	S1	SPACENET 1	120° W
9	M2	MORELOS 2	116.5° W
10	M1	MORELOS 1	113.5° W
11	A2	ANIK B	109° W
12	A1	ANIK D1	104.5° W
13	W4	WESTAR 4	99° W
14	T1	TELSTAR 301	96° W
15	G3	GALAXY 3	93.5° W
16	W3	WESTAR 3	91° W
17	T2	TELSTAR 302	87° W
18	F4	SATCOM F4	83° W
19	W2	WESTAR 2	79° W
20	O1	COMSTAR D3/D4	76° W
21	G2	GALAXY 2	74° W
22	F2	SATCOM F2R	72° W
23	S2	SPACENET 2	69° W

Ku-BAND

| NO.	DESIGNATION	SATELLITE	POSITION
1	T1	SPACENET 1	120° W
2	C3	ANIK C3	117.5° W
3	M1	MORELOS 1	113.5° W
4	C2	ANIK C2	110.0° W
5	G2	GSTAR 2	105.0° W
6	G1	GSTAR 1	103° W
7	S1	SBS 1	99° W
8	S2	SBS 2	97° W
9	S3	SBS 3	95° W
10	S4	SBS 4	91° W
11	K1	SATCOM K1	85° W
12	K2	SATCOM K2	81° W
13	T2	SPACENET 2	69° W

(a) Press FUNCTION , 5 , 1 . The display will be as shown at right.

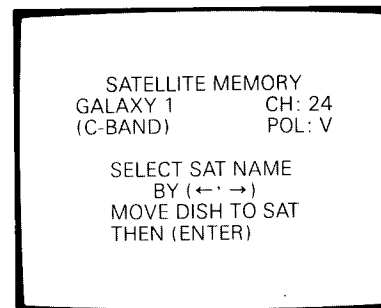Select 1 and press ENTER to enable the CHAN-NEL SCAN function.

```
CHANNEL SCAN

1. ON
2. OFF

SELECT 1 — 2
THEN (ENTER)
```
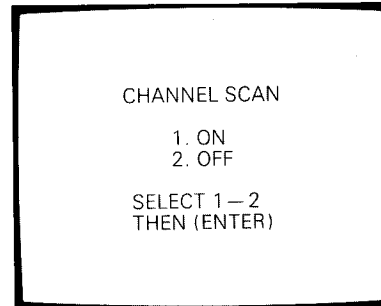
(b) Press FUNCTION , 5 , 2 . The display will be shown at right.

Select 1 and ENTER to enable the AUTO TUN-ING function.

```
AUTO TUNING

1. ON
2. OFF

SELECT 1 — 2
THEN (ENTER)
```
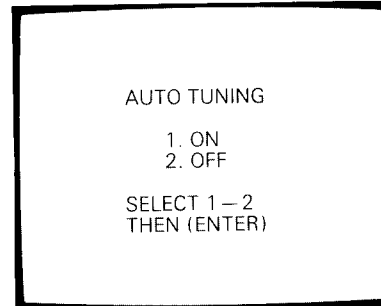
(c) Select C or Ku-band by pressing C-SAT or Ku-SAT and select a satellite name by pressing (< or >) until your desired satellite name appears, or entering the satellite designation (2-digit) by the ALPHANU-MERIC buttons.
Ex. When GALAXY 1 is selected.

```
SATELLITE MEMORY
GALAXY 1          CH: 24
(C-BAND)          POL: V

SELECT SAT NAME
BY (←   →)
MOVE DISH TO SAT
THEN (ENTER)
```

(d) 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 and the skew automatically adjusts to the satellite and then the antenna position is auto-matically adjusts to the satellite.
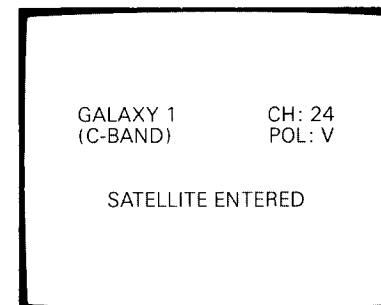When completed, the antenna position is stored. The display will be as shown at right.

Flashing during operation.

```
GALAXY 1          CH: 24
(C-BAND)          POL: V

┌→ AUTO SKEW
└→ AUTO ANT.
```
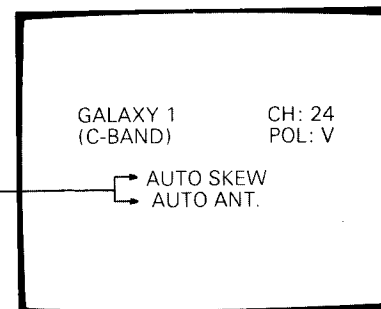
To program additional satellite positions, operate again from (c) to (d).

The INITIAL SETUP is now finished.

```
GALAXY 1          CH: 24
(C-BAND)          POL: V

SATELLITE ENTERED
```

Set Up

BASIC OPERATION

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

1. POWER ON

Press POWER .The LIQUID CRYSTAL DISPLAY (LCD) on the front panel will light up. Check the LCD that AUTO appears. If not, set the receiver mode switch on the rear panel to the AUTO position.

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 designationa (2 digit as G1, F3, etc.) by pressing the ALPHANUMERIC buttons.
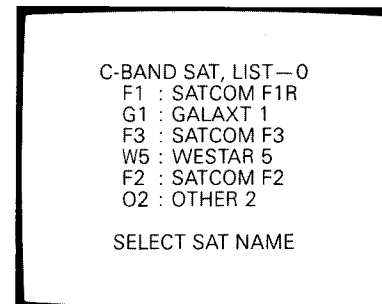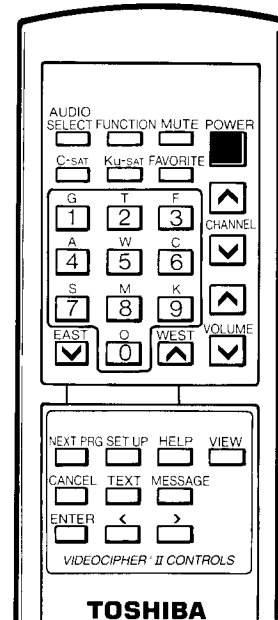Then the dish will move to the desired satellite.

● Next access

Press C-SAT or Ku-SAT and press and hold EAST ☑ or WEST ☒ until the desired satellite name appears in 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, and it will be displayed on the TV screen.
Press ‹ or › to see next or previous satellite list.


```
C-BAND SAT, LIST—0
 F1 : SATCOM F1R
 G1 : GALAXT 1
 F3 : SATCOM F3
 W5 : WESTAR 5
 F2 : SATCOM F2
 O2 : OTHER 2

 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 LCD and on screen.
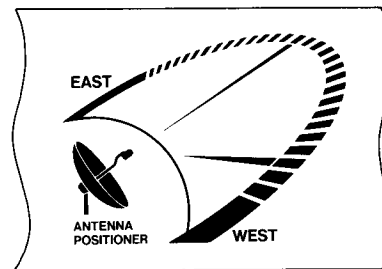
Displays the present antenna position.
It moves toward the selected satellite position.

The flashing bar displayes the selected satellite position.

```
GALAXY 1
(C-BAND)
```
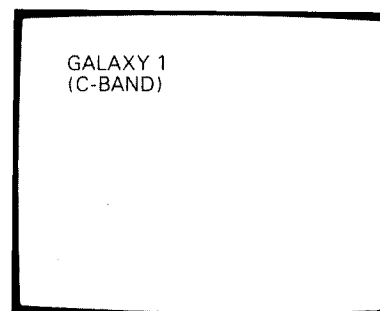
After the dish reaches the selected satellite position (in this case, G1), the display will change.

```
GALAXY 1        CH: 24
(C-BAND)        POL: V
```
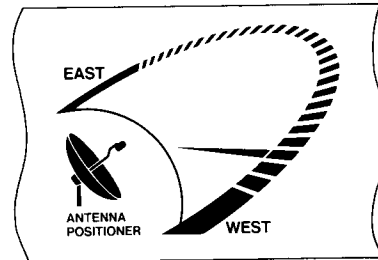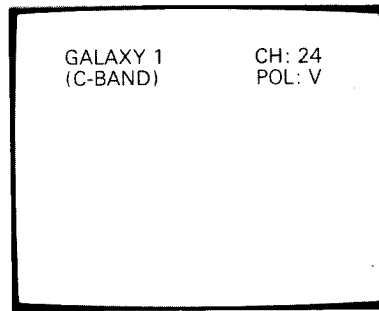

(2) Channel selection
There are two ways to select a channel.

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

● Up, down access
Press CHANNEL ∨ or ∧ until the desired channel appears.
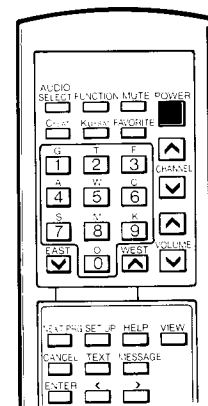
When a channel is selected, the number will be displayed as shown at right.

```
GALAXY 1        CH: 24
(C-BAND)        POL: V
```
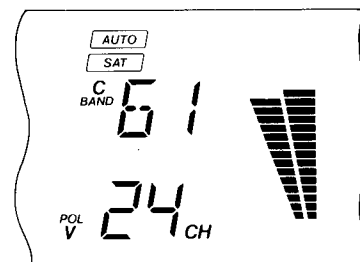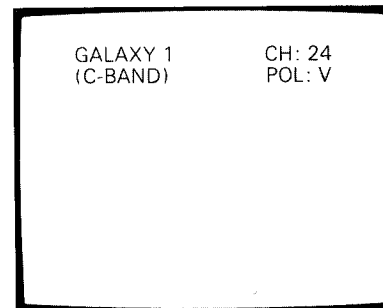
3. AUDIO PROGRAM SELECTION

The factory programmed satellites are listed on page 15. Audio programs are set by satellite channels.
Therefore, there is no need to set the audio frequencies. But when it is desired to listen to a sub audio program, or, when the transmission audio signal has been changed, the audio frequency can be changed. There are two ways to select an audio program.

● Direct access
By pressing AUDIO SELECT twice, the AUDIO PROGRAM LIST will appear on screen.

Press ❮ or ❯ to see the next or the previous AUDIO PROGRAM LIST.

Select a favorite audio program number by using the ALPHANUMERIC buttons.

● Up, down access
Press AUDIO SELECT and hold EAST ☑ or WEST ☒ until the desired audio program appears.

When an audio program is selected, it will be displayed on screen.

Note: AUDIO PROGRAM 0 "VC AUTO" is only for VIDEOCIPHER® II.

```
           AUDIO PROG LIST—0
NO   MODE   BW    A1      A2
0:   VC AUTO
1:    MN    W    6.80
2:    MN    N    7.75
3:    DS    N    6.62    7.12
4:    MS    W    5.96    6.12
           SELECT 0—9
```

```
         AUDIO PRGM 5

    MODE : MATRIX STEREO

    BAND : NARROW
    A1    : 5.76MHz
    A2    : 5.92MHz
```

4. VOLUME CONTROLS AND MUTING

Press VOLUME [∨] or [∧] button to adjust the audio to a comfortable listening level.

The display will be as shown at right.

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.

5. MOVING THE DISH

To move the dish, use EAST [∨] or WEST [∧].

Note: If the wrong key was pressed or the operation of the TRX-100 was unknown, press [VIEW] , the receiver will return to the normal condition.
If "NO RETURN PULSE" is displayed on screen when a satellite is selected or the dish is moved, check the antenna and actuator connections.

AUDIO VOLUME : 31

The volume level reference level 31 will change by pressing VOLUME [∨] or [∨].

It will move up or down in accordance to audio level.

AUDIO MUTE
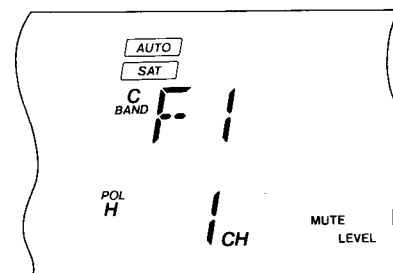
FAVORITE PROGRAM

By using this function, it is possible to store up to 20 of your favorite satellite programs. Then it is possible to select your desired satellite channel without selecting a satellite, channel, polarity, or audio program. These programs may be on the same satellite or 20 different satellites. These features are available in the AUTO mode.

1. FAVORITE PROGRAMING

(1) STORING A FAVORITE PROGRAM

    (a) Confirm that the receiver is in the AUTO mode by checking the LCD display on the front panel.

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

    (c) Press FUNCTION , [4] , [1] 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 receiving satellite channel data will be displayed as shown at right.

```
        FAVORITE PROGRAM
        OLD PROGRAM : 15


     → NEW PROGRAM
        SATCOM F3              (C)
        CH : 11  AUDIO PRGM : 5
              SELECT 0 — 19
              THEN (ENTER)
```

Input the FAVORITE PROGRAM number (0—19), which is to be stored and press ENTER .

```
        FAVORITE PROGRAM
        OLD PROGRAM : 15
        GALAXY 1              (C)
        CH : 24  AUDIO PRGM : 9
     → NEW PROGRAM
        SATCOM F3             (C)
        CH : 11  AUDIO PRGM : 5
              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.
        The FAVORITE PROGRAM list will be displayed as shown at right.

        Press VIEW to return.

```
          FAV. PRGM LIST — 0

    NO    SAT    CH    AUDIO
    0:     F3     11      5      (C)
    1:     G1     24      1      (C)
    2:     F3     18      2      (C)
    3:     S2      1      1      (C)
    4:     --     --     --

          PRESS (VIEW)
```

Advanced Operation

(2) TO CANCEL A FAVORITE PROGRAM

    (a) Confirm that the receiver is in the AUTO mode
        by checking the LCD display on the front panel.

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

```
FAVORITE PROGRAM

     1. ENTER
     2. CANCEL


   SELECT 1 — 2
   THEN (ENTER)
```

    Select ⊡ and ENTER the display will be as
    follows.

    Press ⟨ᐸ⟩ or ⟨ᐳ⟩ to see the next or previous list.

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

```
         FAVORITE CANCEL — 0
   NO    SAT    CH    AUDIO
   0:    F3     11      5     (C)
   1:    G1     24      1     (C)
   2:    F3     18      2     (C)
   3:    S2      1      1     (C)
   4:    G1     13      4     (C)
           SELECT 0 — 19
           THEN (CANCEL)
```
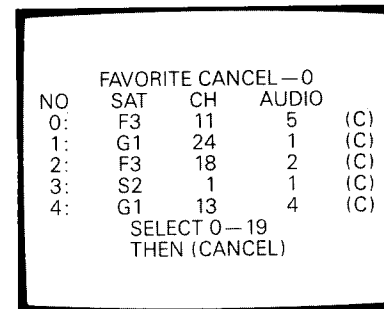
2. OPERATION OF A FAVORITE PROGRAM

Press FAVORITE twice and the FAVORITE PROGRAM list
will be displayed. Press ⟨ᐸ⟩ or ⟨ᐳ⟩ to see the next or
previous list. Enter the program number to select your
FAVORITE PROGRAM.

Note: To select a FAVORITE PROGRAM directly with-
       out displaying the favorite program list, press
       FAVORITE and continue to enter the desired
       program number.

```
         FAV. PRGM LIST — 0
   NO    SAT    CH    AUDIO
   0:    F3     11      5     (C)
   1:    G1     24      1     (C)
   2:    F3     18      2     (C)
   3:    S2      1      1     (C)
   4:    --     --     --
           SELECT 0 — 19
```
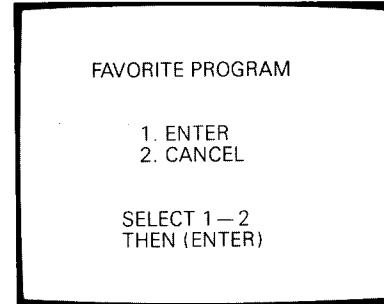
Advanced Operation
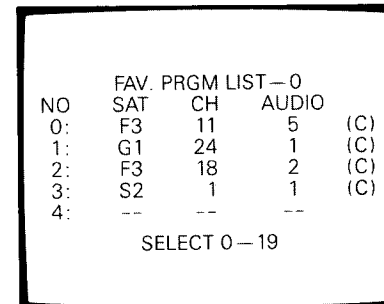
PARENTAL CONTROL

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.
Initially 1048 was programmed.
If desired, the password can be changed by using the CHANGEING PASSWORD section.

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

1. ANTENNA LOCK PROGRAMMING

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

   Press FUNCTION , ⬛ and the display will be as shown at right.

```
SENIOR FUNCTION — 3
PARENTAL CONTROL

PASSWORD NEEDS
AUTHORIZATION
INPUT PASSWORD
THEN (ENTER)

PASSWORD : — — — —
```

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

```
SENIOR FUNCTION — 3
PARENTAL CONTROL

1. ANTENNA LOCK
2. CHANNEL LOCKOUT
3. ENABLE/DISABLE
4. CHANGE PASSWORD

SELECT 1 — 4
```

(c) Select 1 and the display will be as shown at right.

```
ANTENNA LOCK

1. LOCK
2. UNLOCK

SELECT 1 — 2
THEN (ENTER)
```

(d) Select lock or unlock
   ● To lock the antenna, press ⬛ and ENTER

   ● To unlock the antenna, press ⬛ and ENTER

Advanced Operation

2. CHANNEL LOCKOUT PROGRAMMING

(a) Confirm that the receiver is in the AUTO mode.
Select the satellite which has the desired channel to
be locked out.

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

```
SENIOR FUNCTION — 3
PARENTAL CONTROL

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

```
SENIOR FUNCTION — 3
PARENTAL CONTROL

1. ANTENNA LOCK
2. CHANNEL LOCKOUT
3. ENABLE/DISABLE
4. CHANGE PASSWORD

SELECT 1 — 4
```

(d) Select ⌷2⌷ and it will display as shown at right.

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

                    PRESS (↓, ↑)
            THEN (ENTER, CANCEL)
```

(e) Program a channel lockout or cancel a channel
lockout as follows.
● Programming a channel lockout.

Select the desired channel by pressing EAST ⌷∨⌷
or WEST ⌷∧⌷.

Press ENTER and the channel is programmed
to lockout and * will be displayed as indicated
at right.

Press VIEW to return to the normal mode.

● Canceling a channel lockout.

By pressing EAST ⌷∨⌷ or WEST ⌷∧⌷, select the
channel that is programmed to lock out and is to
be viewed.

Press CANCEL ,the lockout of this channel will be
canceled.

Press VIEW to return to the normal condition.

```
            CHANNEL LOCK
    1      2      3      4      5
    6      7      8      9     10
   11     12     13     14     15
   16     17     18     19     20
→  21  *  22     23     24

                    PRESS (↓, ↑)
            THEN (ENTER, CANCEL)
```

Advanced Operation

3. 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 enter a satellite ALPHANUMERIC designation is entered, the display will be as shown at right.

```
PARENTAL CONTROL
ANTENNA LOCKED
```
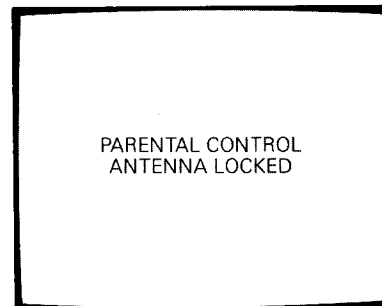
● When the channel lockout is on and a satellite channel is selected that is programmed to lockout, the display will be as shown at right.

```
PARENTAL CONTROL
CHANNEL LOCKEDOUT
```
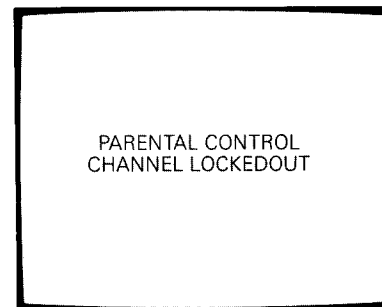
4. TO ENABLE OR DISABLE THE PARENTAL CONTROL FEATURES

(a) Confirm that the receiver is in the AUTIO mode. Press FUNCTION Ⓢ and the display will be as shown at right.
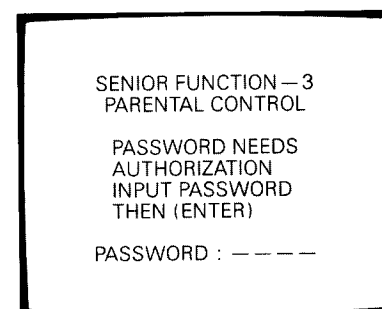
```
SENIOR FUNCTION — 3
PARENTAL CONTROL

PASSWORD NEEDS
AUTHORIZATION
INPUT PASSWORD
THEN (ENTER)

PASSWORD : — — — —
```

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

```
SENIOR FUNCTION — 3
PARENTAL CONTROL

1. ANTENNA LOCK
2. CHANNEL LOCK
3. ENABLE/DISABLE
4. CHANGE PASSWORD

SELECT 1 — 4
```

Advanced Operation
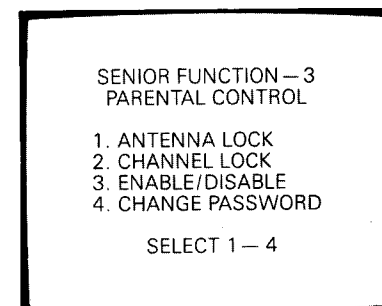
Select ⌷3⌷ and the display will be as shown at right.

(c) Select enable or disable as follows.
- ● To enable the parental lock:
  Select ⌷1⌷ and press ⌷ENTER⌷.

- ● To disable the parental lock.
  Select ⌷2⌷ and press ⌷ENTER⌷.

```
           PARENTAL CONTROL

              1. ENABLE
              2. DISABLE

              SELECT 1 — 2
              THEN (ENTER)
```

Advanced Operation
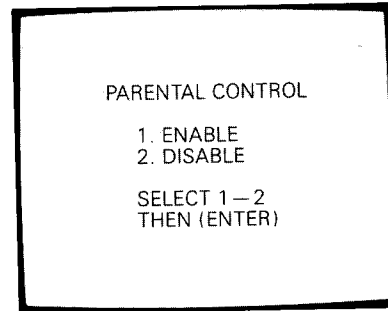
5. CHANGE THE PASSWORD

(a) Confirm that the receiver is in the AUTO mode. Press FUNCTION , ⎡3⎦ and the display will be as shown at right.

```
SENIOR FUNCTION — 3
PARENTAL CONTROL

PASSWORD NEEDS
AUTHORIZATION
INPUT PASSWORD
THEN (ENTER)

PASSWORD : — — — —
```

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

```
SENIOR FUNCTION — 3
PARENTAL CONTROL

1. ANTENNA LOCK
2. CHANNEL LOCK
3. ENABLE / DISABLE
4. CHANGE PASSWORD

SELECT 1 — 4
```

(c) Select ⎡4⎦ and the display will be as shown at right.

```
CHANGE PASSWORD

INPUT NEW PASSWORD
THEN (ENTER)

PASSWORD : — — — —
```

(d) Input the new password (4 digit) by using the ALPHANUMERIC buttons and press ENTER to store. Ex. When "2486" is entered as new password.

```
PASSWORD
2486
AUTHORIZED
```

CHANGING SATELLITE PROGRAMS

(1) STORING ADDITIONAL SATELLITE POSITIONS

(a) Set the receiver mode switch to the PROGRAM position.

(b) Press FUNCTION , 5 , 1 , 1 , ENTER to enable the CHANNEL SCAN function.

(c) Press FUNCTION , 5 , 2 , 1 , ENTER to enable the AUTO TUNING function.

(e) Select C or Ku-band by pressing C-SAT or Ku-SAT and select the satellite by pressing < or > , or entering the satellite name by using the ALPHANUMERIC buttons.
Ex. When AURORA F5 is selected.

(f) Press and hold EAST ∨ or WEST ∧ button, move the dish to the selected satellite until the picture is visible.

```
SATELLITE MEMORY
AURORA F5              CH: 24
(C-BAND)              POL: V

SELECT SAT NAME
BY (→ · ←)
MOVE DISH TO SAT
THEN (ENTER)
```

(g) Press ENTER the skew is automatically adjusted to the satellite and then the antenna position is automatically adjusted to the satellite.

```
AURORA F5              CH: 24
(C-BAND)              POL: V




              AUTO SKEW
              AUTO ANT.
```

Flashing during operation
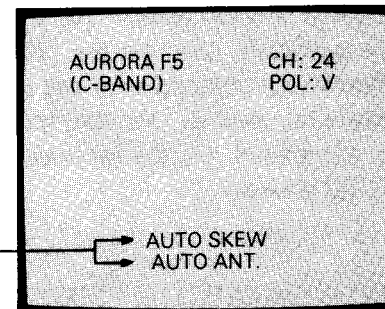
When completed, the antenna position is stored.

When programming is completed, set the receiver mode switch to the AUTO position.

```
AURORA F5              CH: 24
(C-BAND)              POL: V




SATELLITE ENTERED
```

Advanced Operation
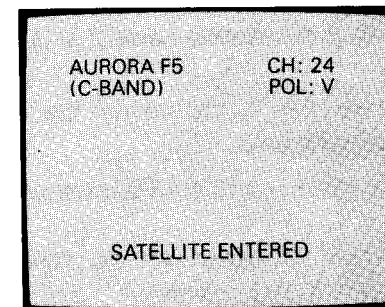
CHANGING SATELLITE PROGRAMS

(2) Programming a Ku-BAND satellite that is not factory programmed.

   (a) Set the receiver to the PROGRAM mode.

   (b) Press ⎡ Ku-SAT ⎤ and enter the satellite ALPHANU-MERIC designation. Press ⎡FUNCTION⎤, ⎡6⎤, ⎡1⎤ and select the satellite whose channel frequency is like to the channel frequency of the satellite that you want to store. See page 43 in detail.

   (c) Press ⎡FUNCTION⎤, ⎡5⎤, ⎡1⎤, ⎡1⎤, ⎡ENTER⎤ to set the CHANNEL SCAN function.

   (d) Press ⎡FUNCTION⎤, ⎡5⎤, ⎡2⎤, ⎡1⎤, ⎡ENTER⎤ to set the AUTO TUNING function.

   (e) Move the antenna by pressing EAST ⎡▽⎤ or WEST ⎡△⎤ until the desired satellite picture is visible.

   (f) Press ⎡ENTER⎤, the antenna skew and the antenna position is automatically adjusted to the satellite.
   When completed, the antenna position is stored.

   The satellite position is now finished being stored. If it is necessary to calibrate the channel frequency, operated in accordance with the instruction of the "Calibrate Ku-channel" section. (page 43).
   When completed, set the receiver mode switch to the AUTO position.

KU-SAT FORMAT

1. SBS 1, 2 & 3
2. SPACENET 1
3. ANIK C2
4. ANIK C3
5. G-STAR
6. RCA K1 & K2
SELECT 1—6
THEN (ENTER)
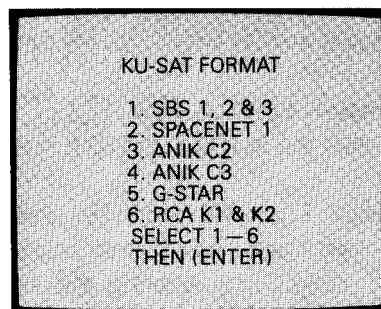
(3) CANCELING A SATELLITE PROGRAM

   (a) Set the receiver mode switch to the PROGRAM position.

   (b) Select the satellite name that is to be canceled.

   (c) Press ⎡CANCEL⎤ to cancel the selected satellite program data.
   Ex. When AURORA F5 is canceled.

   When completed, set the receiver mode switch to the AUTO position.

AURORA F5   CH : 24
(C-BAND)   POL : H

SATELLITE CANCELED
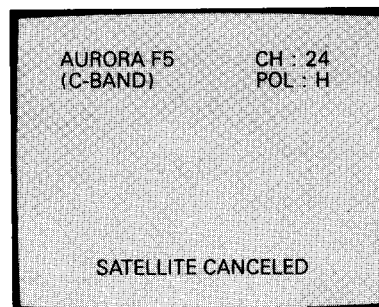
(4) TO CLEAR ALL OF THE SATELLITE PROGRAMS

   (a) Set the receiver mode switch to the PROGRAM position.

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

```
INITIALIZE DATA
ALL SATELLITES

     1. YES
     2. NO

  SELECT 1 — 2
  THEN (ENTER)
```
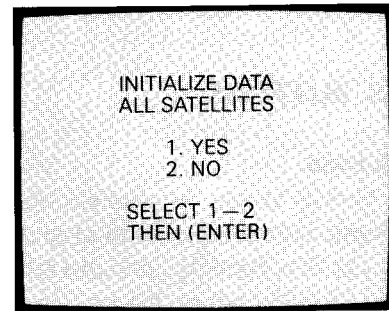
Select 1 and press ENTER to initialize all of the satellite program data.

```
DATA
INITIALIZED
```

Advanced Operation

VIDEOCIPHER® II OPERATION

VideoCipher® II programming can be enjoyed by using this receiver. Once authorization has been received, a VideoCipher® II channel can be viewed as an unscrambled. VideoCipher® II also has some additional features.

CONTROL BUTTONS

1. VIEW button
Press this button to see information about the current program being broadcast on the channel. This will include program title, running time and rating.
This button will also return the picture after on-screen display has been viewed.

2. HELP button
If in a VideoCipher® II setup routine, and unsure of what to do next, press HELP.

3. SETUP button
Use this button with the ALPHANUMERIC buttons to customize your VideoCipher® II features.

4. NEXT PROGRAM button
Press this button to see information about the next program.

5. MESSAGE button
Press this button to see the most recently received personal message that has been sent to you from the program supplier.

6. TEXT button
Press this button to see the text information from the program supplier (when being transmitted.).

7. CANCEL button
Press this button to clear incorrect entries for the VideoCipher® II.

8. < > button
These buttons allow VideoCipher® II text services to be moved and change rating levels to be changed.

tional features.
The following features are only available on VideoCipher® II channels.

9. ENTER button
Press this button to confirm selections and password entries for VideoCipher® II channel setup.

OPERATION

1. For Installation
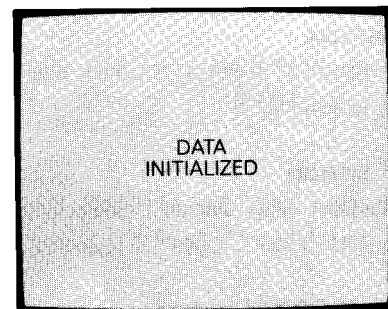Press [SET UP], [1] to see your authorization number and signal strength displayed on the screen.

2. Second Language Audio
(1) Press [SET UP], [2] .
(2) Press [1] to switch between Primary and Alternate.

3. Rating Ceilings
(1) Press [SET UP], [3] .
(2) Enter your password if one has been set. If no password has been set, proceed to the next step.
(3) Press [<] , [>] to change the rating ceiling.

4. Rating Passwords
Some program suppliers offer a feature that allows you to select the maximum rating of the programs that the unit will descramble.
Any program whose rating exceeds the maximum ceiling you have chosen will be locked out. A rating password can be set to prevent the ceiling from being changed.
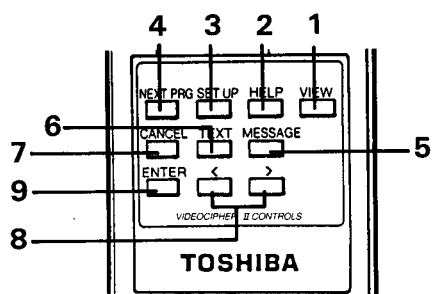To set or change a password.
(1) Press [SET UP], [4] .
(2) Key in your new password and press [ENTER] .
* If the system already has a password, you will need to key in before the system accept a new one.
* If you do not want password control, press [ENTER] twice.

— 31 —

5. Personal Messages

Some program suppliers may choose to send personal messages to you. Typically, these messages will provide additional information about programs, account billings and credits, or special operating instructions.

(1) A Flashing asterisk (*) will appear on the screen to inform you that a messge has been stored.

(2) To read your message, press [MESSAGE] .

To remove the Message Prompt.

(a) Press [SET UP] , [2] .

(b) Press [2] to set the prompt ON/OFF.

6. Program Messages

NO SUBSCRIPTION FOR THIS PROGRAM

The system has not been authorized to receive this channel. Contact your program supplier to receive authorization.

BLACK OUT

The desired program is not available in your geographic area.

PROGRAM LOCKED OUT

The program currently being broadcast on that channel exceeds the rating ceiling that has been set.

7. Next Available Program

(1) Tune to a VideoCipher® II channel.

(2) Press [NEXT PRG] to see the title rating, the starting time and other information about the next program.

(3) The other VideoCipher® II service messages may be seen as described above.

8. Text Services

Some program suppliers may offer a text service that may include news Bulletins, programming promotions, and similar broadcast material.

(1) Tune to a VideoCipher® II channel.

(2) Press [TEXT] .

(3) When a page is selected, a three-digit code must be entered (for example, 017 for the 17 page).

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

VIDEOCIPHER® 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

SENIOR FUNCTIONS

This receiver has many advanced functions that are called senior functions.
The senior functions are listed below.

SENIOR FUNCTIONS LIST

		RECEIVER MODE	
GROUP	FUNCTION	AUTO	PROGRAM
1. CUSTOMER CHOICE	1.1 BEEP ON/OFF	○	○
	1.2 BASIC OSD ON/OFF	○	○
	1.3 LCD BACK LIGHT ON/OFF	○	○
	1.4 ANTENNA MOVE BLANK	○	—
	1.5 CHANNEL SKIP	○	○
	1.6 RF OUTPUT TV/SAT	○	○
2. TUNING	2.1 AUDIO TUNING	○	○
	2.2 CHANNEL FINE	○	○
	2.3 CHANGE POLARITY H/V	○	○
	2.4 ADJUST SKEW	○	○
3. PARENTAL CONTROL	3.1 ANTENNA LOCK ON/OFF	○	—
	3.2 CH LOCKOUT ON/OFF	○	—
	3.3 PL ENABLE/DISABLE	○	—
	3.4 CHANGE PASSWORD	○	○
4. CHANGE PROGRAM	4.1 FAV. PROGRAM ENTER/CANCEL	○	—
	4.2 CHANGE AUDIO PROGRAM	○	○
5. INSTALLATION SETUP	5.1 CHANNEL SCAN ENABLE	—	○
	5.2 AUTO TUNING	—	○
	5.3 SIGNAL BAR SHIFT	—	○
6. INSTALLATION TOOL	6.1 Ku-SATELLITE FORMAT	—	○
	6.2 CALIBRTE Ku-CHANNEL	—	○
	6.3 REALIGN SAT. MEMORY	○	—
	6.4 CHANGE ANTENNA LIMIT	—	○
7. INITIALIZE DATA	7.1 ALL DATA	—	○
	7.2 ALL SATELLITES	—	○
	7.3 Ku-CHANNELS	—	○
	7.4 AUDIO PROGRAMS	—	○
8. DIAGNOSTICS		○	○

○: Indicates the senior function operates in this mode.
—: Indicates the senior function does not operate in this mode.

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

1. BASIC OPERATION OF THE SENIOR FUNCTIONS

(a) Press [FUNCTION] and the senior function list will be displayed as shown at right.

```
SENIOR FUNCTION
1. CUSTOMER CHOICE
2. TUNING
3. PARENTAL CONTROL
4. CHANGE PROGRAM
5. INSTALLATION SETUP
6. INSTALLATION TOOL
7. INITIALIZE DATA
8. DIAGNOSTICS
```
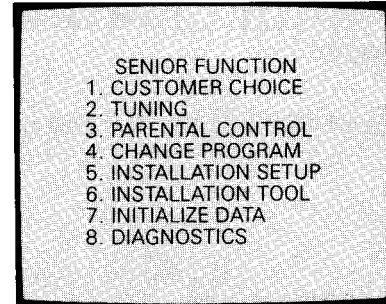
(b) Select the desired senior function number by pressing an ALPHANUMERIC button.
The senior function which is selected will be displayed as shown at right.
Ex 1. When [FUNCTION], [1] is pressed.
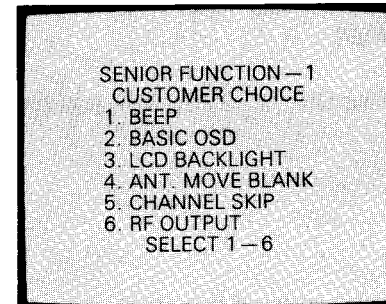
Menues are displayed for senior functions 2—8, as right for 1.

```
SENIOR FUNCTION—1
  CUSTOMER CHOICE
1. BEEP
2. BASIC OSD
3. LCD BACKLIGHT
4. ANT. MOVE BLANK
5. CHANNEL SKIP
6. RF OUTPUT
    SELECT 1—6
```

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

```
BEEP

  1. ON
  2. OFF

SELECT 1—2
THEN (ENTER)
```

Advanced Operation
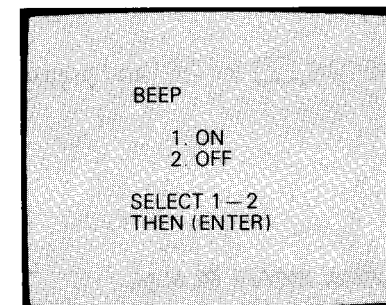
2. SENIOR FUNCTIONS

1. CUSTOMER CHOICE

1.1 BEEP ON/OFF

This function is used to set the BEEP sound ON or OFF.
Press FUNCTION , 1 , 1 and the display will be as shown at right.

Select 1 for ON, 2 for OFF and press ENTER to store.

```
      BEEP

     1. ON
     2. OFF

   SELECT 1 — 2
   THEN (ENTER)
```
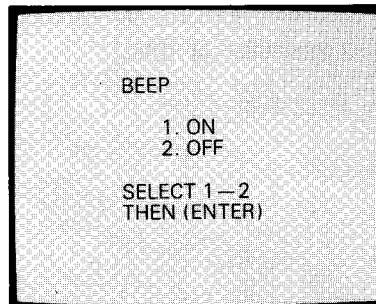
1.2 BASIC OSD ON/OFF

This function is used to set the basic on screen display (channel, band and satellite name etc.) ON or OFF.
Press FUNCTION , 1 , 2 and the display will be as shown at right.

Select 1 for ON, or 2 for OFF and press ENTER .

```
    BASIC OSD

     1. ON
     2. OFF

   SELECT 1 — 2
   THEN (ENTER)
```
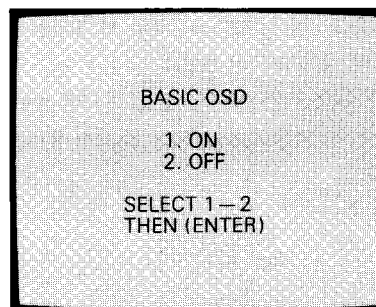
1.3 LCD BACKLIGHT ON/OFF

This function is used to set the backlight of the Liquid Crystal Display ON or OFF.
Press FUNCTION , 1 , 3 and the display will be as shown at right.

Press 1 for ON, 2 for OFF and press ENTER .

```
   LCD BACKLIGHT

     1. ON
     2. OFF

   SELECT 1 — 2
   THEN (ENTER)
```
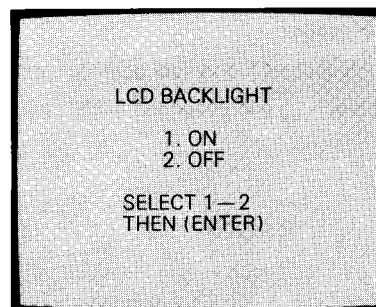
1.4 ANTENNA MOVE BLANK

This function makes the TV screen blackout when the antenna is moving between satellites.
Press FUNCTION 1 , 4 and the display will be as shown at right.

Press 1 for ON, 2 for OFF and press ENTER to store.

```
  ANT. MOVE BLANK

     1. ON
     2. OFF

   SELECT 1 — 2
   THEN (ENTER)
```

Advanced Operation
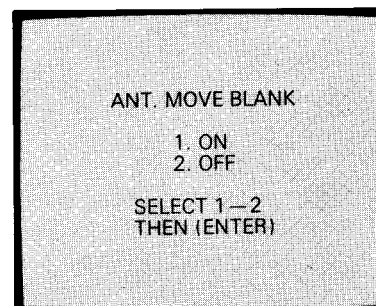
1.5 CHANNEL SKIP

The TRX-100 can be programed to skip one or more channels of a satellite.

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

(b) Press FUNCTION , 1 , 5 and the display will be as shown at right.

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

           PRESS (↓, ↑)
      THEN (ENTER, CANCEL)
```
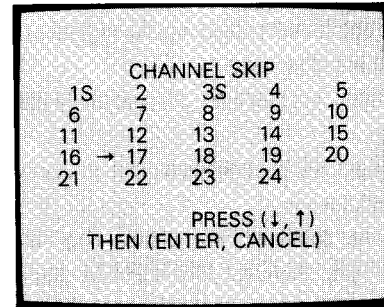
When programming a the channel skip:
Select the desired channel by pressing EAST ☑ or WEST ☒.
Press ENTER and the channel is programmed to skip. A * will be displayed as shown at right.
Press VIEW to return to the normal condition.

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 return to the normal condition.

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

           PRESS (↓, ↑)
      THEN (ENTER, CANCEL)
```
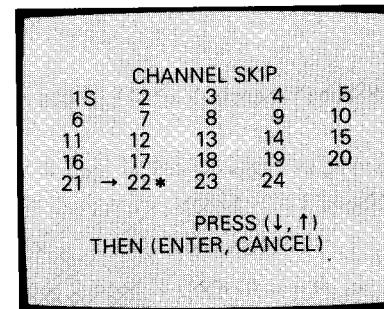
1.6 RF OUTPUT

This function is used to select the RF output, TV or satellite.

Press FUNCTION , 1 , 6 and the display will be as shown at right.

Select 1 for the TV signal (VHF IN), 2 for the satellite signal and press ENTER to store.

```
        RF OUTPUT

         1. TV
         2. SAT

       SELECT 1 — 2
       THEN (ENTER)
```

Advanced Operation

— 36 —

2. TUNING

2.1 AUDIO TUNING

Most of the AUDIO PROGRAMS are stored by a channel.

Normally AUDIO TUNING is not needed.

But when the transmitted audio signal is changed, audio carrier can be changed.

This function is used to temporarily tune the channel frequency.

When a channel is chagned, the preprogrammed audio data will return.

When it is desired to store the audio data, see CHANGE THE AUDIO PROGRAM section (page 40).

(a) Press FUNCTION , 2 , 1 . The present AUDIO data will be displayed.

```
          AUDIO TUNING

1. MODE : DISCRITE STEREO

2. BAND : WIDE
3. A1     : 5.76MHz
4. A2     : 5.92MH

   SELECT 1—4, (↓, ↑)
   PRESS (VIEW)
```
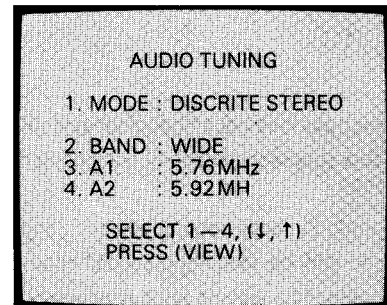
(b) Select the item number (1-4) of the audio tuning.

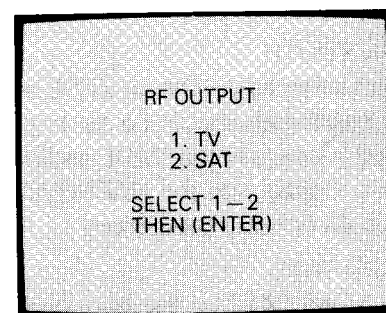By pressing or holding EAST ▼ or WEST ▲ , set to the desired condition.

Press VIEW to return.

The items of the AUDIO TUNING are as follows.

● MODE
Select MONAURAL, DISCRETE STEREO or MA-TRIX STEREO in accordance with the audio mode of the current program.

● BANDWIDTH
Select either NARROW or WIDE audio bandwidth. The bandwidth should be set to produce the best sound. Generally the WIDE setting is prefered for strong signals and the NARROW setting is better for weak or noisy subcarriers.

● AUDIO "A1"
The audio "A1" is the frequency of the mono, left, or L+R.
Enter the frequency by refering to a current program guide.

● AUDIO "A2"
The audio "A2" is the frequency of the right or the L-R.
Enter the frequency by refering to a current program guide.

Advanced Operation

2.2 CHANNEL FINE

This function is used to temporarily tune the Ku-satellite channel frequency.

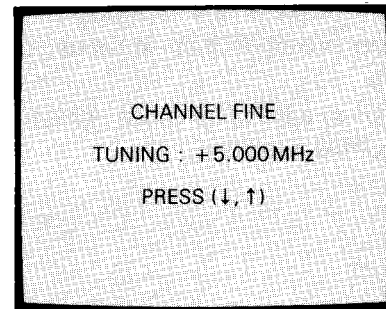(a) Select the Ku-band satellite that is to have the channel frequency changed.

(b) Press FUNCTION , 2 , 2 .

By pressing or holding EAST ☑ or WEST ☒ button, adjust for the best picture.

Press VIEW to return to the normal condition.

```
CHANNEL FINE

TUNING : +5.000MHz

PRESS (↓, ↑)
```

2.3 CHANGE POLARITY

Polarity settings are factory programmed. They are selected when recalling a satellite, and when changing between even and odd numbered channels. If the feed horn is correctly aligned, and if the each satellite is correctly identified, there is no need to change the polarity. When the feed horn is not correctly installed or a new satellite is programmed, which is not in memory, the polarity may be required to be changed by a satellite, or by a channel.

The polarity can be changed as follows.

(a) Set the receiver mode switch to the desired position. When in the AUTO mode, polarity can be changed temporarily and the preprogrammed polarity will return when changing satellite. When in the PROGRAM mode, the polarity can be changed and stored.

(b)

● When receiving a C-band satellite.

Press FUNCTION , 2 , 3 , the display will be as shown at right.

Select 1 for the factory programmed polarity, or select 2 for the inverse, and the selected polarity is set on the every channel.

When in the PROGRAM mode, press ENTER to store.

When in the AUTO mode, press VIEW to return to normal condition.

● When receiving a Ku-band satellite.

Press FUNCTION , 2 , 4 and the display will be as shown at right.
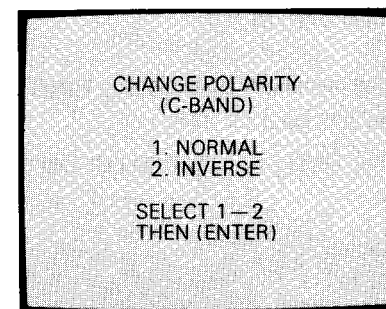
```
CHANGE POLARITY
(C-BAND)

1. NORMAL
2. INVERSE

SELECT 1—2
THEN (ENTER)
```

When the receiver is in the PROGRAM mode.

```
CHANGE POLARITY
(C-BAND)

1. NORMAL
2. INVERSE

SELECT 1—2
PRESS (ENTER)
```

When the receiver is in the AUTO mode.

Advanced Operation
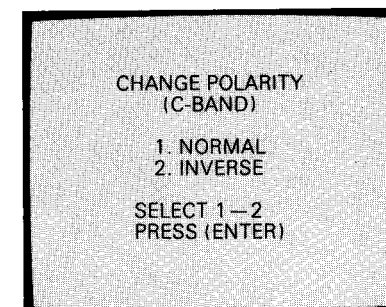
Select ☐1 for H, select ☐2 for V, the selected polarity is set on the receiving channel.
When in the PROGRAM mode, press ENTER to store.
When in the AUTO mode, press VIEW to return to normal condition.

```
     CHANGE POLARITY
        (KU-BAND)

          1. H
          2. V

       SELECT 1 — 2
       THEN (ENTER)
```

When the receiver is
in the PROGRAM mode.

```
     CHANGE POLARITY
        (KU-BAND)

          1. H
          2. V

       SELECT 1 — 2
       THEN (VIEW)
```
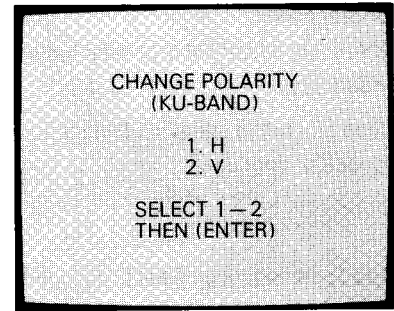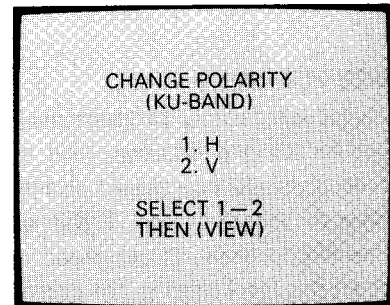
When the receiver is
in the AUTO mode.

2.4 ADJUST SKEW

Normally when the AUTO TUNING is selected (SENIOR FUNCTION 5-2), there is no need to adjust the antenna skew. But if desired, the skew can be adjusted manually as follows.

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

```
       ADJUST SKEW

     SKEW ANGLE : 21

       PRESS (↓, ↑)
       THEN (ENTER)
```

(b) Adjust the skew by pressing EAST ☑ or WEST ☒ to get the best picture.

Press VIEW to return to normal condition.

Advanced Operation
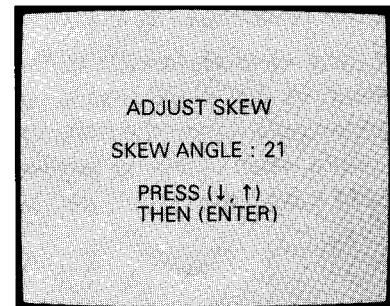
3. PARENTAL CONTROL

This receiver has two parental control functions. They are the antenna lock and channel lockout.
See the page 23 to operate.

3.1 ANTENNA LOCK ON/OFF
This function is used to lock the antenna movement.

3.2 CH LOCKOUT ON/OFF
This function is used to lockout a satellite channel.

3.3 PL ENABLE/DISABLE
This function is used to enable or disable the parental control function with the programmed data.

3.4 CHANGING THE PASSWORD
This function is used to change the password that has been programmed for the parental control feature.

4. CHANGE THE PROGRAM

4.1 FAVORITE PROGRAM (ENTER/CANCEL)
The favorite program feature allows up to 20 favorite satellite programs to be stored for automatic recall.
See FAVORITE PROGRAM section (page 21) to operate.

4.2 CHANGE THE AUDIO PROGRAM
Ten audio programs are factory programmed. If desired, the audio program can be changed as follows.

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

```
        AUDIO TUNING

  1. MODE : MATRIX STEREO
  2. BAND : NARROW
  3. A1    : 5.76MHz
  4. A2    : 5.92MH

      SELECT 1—4, (↓, ↑)
        THEN (ENTER)
```
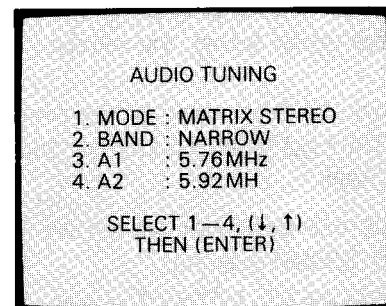
(b) Select the item number (1-4) to tune.

By pressing or holding EAST ☑ or WEST ☒ , set to the desired condition that is to be stored.
Press ENTER and the AUDIO program data that is to be stored will be displayed as shown at right.

```
       AUDIO PROGRAM
  OLD PROGRAM :

  → NEW PROGRAM
    MODE    BW     A1     A2
     MS      W    5.76   5.92
         SELECT 1—9
         THEN (ENTER)
```

Advanced Operation
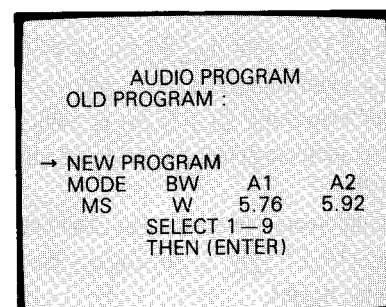
Select the AUDIO PROGRAM number (1-9) that is to be stored, and press ⌐ENTER⌐.

```
         AUDIO PROGRAM
    OLD PROGRAM : 3
    MODE     BW     A1      A2
     MS      W     6.62    7.12
  → NEW PROGRAM
    MODE     BW     A1      A2
     MS      W     5.76    5.92
         SELECT 1 − 9
         THEN (ENTER)
```

(c) If it is undecided which program number to store, press ⌐AUDIO SELECT⌐. 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.
Note: AUDIO PROGRAM 0 (VC AUTO) is only for VIDEOCIPHER® II. The audio program 0 can not be changed.

```
       AUDIO PROGRAM LIST − 0
   NO   MODE   BW    A1     A2
    0   VC AUTO
    1    MN    W    6.80
    2    MN    N    7.75
    3    DS    N    6.62   7.12
    4    MS    W    5.96   6.12
            PRESS (VIEW)
```

5. INSTALLATION SETUP

The following functions are available only when the receiver is in the PROGRAM mode.

5.1 CHANNEL SCAN ENABLE

The channel scan feature allows the receiver to search rapidly for channels of preprogrammed satellites. The receiver stops scanning when a signal is found. When the channel signal is lost, the receiver begins scanning again.
This function is useful when programming satellites.
See the SATELLITE POSITION section about the advanced operation.

(a) Set the receiver mode switch on the rear panel to the PROGRAM position.

(b) Press ⌐FUNCTION⌐, ⌐5⌐, ⌐1⌐ and the display will be as shown at right.

(c) Select ⌐1⌐ for ON or ⌐2⌐ for OFF. Press ⌐ENTER⌐ to turn the channel scan on or off.
When CHANNEL SCAN on is selected, it will begin channel scanning rapidly and will stop when a signal is found.
When the receiver loses the channel signal as EAST ⌐⌵⌐ or WEST ⌐⌃⌐ is pressed, the receiver begins scanning again.

```
         CHANNEL SCAN

          1. ON
          2. OFF

         SELECT 1 − 2
         THEN (ENTER)
```

5.2 AUTO TUNING

When this function is on, the antenna position and the skew for the strongest signal is automatically fine-tuned.
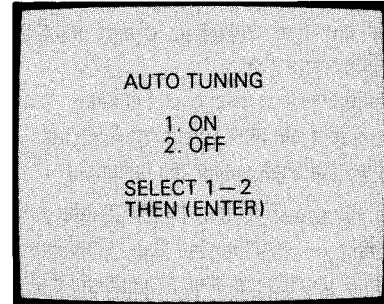
(a) Set the receiver mode switch on the rear panel to the PROGRAM position.

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

(c) Select 1 and press ENTER to set the auto tuning.

5.3 SIGNAL BAR SHIFT

The signal bar graph indicates the input signal level in the PROGRAM mode, and indicates the audio output level in the AUTO mode. The input signal level can be shifted up or down to accommodate very weak or very strong RF signals.
The signal for shift has no effect on the audio output level.

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

(b) Press FUNCTION , 5 , 3 and the display will be as shown at right.
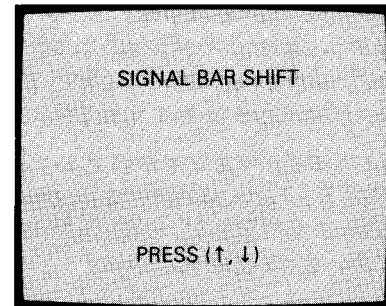
In the PROGRAM mode, the left indicator displays the RF input signal level and the right indicator displays the reference level for the input signal.
If the RF signal is too weak, the reference indicator can be shifted down to compenate for the low input level.
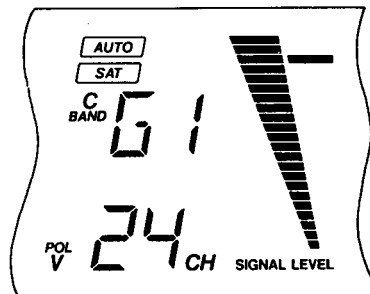
In the AUTO mode, the indicators display the audio output level.
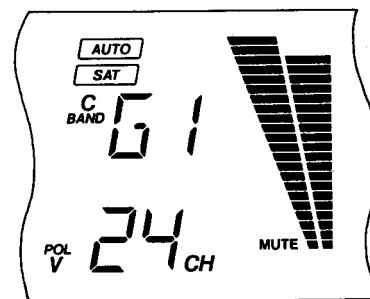
(c) By pressing or holding EAST ⬇ or WEST ⬆ , set the indicator to the desired level.
Press VIEW to return to the normal mode.

AUTO TUNING

1. ON
2. OFF

SELECT 1-2
THEN (ENTER)

SIGNAL BAR SHIFT

PRESS (↑, ↓)

6. INSTALLATION TOOL

6.1 SATELLITE FORMAT

This function is used to specify the Ku-band satellite channel format number of channels, polarity, and center frequencies for any new satellite. 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 the format.

(b) Press FUNCTION , 6 , 1 and select the desired satellite format (1 — 6).
   Press ENTER to specify the format.

```
         KU-SAT. FORMAT

      1. SBS 1, 2 & 3
      2. SPACEMENT 1
      3. ANIK C2
      4. ANIK C3
      5. G-STAR
      6. RCA K1 & K2
         SELECT 1—6
         THEN (ENTER)
```

6.2 CALIBRATE Ku-CHANNEL

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

(a) Confirm that the receiver is in the AUTO mode.
   Select the Ku-band satellite to be calibrated. See the CHANGING SATELLITE PROGRAMS section (page 28) on the detail operation.

(b) Set the receiver mode switch to the PROGRAM position.

(c) By using the channel ∨ or ∧ button, or the ALPHANUMERIC buttons, input the channel number to be programmed.

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

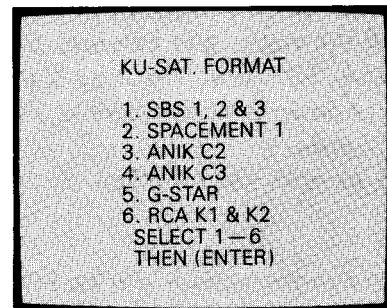(e) By using the EAST ∨ or WEST ∧ button, adjust the frequency for the best picture.

(f) Press ENTER to store the channel frequency.

```
       CALIBRATE KU-CH

    G-STAR 1          CH : 6

        1,330.000MHz

         PRESS (↓, ↑)
         THEN (ENTER)
```
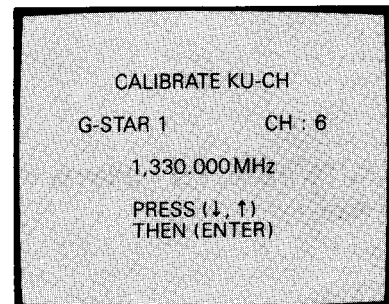
If it is desired to program additional channels, operate again from (c).
When completed, set the receiver mode switch to the AUTO position.

6.3 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 satellite positions.

By this function memory can be restored. If all satellites are mis-positioned 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 , 6 , 3 and the display will be as shown at right.

(d) By using EAST ☑ or WEST ☒, move the antenna to the position for the best picture.
Press ENTER to realign the satellite memory.

```
REALIGN SAT. MEMORY

SATCOM F3        CH : 24
(C-BAND)         POL : V

      PRESS ( ↓, ↑ )
      THEN (ENTER)
```
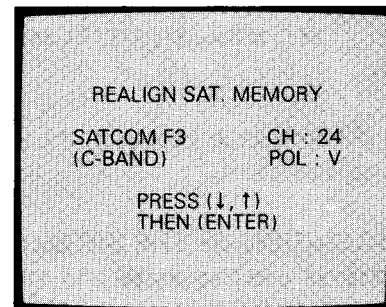
6.4 CHANGE ANTENNA LIMIT

The antenna limits can be changed as follows.

(a) Confirm that the receiver mode switch on the rear panel is in the PROGRAM position.

(b) Press FUNCTION , 6 , 4 and the display will be as shown at right.

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

```
CHANGE ANT. LIMIT

      1. EAST
      2. WEST

    SELECT 1 – 2
    THEN (CANCEL)
```

(d) Move the dish to the new east or west limit which is to be programmed.
Press ENTER to store the new antenna limit.

```
CHANGE ANTENNA LIMIT
    MOVE DISH TO
    NEW EAST LIMIT

    PRESS ( ↓, ↑ )
    THEN (ENTER)
```

Advanced Operation
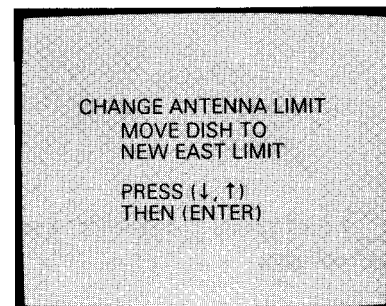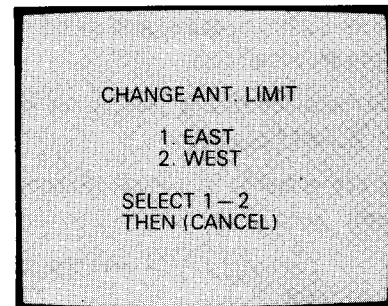
7. INITIALIZE DATA

7.1 INITIALIZATION OF ALL DATA

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

(a) Set the receiver mode switch on the rear panel to the PROGRAM position.

(b) Press `FUNCTION`, `7`, `1` and the display will be as shown at right.

```
INITIALIZE DATA
ALL DATA

        1. YES
        2. NO

        SELECT 1—2
        THEN (ENTER)
```

Select `1` and press `ENTER` to erase and initialize all data.

Note: When data is initialized, the audio level is set to maximum.
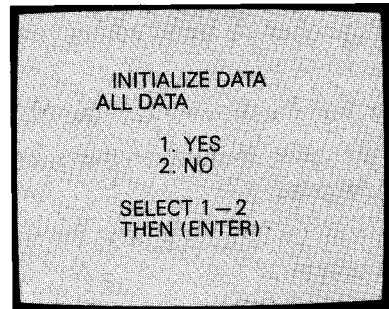
7.2 INITIALIZATION OF THE SATELLITE DATA

This function is used to erase and initialize all of the satellite data.
See the PROGRAMMING SATELLITES section to operate.

7.3 INITIALIZATION OF Ku-CHANNELS DATA

This function is used to erase and initialize Ku-SATELLITE channel data by a satellite.

(a) Set the receiver mode switch on the rear panel to the PROGRAM position.

(b) Select the satellite in which channel data is to be initialized.

(c) Press   , `7` , `3` and the display will be as shown at right.

```
INITIALIZE DATA
KU CHANNEL

SBS S1              CH : 32

        1. YES
        2. NO

        SELECT 1—2
        THEN (ENTER)
```
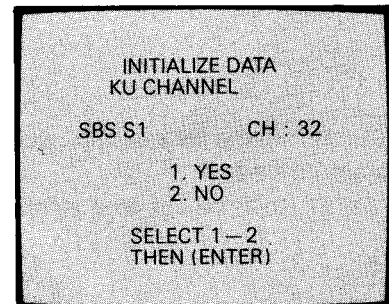
(d) Input `1` and press `ENTER` to erase and initialize the channel data.

7.4 INITIALIZATION OF AUDIO PROGRAMS

This function is used to erase and initialize the audio program data by a satellite, which has been programmed.

(a) Select the satellite which is to have the audio programs initialized.

(b) Set the receiver mode switch on the rear panel to the PROGRAM position.

(c) Press FUNCTION , 7 , 4 and the display will be as shown at right.

```
        INITIALIZE DATA
        AUDIO PROGRAMS
    SATCOM F3          CH : 24

            1. YES
            2. NO

          SELECT 1 - 2
          THEN (ENTER)
```
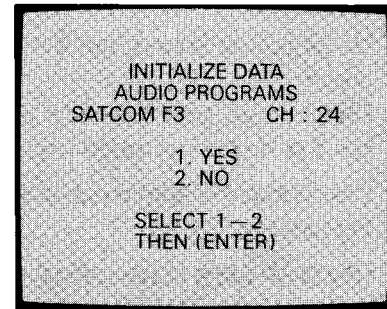
Input 1 and ENTER to erase and initialize.

8. DIAGNOSTICS

This function aids in troubleshooting in the event that this receiver should ever develop a problem. By using this function, the service engineer can often help troubleshoot the TRX-100.

Press FUNCTION , 8 and the DIAGNOSTICS screen will be displayed.

Press VIEW to return to normal condition.

Advanced Operation

TROUBLE SHOOTING

The TRX-100 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 lights are on.
solution: Check to be sure television is tuned to channel 3 or 4 channel when using the VHF OUT.

Check that the antenna is aimed to an operating satellite.

Check all cable connections.

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.

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 SAT-ELLITES SECTION in the Senior Functions.

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

problem: The receiver will not enter a SENIOR FUNCTION.
solution: Confirm that the receiver is in the proper mode. Refer to the SENIOR FUNCTION list on page 33.

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

problem: When an unusual condition occurs and function buttons do not operate.
solution: Unplug the AC cord.
Wait a few minutes and reconnect.

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	140 MHz
Threshold	7 dB C/N
Bandwidth	27 MHz

VIDEO PERFORMANCE

VIDEO OUT

Format	NTSC
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 changeable
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 MODURATOR

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

POWER

Primary Power	120 VAC, 60 Hz
Power Consumption	185 watts
Power Supply to LNB	15 to 21.2 VDC, 180 mA max. ×2
Polarizer Output (Motor Driven type)	5 ±0.5v, 1.0A max.

ACTUATOR INTERFACE

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

ENVIRONMENTAL CONDITIONS

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

MECHANICAL

Size	17″ × 3-1/2″ × 13-3/4″
Weight	20 lbs

Design and specifications are subject to change without notice.

LIMITED WARRANTY
TOSHIBA SATELLITE RECEIVER

Toshiba America, Inc. ("TAI") makes the following limited warranties. These limited warranties extend to the original consumer purchaser or any person receiving this set as a gift from the original consumer purchaser and to no other purchaser or transferee.

Limited One (1) Year Warranty

TAI warrants this product and its parts against defects in materials or workmanship for a period of one year after the date of original retail purchase. During this period, TAI will repair a defective product or part, without charge to you. You must deliver the entire set to a selling dealer. You pay for all transportation and insurance charges for the set to and from the selling dealer.

Owner's Manual and Warranty Registration

You should read the owner's manual thoroughly before operating this product. You should also insure that your name and address is on file as an owner of a TAI product by completing and mailing the enclosed registration card within ten days after you, or the person who has given you this product as a gift, purchased this product. This is one way to enable TAI to establish the date of purchase of the product, as well as to provide you with better customer service and improved products. Failure to return the card will not affect your rights under this warranty so long as you retain other proof of purchase such as a bill of sale.

Your Responsibility

The above warranties are subject to the following conditions:

(1) You must retain your bill of sale or provide other proof of purchase. Completing and mailing in the attached registration card within ten days after the original retail purchase is one way of providing such other proof of purchase.

(2) You must notify the selling dealer within ten (10) days after you discover a defective product or part.

(3) All warranty servicing of this product must be made by TAI Service Center.

(4) These warranties are effective only if the product is purchased and operated in the U.S.A.

(5) Any charges for installation, assembly, set up and adjustment of controls are not covered by this warranty. Reception problems caused by inadequate antenna systems and other components are your responsibility.

(6) Warranties extend only to defects in materials or workmanship as limited above and do not extend to any product or parts which have been lost or discarded by you or to damage to products or parts caused by misuse, accident, improper installation, improper maintenance, assembly or use with incompatible products or use in violation of instructions furnished by us; or to units which have been altered or modified without authorization of TAI or to damage to products or parts thereof which have had the serial number removed, altered, defaced or rendered illegible.
NOTE: The VideoCipher® II descrambler module should not be returned for service without the TRX-100, unless you have received prior authorization from the TAI Service Center.

(7) TAI shall have no liability or responsibility to reimburse or compensate you for the loss of paid subscription television programming, such as, but not limited to, HBO, Showtime, etc. in the event this product requires servicing. You are advised to notify each programmer being paid a subscription fee that the product is "out of service" and that you wish to suspend you subscription while the product is being serviced.

Step-by-Step Procedures—How to Obtain Warranty Service

To obtain warranty servicing, you should:

(1) Contact the selling dealer for warranty service within ten (10) days after you find a defective product or part for instructions.

(2) Arrange for the delivery of the product to the selling dealer. Products shipped to the selling dealer must be insured and safely and securely packed, preferably in the original shipping carton, and a letter explaining the defect and also a copy of the bill of sale or other proof of purchase must be enclosed. All transportation and insurance charges must be prepaid by you.

(3) If you have any question about service, please contact the following TAI Service Center:

Toshiba America, Inc.
Service Center
2900 MacArthur Blvd.
Northbrook, IL 60062
Phone Number:
(312) 564-1200

ALL WARRANTIES IMPLIED BY STATE LAW, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY LIMITED TO THE DURATION OF THE LIMITED WARRANTIES SET FORTH ABOVE. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. WITH THE EXCEPTION OF ANY WARRANTIES IMPLIED BY STATE LAW AS HEREBY LIMITED, THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES, AGREEMENTS AND SIMILAR OBLIGATIONS OF MANUFACTURER OR SELLER WITH RESPECT TO THE REPAIR OR REPLACEMENT OF ANY PRODUCT OR PARTS.
IN NO EVENT SHALL TAI BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation may not apply to you.

No person, agent, distributor, dealer, service station or company is authorized to change, modify or extend the terms of these warranties in any manner whatsoever. The time within which an action must be commenced to enforce any obligation of TAI arising under this warranty or under any statute, or law of the United States or any state thereof, is hereby limited to one year from the date you discover or should have discovered the defect. This limitation does not apply to implied warranties arising under state law. Some states do not permit limitation of the time within which you may bring an action beyond the limits provided by state law so the above provision may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

TOSHIBA AMERICA, INC.

BRANCH OFFICE/CHICAGO: 2900 MACARTHUR BOULEVARD, NORTHBROOK, ILLINOIS 60062 PHONE: (312) 564-1200

23982284