TRX-80
SATELLITE RECEIVER

INSTALLATION AND OPERATION MANUAL

TOSHIBA

VIDEOCIPHER II
SATELLITE RECEIVER MODEL TRX-80

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.

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.


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 rear panel. 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 place 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 and serious damage to the appliance.
9. Do not use accessories which are 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.
12. Before connecting a satellite antenna, conventional TV antenna or cable system to this product, be sure the 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 the antenna discharge unit as close as possible to where the 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.

EXAMPLE OF ANTENNA GROUNDING ACCORDING TO NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810 — "RADIO AND TELEVISION EQUIPMENT"
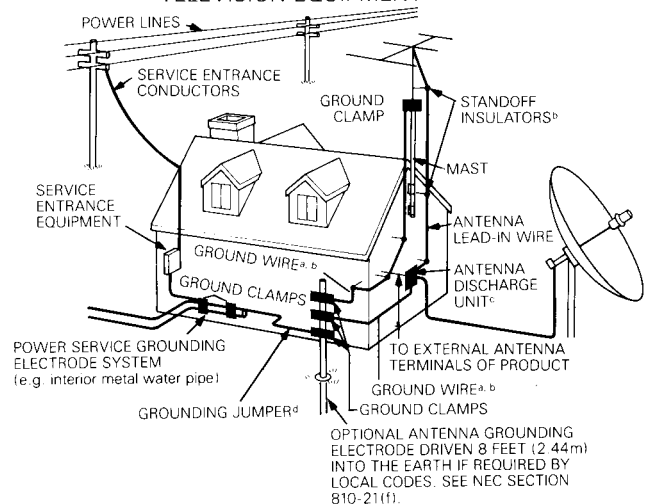
"INSTALL WIRING ACCORDING TO THE CANADIAN ELECTRICAL CODE IN CANADA"
"EFFECTUER LE CABLAGE CONFORMEMENT AU CODE CANADIEN DE L'ELECTRICITE AU CANADA"

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

IMPORTANT SAFEGUARDS

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 near 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.

16. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

PORTABLE CART WARNING
(Symbol provided by RETAC)

83125A

FEATURES

Thank you for purchasing the TOSHIBA TRX-80. This is an Integrated Receiver Descrambler with an automatic antenna positioner, using VIDEOCIPHER® II technology. This system has superior performance and many advanced functions. We are confident that you will be fully satisfied with your new TRX-80. This system has following features.

C/Ku band compatible

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

Built-in Programmable antenna positioner
22 C-band satellites and 22 Ku-band satellites can be programmed.

LARGE FL (FLUORESCENT)/LED DISPLAY
Displays satellite name, channel, audio data etc.

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

Favorite Satellite Channel Memory
The TRX-80 can be programmed 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 Satellites and Channels

Parental Lock (antenna lock, channel lock out)

Auto Tuning (skew, dish position)

Full Function Remote Control Unit

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FEATURES & CONTROLS

SET UP

BASIC OPERATION

ADVANCED OPERATION

OTHER

INSTALLATION

1. BASIC INSTALLATION

(1) SINGLE LNB

TO LNB

TO ACTUATOR

TO POLARIZER

TO VHF
ANTENNA

There is
no need to
select V & H
or C & Ku.

VIDEO IN

VHF IN

MONITOR

TV

AUDIO IN

AUDIO SET
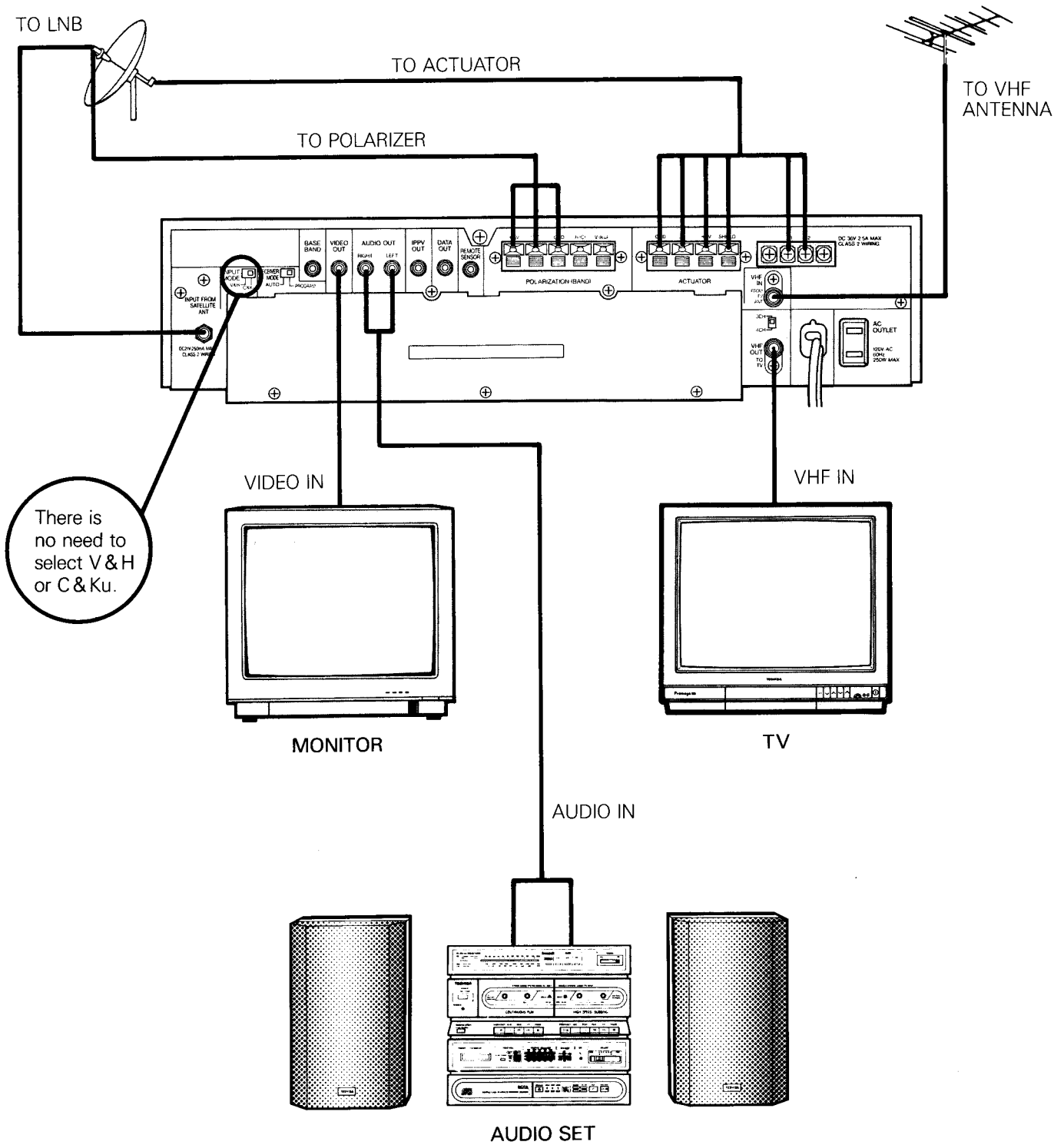
(2) DUAL LNBs (C-Band only or Ku-Band only)

TO LNB

TO ACTUATOR

TO VHF
ANTENNA

A/B
SWITCH

Select V & H

V & H ─┐
        C & Ku

VIDEO IN

VHF IN

MONITOR

TV

AUDIO IN

AUDIO SET
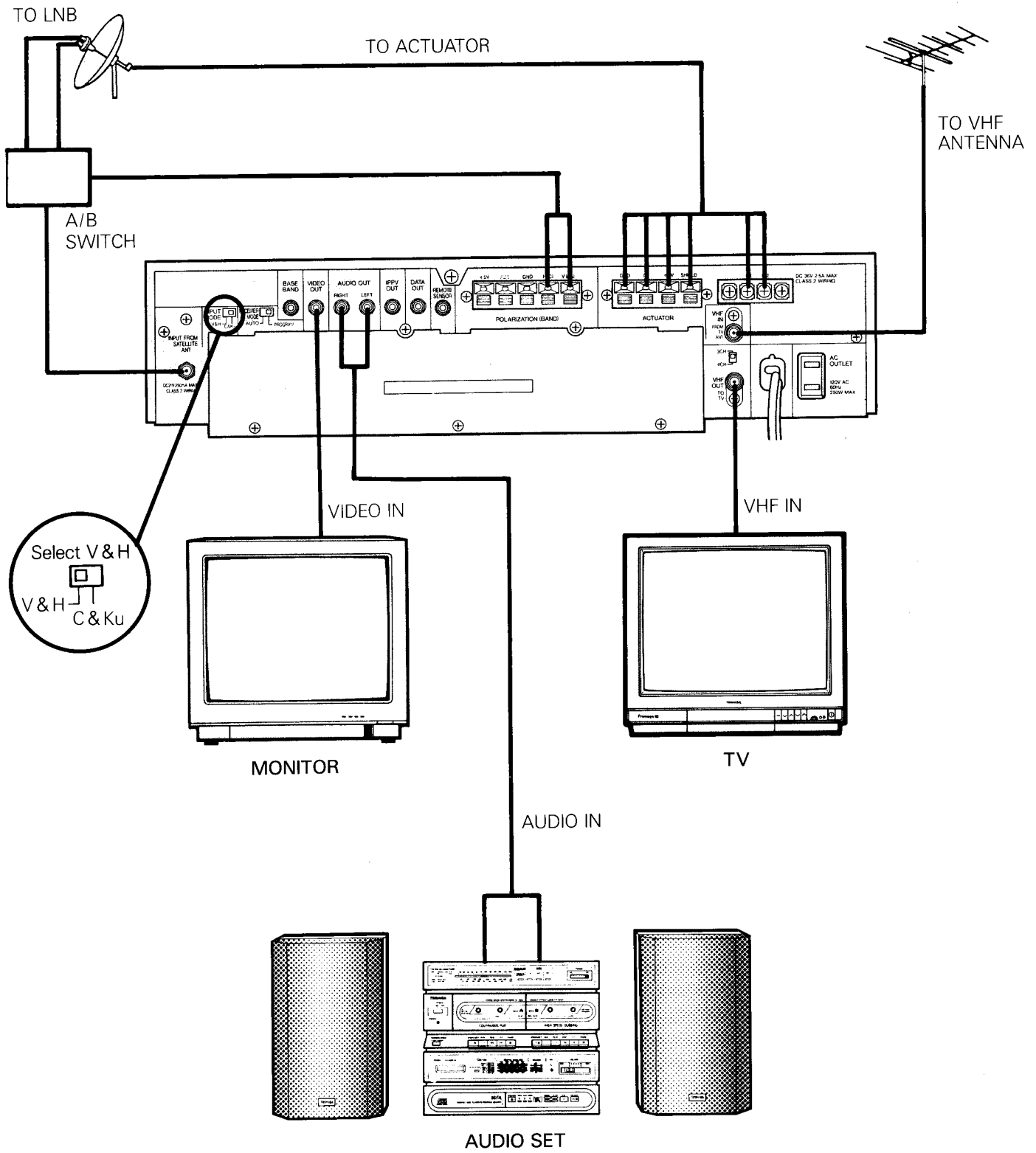
INSTALLATION

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

TO LNB

TO ACTUATOR

TO POLARIZOR

VHF ANTENNA

C/KU SWITCH

Select C & Ku

V & H — C & Ku

VIDEO IN

VHF IN

MONITOR

TV

AUDIO IN

AUDIO SET
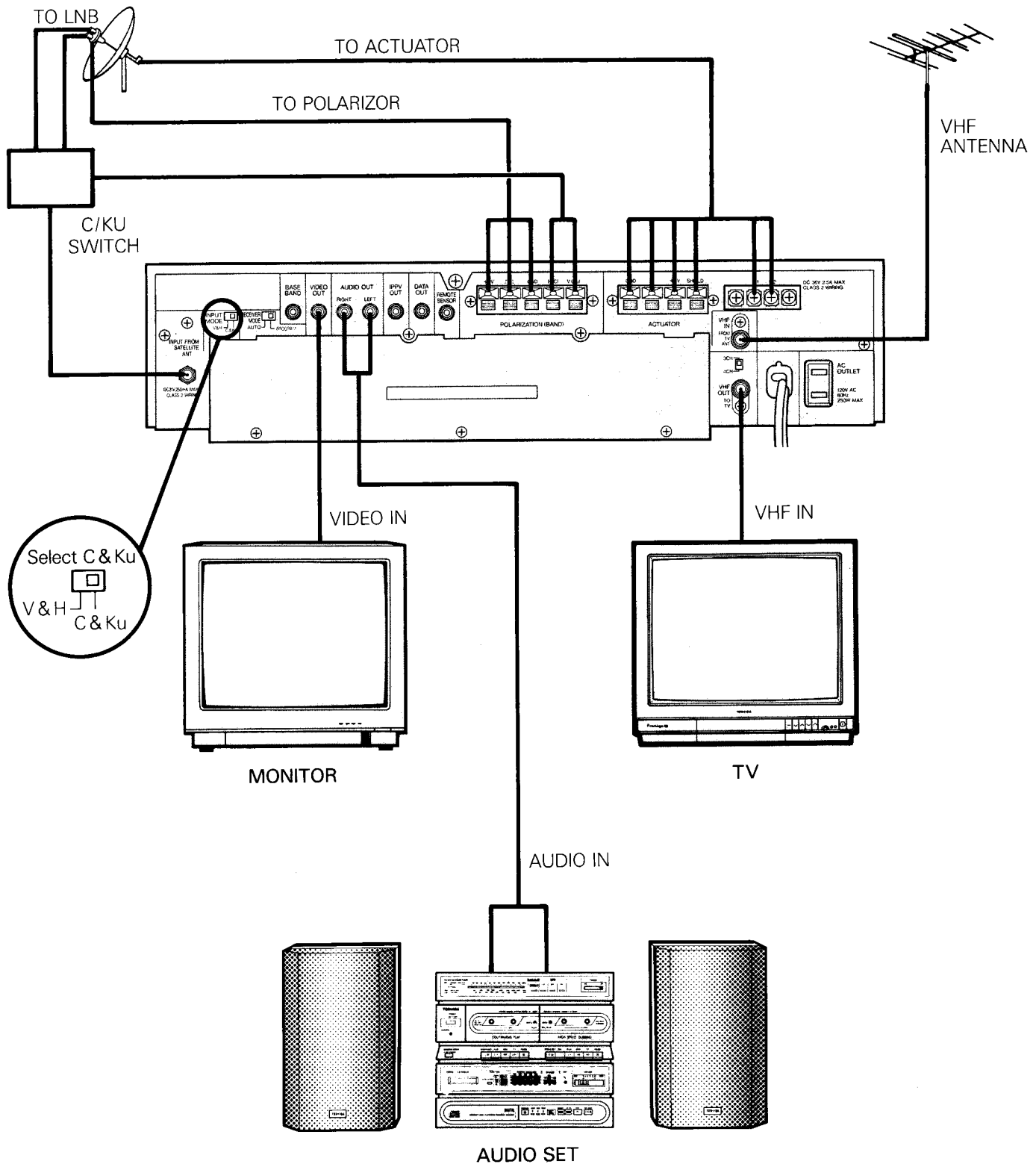
2. EXAMPLE OF CONNECTIONS TO OTHER AV COMPONENTS

Ex 1.
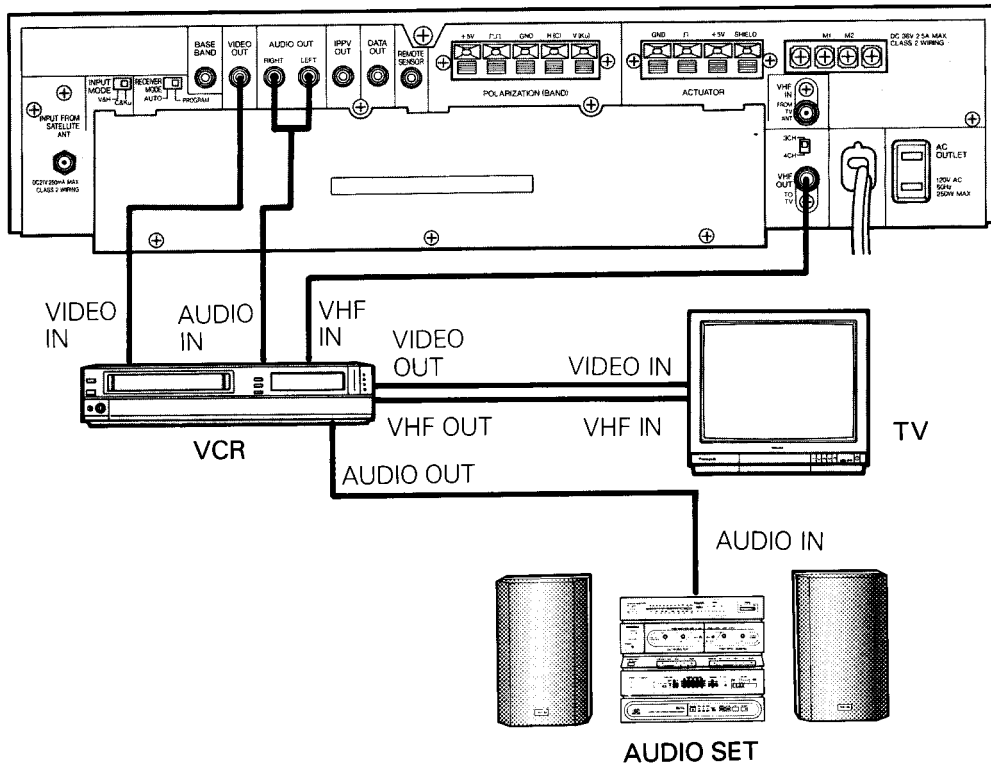
Ex 2.
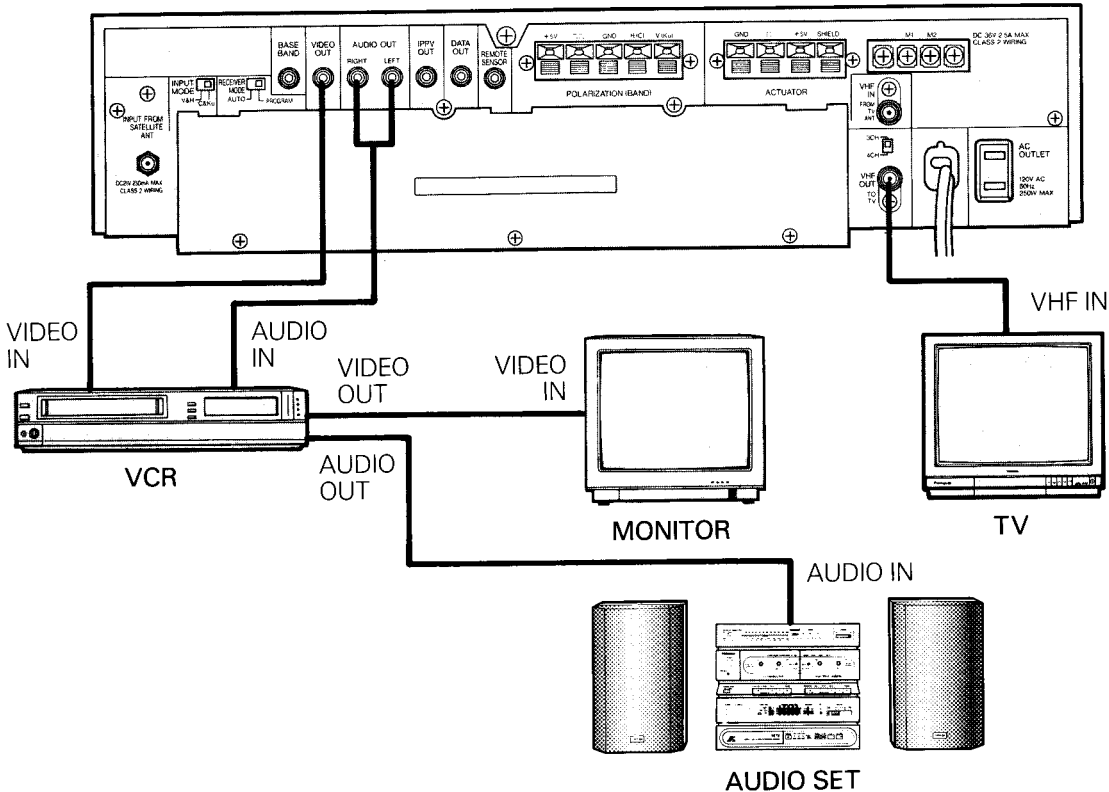
Note: When recording a program on a VCR, set the TRX-80's volume control to 31 (max.).

INDICATION OF CONTROLS

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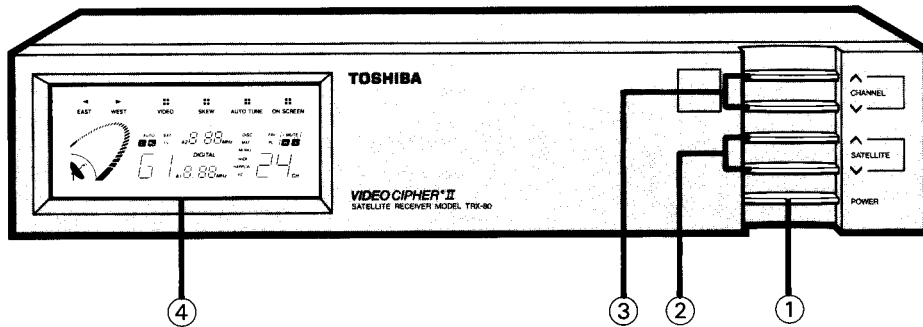
① POWER BUTTON
Turns the receiver on or off.

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 FRONT PANEL DISPLAY
Displays current satellite information.

REAR PANEL

❶ INPUT
This F connector is the RF input accepting signals in the range of 950 to 1450 MHz.

❷ INPUT MODE SWITCH
This switch selects the input mode, V & H or C & Ku to control an external A/B switch.
The control signals to the A/B switch are provided from ⑯ and ⑰.

❸ 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.

❹ BASE BAND
This phono connector provides unfiltered, unclamped composite baseband video output to an external descrambler.
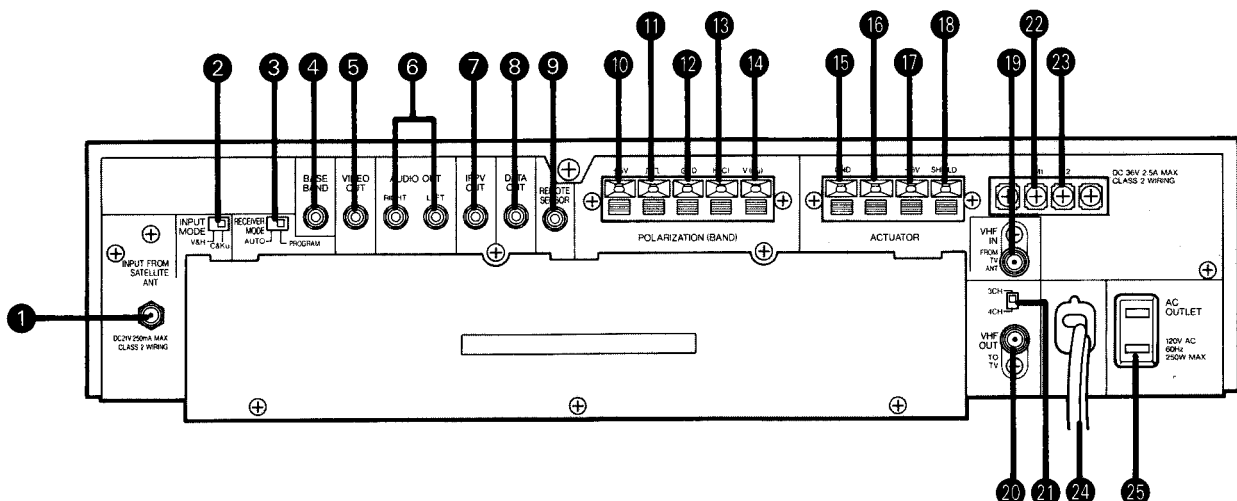
⑤ VIDEO OUT
This phono connector provides the video output to a VCR or a monitor.

⑥ AUDIO OUT
These phono connectors provide the audio outputs, left and right, from the receiver. The output level can be adjusted from the remote.

⑦ IPPV OUT
This phono connector provides an output from the ViceoCipher® II module for an Impulse Pay Per View adaptor.

⑧ DATA OUT
This phono connector provides output data from the VideoCipher® II module.

⑨ REMOTE SENSOR
This jack is used for the optional UHF remote control adaptor.

⑩ +5V
This terminal is the 5V supply for the polarizer.

⑪ ЛЛ
This terminal is the output control for the polarizer.

⑫ GND
This is a return line for ⑩, ⑪, ⑬, ⑭.

⑬ H (C)
This output provides +12V to an external A/B switch when:
● The INPUT MODE switch is in the H & V mode and H polarity is selected.
● The INPUT MODE switch is in the C & Ku mode and C-band satellite is selected.

⑭ V (Ku)
This output provides +12V to an external A/B switch when:
● The INPUT MODE switch is in the H & V mode and V polarity is selected.
● The INPUT MODE switch is in the C & Ku mode and Ku-band satellite is selected.

⑮ GND
An actuator position feedback line used in conjunction with ⑯ or ⑯ and ⑰.

⑯ Л
This is the return pulse from the actuator.

⑰ +5V
The actuator signal line that provides +5V to a hall effect device.

⑱ SHIELD
A shielded line for the actuator signal.

⑲ VHF IN
A VHF signal input. Connect to a VHF antenna or cable system.

⑳ VHF OUT
Channel 3 or 4 modulated VHF signal output. Connect to the VHF input on a television set.

㉑ CHANNEL 3/4
The output of the modulator, ⑳ (VHF OUT) is controlled by this switch. TV reception on channel 3 or 4 is possible.

㉒ M1
Combined with ㉓, this output controls the motor direction and dynamic braking. When the EAST ▼ is pressed, up to +36V appears at the M1 relative to M2.

㉓ M2
Combined with ㉒, this output controls the motor direction and dynamic braking. When the WEST ▲ is pressed, up to +36V appears at the M2 relative to M1.
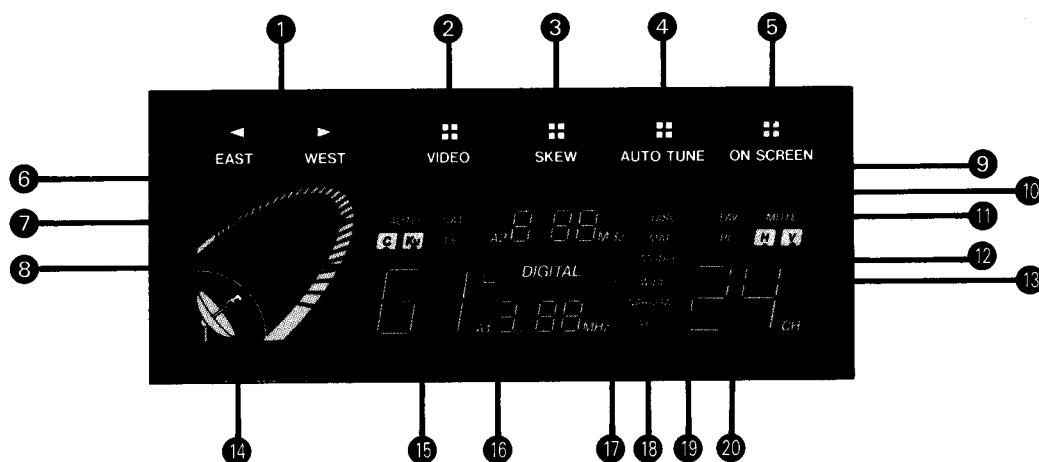
㉔ LINE CORD
120V AC, 60Hz (nominal) input.

㉕ AC OUTLET
Provides 120V AC (250W MAX) as long as the line cord is plugged into an active wall outlet.

FRONT PANEL DISPLAY

❶ ANTENNA MOVEMENT INDICATOR
Indicates "EAST" or "WEST" when the actuator is moving the antenna.

❷ VIDEO TUNE INDICATOR
Indicates the CHANNEL FINE function or Ku-BAND CHANNEL CALIBRATION function of the SENIOR FUNCTIONS has been selected.

❸ SKEW INDICATOR
Indicates the ADJUST SKEW function of the SENIOR FUNCTIONS has been selected.

❹ AUTO TUNE INDICATOR
Indicates the AUTO TUNE function of the SENIOR FUNCTIONS has been selected.

❺ ON SCREEN (ON SCREEN DISPLAY) INDICATOR
Indicates the basic on screen display is on.

❻ SAT/TV INDICATOR
Indicates "SAT" when the satellite signal is selected to the RF OUTPUT and indicates "TV" when the TV signal is selected.

❼ AUTO MODE INDICATOR
Indicates the RECEIVER MODE SWITCH on the rear panel is set to the AUTO MODE.

❽ C/Ku INDICATOR
Indicates the satellite band being received.

❾ AUDIO MODE INDICATOR
Indicates the selected audio mode, MONO for monaural or DISC for discrete stereo or MAT for matrix stereo.

❿ FAVORITE INDICATOR
Indicates a favorite program has been selected.

⓫ AUDIO MUTE INDICATOR
Indicates the audio is muted.

⓬ H/V INDICATOR
Indicates the channel polarity. Displays H for horizontal, V for vertical polarity.

⓭ PL INDICATOR
Indicates PARENTAL LOCK is on.

⓮ ACTIVE INDICATOR
Indicates the receiver power is on and will flash during antenna movement.

⓯ SATELLITE NAME DISPLAY
Displays the satellite designation.

⓰ DIGITAL INDICATOR
Indicates VIDEOCIPHER® II audio is being received.

⓱ AUDIO FREQUENCY DISPLAY
Displays the tuned audio frequency A1, A2.

⓲ VC INDICATOR
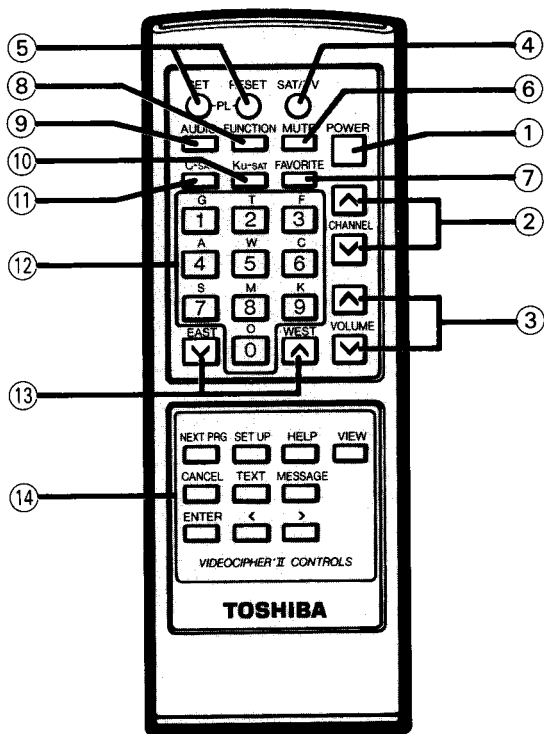Indicates a VIDEOCIPHER® II channel is being received.

⓳ AUDIO BANDWIDTH INDICATOR
Indicates the selected audio bandwidth, either WIDE or NARROW.

⓴ SATELLITE CHANNEL DISPLAY
Displays the satellite channel.

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REMOTE CONTROL

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 volume up or down.

④ SAT/TV BUTTON
This button selects the RF output, either satellite or TV.

⑤ PL SET/RESET BUTTONS
These buttons are used to set or reset parental lock, the antenna lock and the channel lockout.

⑥ MUTE BUTTON
This button mutes the sound. Press again to return to the previous volume level.

⑦ FAVORITE BUTTON
Pressing this button, followed by the ALPHANUMERIC buttons, selects a favorite program channel which can be stored in the receiver's memory.

⑧ FUNCTION BUTTON
Pressing this button, followed by an ALPHANUMERIC button, selects one of the SENIOR FUNCTIONS.

⑨ AUDIO BUTTON
This button is used to tune the audio mode, band width, and audio frequency.

⑩ Ku-SAT BUTTON
Pressing this button, followed by the ALPHANUMERIC buttons or EAST ☑ or WEST ☒, selects Ku-band satellites.

⑪ C-SAT BUTTON
Pressing this button, followed by the ALPHANUMERIC buttons or the EAST ☑ or WEST ☒, selects C-band satellites.

⑫ ALPHANUMERIC BUTTONS
These 10 buttons are used to do the following.

(1) To select a channel and a satellite directly. See page 17.

(2) To select a favorite program which has been stored in the receiver's memory. See page 21.

(3) To use senior functions. See page 28.

(4) To use VideoCipher® II functions, see page 26.

⑬ ANTENNA EAST/WEST BUTTONS
This button is used to move the antenna. When pressed with [Ku-SAT], [C-SAT], this button works as ☑ or ☒.

⑭ VIDEOCIPHER® II CONTROLS
These buttons perform those functions associated with the operation of the VideoCipher® II Descrambler, and are operative only when receiving VideoCipher® signal. See page 26.

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.
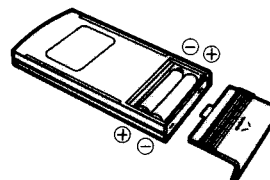
INITIAL SETUP

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. When dual LNBs (one for the H polarity, and one for the V polarity) are connected with an A/B switch, select the H & V mode. When a C-band LNB and a Ku-band LNB are connected with an A/B switch, select the C & Ku mode. When a single LNB is connected, there is no need to select the input mode.
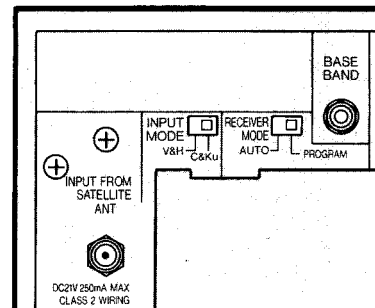
2. POWER ON

Turn on the receiver, the TV, and other equipment (such as an audio system or a video system.) Select the TV channel (3 or 4) in accordance with receiver's VHF output of the TRX-80.

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-80.

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 , the display will be as shown at right.

Select 1 and press ENTER , at this time all data is initialized as factory preset.
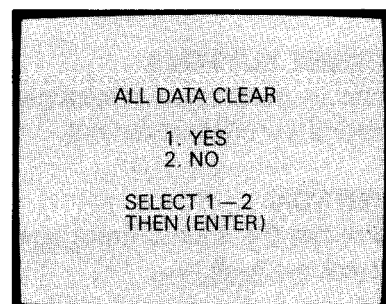
(b) The east limit must be set first. Move the dish to the east until "NO RETURN PULSE" is displayed on screen.
At this time, press WEST ⬆ for 1~2 seconds. This is the electrical east limit.
Press ENTER to store this position.

"EL" will be displayed on the front panel display as shown at right.
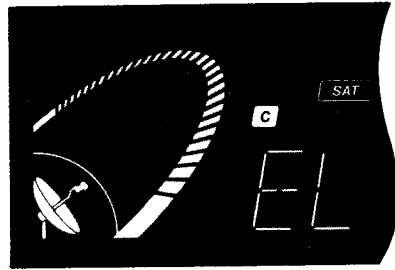
(c) Move the dish to the west until "NO RETURN PULSE" is displayed on screen.
At this time, press EAST ⬇ for 1~2 seconds. This is the electrical west limit.
Press ENTER to store this position.

"WL" will be displayed on the front panel display as shown at right:
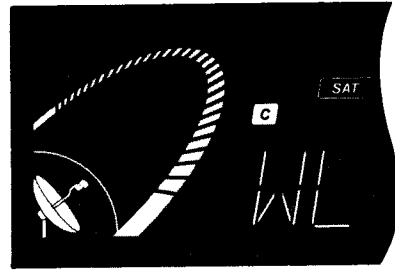
Note: To avoid possible damage to an actuator without a mechanical stop, an additional person should be located near the dish to notify the installer the actuator is reaching its limit.

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

6. SATELLITE POSITION MEMORY

Up to 44 satellites can be programmed (C-band: 22, Ku-band: 22).
The two digit ALPHANUMERIC designates the satellite name.

C-BAND

| NO.	DESIGNATION	SATELLITE	POSITION	NO.	DESIGNATION	SATELLITE	POSITION
1	F5	AURORA	143° W	13	W4	WESTAR 4	99° W
2	F1	SATCOM F1R	139° W	14	T1	TELSTAR 301	96° W
3	G1	GALAXY 1	134° W	15	G3	GALAXY 3	93.5° W
4	F3	SATCOM F3	131° W	16	W3	WESTAR 3	91° W
5	C1	ASC 1	128° W	17	S3	SPACENET 3	87° W
6	T3	TELESTAR 303	125° W	18	T2	TELSTAR 302	85° W
7	W5	WESTAR 5	122.5° W	19	F4	SATCOM F4	83° W
8	S1	SPACENET 1	120° W	20	W2	WESTAR 2	79° W
9	M2	MORELOS 2	116.5° W	21	G2	GALAXY 2	74° W
10	M1	MORELOS 1	113.5° W	22	F2	SATCOM F2R	72° W
11	A2	ANIK D2	110.5° W	23	S2	SPACENET 2	69° W
12	A1	ANIK D1	104.5° W				

Ku-BAND

NO.	DESIGNATION	SATELLITE	POSITION	NO.	DESIGNATION	SATELLITE	POSITION
1	T1	SPACENET 1	120° W	8	S2	SBS 2	97° W
2	C3	ANIK C3	117.5° W	9	S3	SBS 3	95° W
3	M1	MORELOS 1	113.5° W	10	S4	SBS 4	91° W
4	C2	ANIK C2	110° W	11	K1	SATCOM K1	85° W
5	G2	GSTAR 2	105° W	12	K2	SATCOM K2	81° W
6	G1	GSTAR 1	103° W	13	T2	SPACENET 2	69° W
7	S1	SBS 1	99° W				

(a) Press FUNCTION , 6 , 1 , ENTER to enable the CHANNEL SCAN function.
See 1.6 CHANNEL SCAN ENABLE (page 31).

```
┌─────────────────────────┐
│                         │
│     CHANNEL SCAN        │
│                         │
│      → 1. ON            │
│        2. OFF           │
│                         │
│      SELECT 1 — 2       │
│      THEN (ENTER)       │
│                         │
└─────────────────────────┘
```
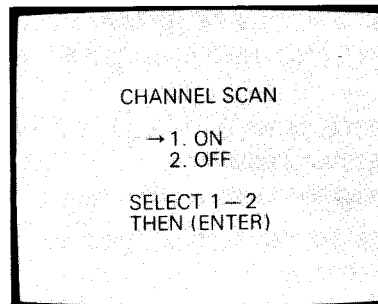
(b) Press FUNCTION , 5 , 1 , ENTER to enable the AUTO TUNING function.

```
┌─────────────────────────┐
│                         │
│      AUTO TUNING        │
│                         │
│      → 1. ON            │
│        2. OFF           │
│                         │
│      SELECT 1 — 2       │
│      THEN (ENTER)       │
│                         │
└─────────────────────────┘
```
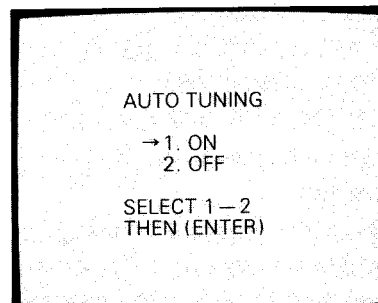
(c) Select C or Ku-band by pressing C-SAT or Ku-SAT and select a satellite name by pressing < or > until the desired satellite name appears, or enter the satellite designation (2-digit) by the ALPHA-NUMERIC buttons.

```
┌─────────────────────────┐
│                         │
│    SATELLITE MEMORY     │
│                         │
│  (C-BAND)       CH: 24  │
│                 POL: V  │
│                         │
│    SELECT SAT NAME      │
│      BY (←, →)          │
│    MOVE DISH TO SAT     │
│    THEN (ENTER)         │
└─────────────────────────┘
```
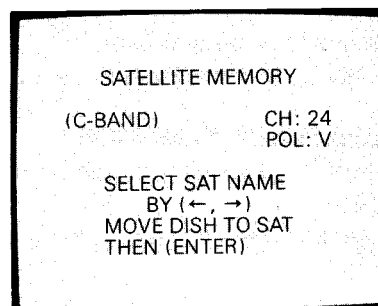
(d) By pressing and holding EAST ☑ or WEST ☒ , move the dish to the selected satellite until a picture is visible. To correctly identify the satellite, please refer to a current programming guide.

Press ENTER and the skew automatically adjusts to the satellite and then the antenna position automatically 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.   │
│                         │
└─────────────────────────┘
```
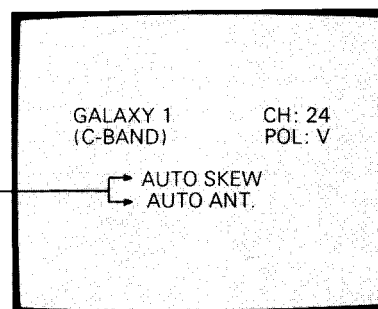
To program additional satellite positions, operate again from (c) to (d).

The INITIAL SETUP is now finished.

```
┌─────────────────────────┐
│                         │
│  GALAXY 1       CH: 24  │
│  (C-BAND)       POL: V  │
│                         │
│                         │
│   SATELLITE ENTERED     │
│                         │
└─────────────────────────┘
```
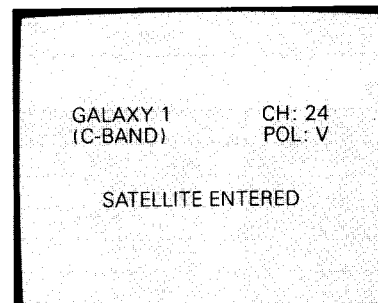
7. CHANNEL FREQUENCY CALIBRATION

● C-BAND

All C-band satellites use the same channel frequency for the same channel number, and all of the channel frequencies are factory programmed. Therefore it is not necessary to calibrate the channel frequencies on C-band.

● Ku-BAND

Ku-band satellite do not use the same frequencies for the same channel number. Therefore it is necessary to calibrate the channel frequencies. Initialy, the channel frequencies are programmed to be divided equally as shown at right. Channel calibration of the Ku-band satellite can be done easily as follows.

(a) Set the RECEIVER MODE switch to the AUTO position. Select the Ku-band satellite to be calibrated.

(b) Set the RECEIVER MODE switch to the PROGRAM position.

(c) By using the channel ▼ or ▲ , or the ALPHA-NUMERIC, input the channel number to be pro-grammed.

(d) Press FUNCTION , 4 and the display will be as shown at right.
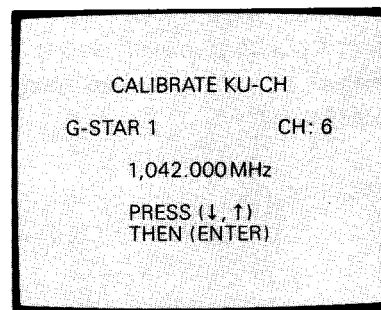
(e) By using EAST ▼ or WEST ▲ , adjust the frequency for the best picture.

(f) Press ENTER to store the channel frequency.

If it is desired to program additional channels, operate again from (c).

Ku-BAND CH FREQUENCY LIST

CH	FREQUENCY (MHz)	CH	FREQUENCY (MHz)
1	967	17	1207
2	982	18	1222
3	997	19	1237
4	1012	20	1252
5	1027	21	1267
6	1042	22	1282
7	1057	23	1297
8	1072	24	1312
9	1087	25	1327
10	1102	26	1342
11	1117	27	1357
12	1132	28	1372
13	1147	29	1387
14	1162	30	1402
15	1177	31	1417
16	1192	32	1432

```
        CALIBRATE KU-CH

   G-STAR 1              CH: 6

         1,042.000 MHz

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

SET UP

BASIC OPERATION

The following is the basic operation of this receiver as-suming that the INSTALLATION section has been pro-perly completed.

1. POWER ON
Press [POWER]. Check the front panel display 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 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 sat-ellite 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 front panel display and
on screen.
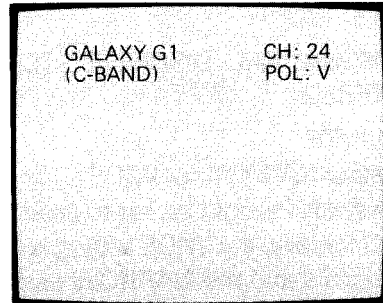
After the dish reaches the selected satellite posi-
tion, (in this case, G1), the display will change as
shown at right.

```
GALAXY 1
(C-BAND)
```

```
GALAXY G1        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
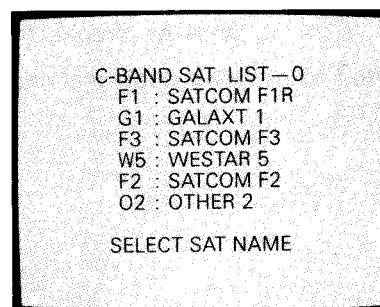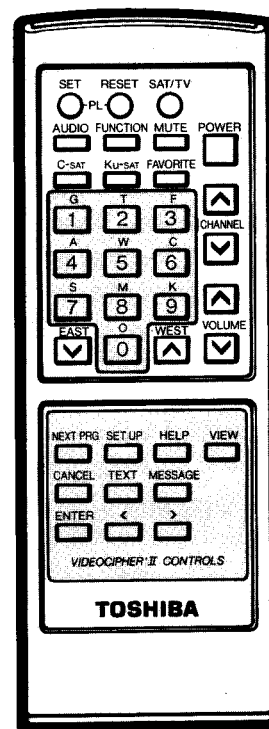   ALPHANUMERIC buttons.
   ● Up, down access
     Press CHANNEL [∧] or [∨] until the desired
     channel appears.

   When a channel is selected, the number will be dis-
   played as shown at right.

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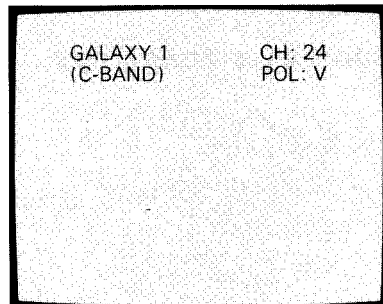
3. AUDIO TUNING

The audio must be tuned to the audio subcarriers by channel. The audio can easily be tuned and stored.

(a) Press AUDIO . The present AUDIO data will be displayed on screen.

(b) Select the item number (1-4).

By pressing or holding EAST ▼ or WEST ▲, tune in the audio program.
Press ENTER to store the tuned AUDIO data.
AUDIO TUNING selections are as follows.

● MODE
Select MONAURAL, DISCRETE STEREO or MATRIX STEREO.

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

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

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

NOTE:
Initially, the audio is set as shown at right.

```
        AUDIO TUNING
1. MODE : DISCRETE
                STEREO
2. BAND : WIDE
3. A1    : 5.76MHz
4. A2    : 5.92MHz

SELECT 1-4, (↑, ↓)
THEN (ENTER)
```
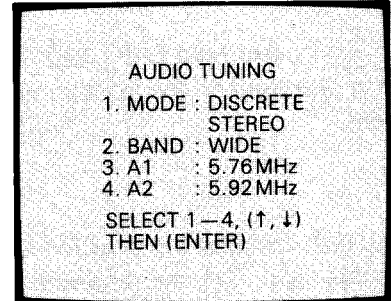
NOTE: When in the MONO mode, A2 is not used.

```
        AUDIO TUNING
1. MODE : MONO

2. BAND : WIDE
3. A1    : 6.80MHz

SELECT 1-3, (↑, ↓)
THEN (ENTER)
```
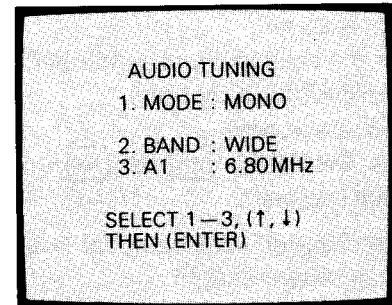
4. VOLUME CONTROLS AND MUTING

Press VOLUME ☑ or ☒ to adjust the audio to a comfortable listening level.

AUDIO VOLUME : 31
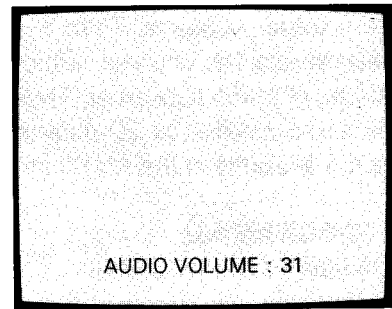
The volume reference level, 0 — 31 will change by pressing VOLUME ☑ or ☒

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

AUDIO MUTE

Press MUTE again to return to the previous volume level.

5. MOVING THE DISH

To manually move the dish, use EAST ☑ or WEST ☒

Note: If the wrong key was pressed or the operation of the TRX-80 was unknown, press VIEW VIEW will clear the screen of an 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.

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, or audio subcarrier. These programs may be on the same satellite or 20 different satellites. These features are available in the AUTO mode.

1. FAVORITE FROGRAMING
(1) STORING A FAVORITE PROGRAM
    (a) Confirm that the receiver is in the AUTO mode by checking the front panel display.
    (b) Receive the satellite and channel, and store the desired audio.
    (c) Press FUNCTION , 5 and the display will be as shown at right.

```
        FAVORITE PROGRAM

          1. ENTER
          2. CANCEL

          SELECT 1 — 2
          THEN (ENTER)
```
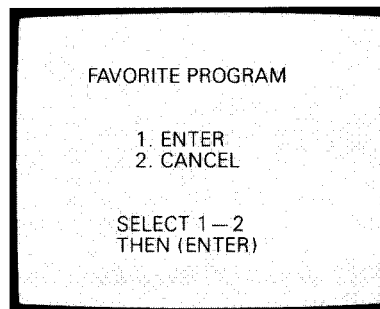
Select 1 and ENTER . The receiving satellite channel data will be displayed as shown at right.

```
        FAVORITE PROGRAM
        OLD PROGRAM :

      → NEW PROGRAM
        SATCOM F3              (C)
        CH : 11
             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
      → NEW PROGRAM
        SATCOM F3            (C)
        CH : 11
             SELECT 0 — 19
             THEN (ENTER)
```
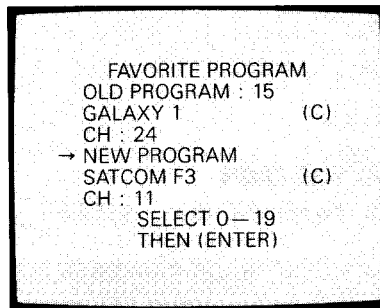
    (d) If it is undecided which program number to use, press FAVORITE .
The FAVORITE PROGRAM list will be displayed as shown at right.
Press < or > to see the next or previous favorite program list.

Press VIEW to return.

```
        FAV. PRGM LIST — 0
      NO     SAT    CH    BAND
      0:     F3     11     (C)
      1:     G1     24     (C)
      2:     F3     18     (C)
      3:     S2     1      (C)
      4:      —      —      —

          PRESS (VIEW)
```
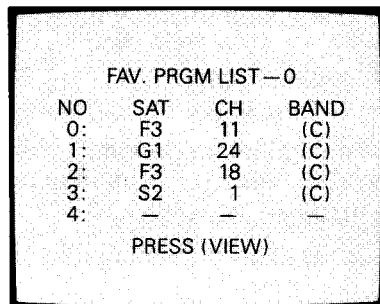
(2) TO CANCEL A FAVORITE PROGRAM

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

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

```
┌─────────────────────────┐
│                         │
│   FAVORITE PROGRAM      │
│                         │
│     1. ENTER            │
│     2. CANCEL           │
│                         │
│     SELECT 1 — 2        │
│     THEN (ENTER)        │
│                         │
└─────────────────────────┘
```
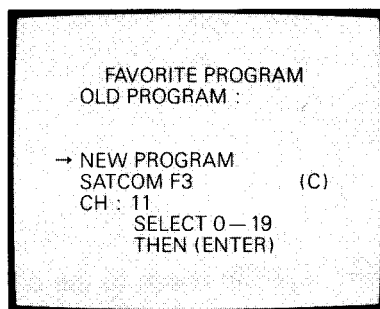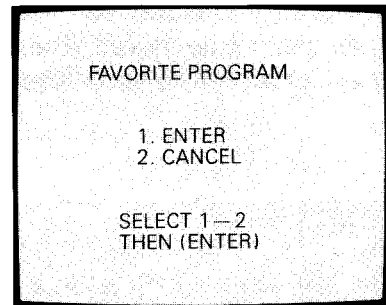
Select [2] and [ENTER] , the display will be as shown at right.

Press [<] or [>] 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    BAND    │
│   0:    F3     11     (C)    │
│   1:    G1     24     (C)    │
│   2:    F3     18     (C)    │
│   3:    S2      1     (C)    │
│   4:    G1     13     (C)    │
│        SELECT 0-19          │
│        THEN (CANCEL)        │
└─────────────────────────────┘
```
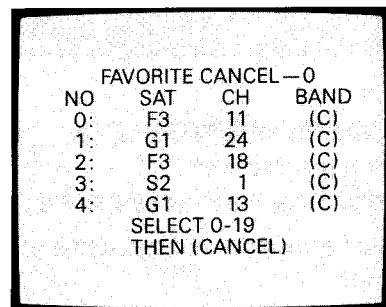
2. OPERATION OF A FAVORITE PROGRAM

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.

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

```
┌─────────────────────────────┐
│       FAV. PRGM LIST — 0    │
│   NO    SAT    CH    BAND    │
│   0:    F3     11     (C)    │
│   1:    G1     24     (C)    │
│   2:    F3     18     (C)    │
│   3:    S2      1     (C)    │
│   4:    --     —      —      │
│                             │
│       SELECT 0 — 19         │
└─────────────────────────────┘
```
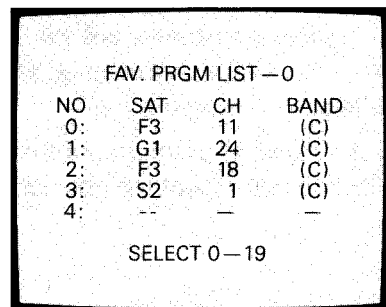
PARENTAL LOCK

There are two features in parental lock. They are antenna lock and channel lockout. The REMOTE CONTROL UNIT is the key of the parental lock. When parental lock feature is set, the PL'd channels can not be received and the antenna can not be moved. The antenna lock and the channel lockout can be set or reset at the same time.

NOTE:
This function can be used only when the receiver is in the AUTO mode. The receiver can not be switched to the PROGRAM mode when the parental lock is on.

(1) PROGRAMMING PARENTAL LOCK
● To set the parental lock.
  (a) Confirm that the receiver is in the AUTO mode.
  (b) Select a satellite that has a channel to be locked out.
  (c) Select the desired channel to be locked out.
  (d) Press PL SET and the parental lock is set for that channel.
  The display on screen will be as shown at right. "PL" will be displayed on the front panel display.
  (e) If it is desired to program another channel to be locked out, repeat the operation from (c).

PARENTAL LOCK
SET

The display will disappear after 2 ~ 3 seconds.

● To reset parental lock.
  (a) Select the channel that is locked out.
  (b) Press PL RESET and the channel lockout is reset on the channel. The display on screen will be as shown at right.
  (c) If it is desired to reset the antenna lock, repeat the operation from (a) until all of the PL'd channels are reset.
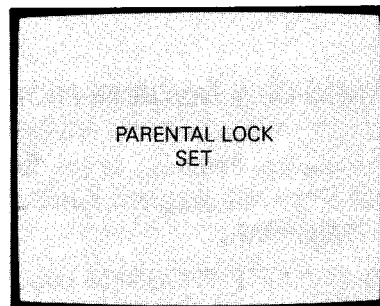
PARENTAL LOCK
RESET

The display will disappear after 2 ~ 3 seconds.
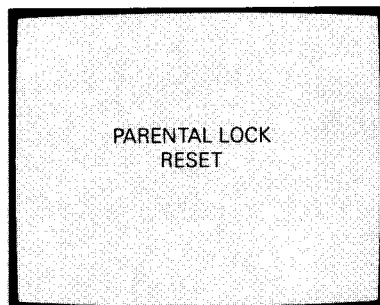
● To reset parental lock with the parental lock list.

(a) Press PL [SET] or PL [RESET] twice, and the PARENTAL LOCK LIST will be displayed on screen as shown at right.
An * is displayed as indicated at right of the PL'd channel number.

(b) By pressing the PL [RESET] repeatedly, an * will disappear and the channel lock out will reset in the order of the channel numbers.

(2) Parental Lock operation

(a) When the parental lock is set and SATELLITE [▼] or SATELLITE [▲] on the front panel is pressed, the display will be as shown at right.

(b) When the PL'd channel is selected from the front panel, the display will be as shown at right.

PARENTAL LOCK LIST

(a) Press PL [SET] or PL [RESET] and the parental lock list will be displayed on the screen as shown at right. An * is displayed as indicated at the right of the PL'd channel number.

(b) Press [VIEW].

```
      PL CHANNEL LIST
   1     2     3     4     5
   6     7     8     9    10
  11    12    13    14 → 15*
  16    17    18    19    20
  21*   22    23    24   (25
  26    27    28    29    30
  31    32)
         PRESS (VIEW)
```

```


      PARENTAL LOCK


```

```
      PL CHANNEL LIST
   1     2     3     4     5
   6     7     8     9    10
  11    12    13    14 → 15*
  16    17    18    19    20
  21*   22    23    24   (25
  26    27    28    29    30
  31    32)
         PRESS (VIEW)
```

SATELLITE PROGRAMMING

(1) STORING AN ADDITIONAL SATELLITE

By using the SATELLITE POSITION MEMORY section, additional satellite positions can be stored.

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

(b) Repeat the section (a) — (d) on page 15.

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

(2) CANCELING A SATELLITE

(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.

Ex. When AURORA F5 is canceled, the display will be shown at right.

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

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




        SATELLITE CANCELED
```
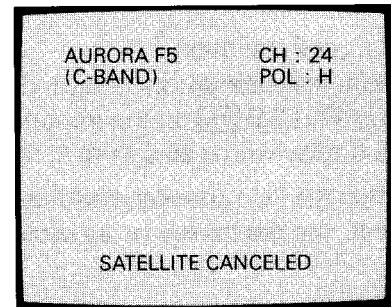
VIDEOCIPHER® II OPERATION

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 channel. VideoCipher® II also has some additional features. The following features are only available on VideoCipher® II channels.

CONTROL BUTTONS

1. VIEW button
Press this button to view satellite name, band, channel number and polarity. When receiving a VideoCipher® II channel, it will also display the program title, running time and program rating. This button can be used to clear any on screen display after it 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.
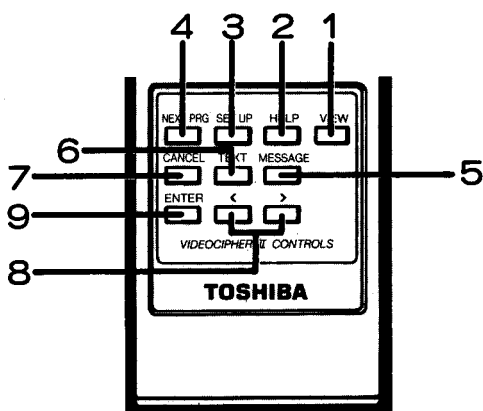
4. NEXT PROGRAM button
Press this button to see information about the next program.

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 Video-Cipher® II.

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

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 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 it in before the system accept a new one.
  * If it is not desired to use a password, press [ENTER] twice.

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 screen to inform you that a message has been stored.

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

To remove the Message Prompt.

(a) Press [SETUP], [2].

(b) Press [2] to turn 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 the 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.
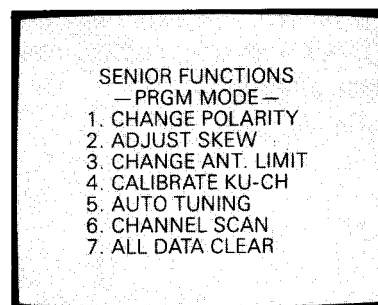
SENIOR FUNCTIONS

This receiver has many advanced functions called senior functions. They are listed below.
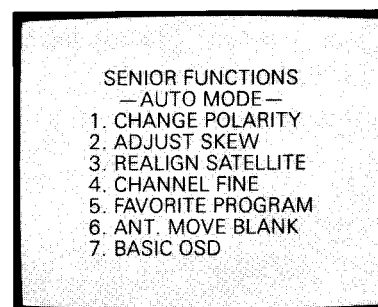
SENIOR FUNCTION LIST

PROGRAM MODE	AUTO MODE
1. CHANGE POLARITY 2. ADJUST SKEW 3. CHANGE ANTENNA LIMIT 4. KU-BAND CHANNEL CALIBRATION 5. AUTO TUNING ON/OFF 6. CHANNEL SCAN ON/OFF 7. ALL DATA CLEAR	1. CHANGE POLARITY 2. ADJUST SKEW 3. REALIGN SATELLITE MEMORY 4. CHANNEL FINE TUNING 5. FAVORITE PROGRAM ENTER/CANCEL 6. ANTENNA MOVE BLANK ON/OFF 7. BASIC ON SCREEN DISPLAY ON/OFF

BASIC OPERATION OF THE SENIOR FUNCTIONS

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

```
        SENIOR FUNCTIONS
          —PRGM MODE—
       1. CHANGE POLARITY
       2. ADJUST SKEW
       3. CHANGE ANT. LIMIT
       4. CALIBRATE KU-CH
       5. AUTO TUNING
       6. CHANNEL SCAN
       7. ALL DATA CLEAR
```

IN THE PROGRAM mode

```
        SENIOR FUNCTIONS
          —AUTO MODE—
       1. CHANGE POLARITY
       2. ADJUST SKEW
       3. REALIGN SATELLITE
       4. CHANNEL FINE
       5. FAVORITE PROGRAM
       6. ANT. MOVE BLANK
       7. BASIC OSD
```
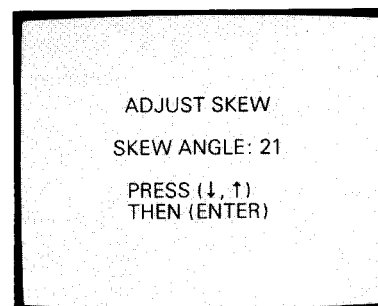
IN THE AUTO mode

(b) Select the desired senior function number.

Ex. When [2] is pressed in the PROGRAM mode, the display will be as shown at right.

(c) Follow the instructions on screen.

```
        ADJUST SKEW

        SKEW ANGLE: 21

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

1. PROGRAM MODE

1.1 CHANGE POLARITY

Polarity settings are factory programmed and are selected when recalling a satellite and a channel. Therefore, normally it is not necessary to change the polarity. When the factory programmed polarity does not correspond to the channel polarity, it can be changed and stored easily as follows. The CHANGE POLARITY function is available both in the PROGRAM mode and the AUTO mode. In the AUTO mode, the polarity can be changed tempolarily and the factory programmed polarity will return when changing satellites. In the PROGRAM mode, the polarity can be changed and stored as follows.

● C-band

Press [FUNCTION] , [1] , and 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 for every channel.

Press [ENTER] to store.
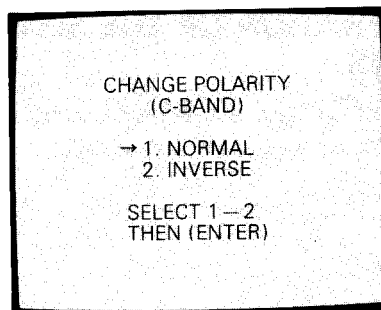
```
CHANGE POLARITY
   (C-BAND)

→ 1. NORMAL
  2. INVERSE

SELECT 1 — 2
THEN (ENTER)
```
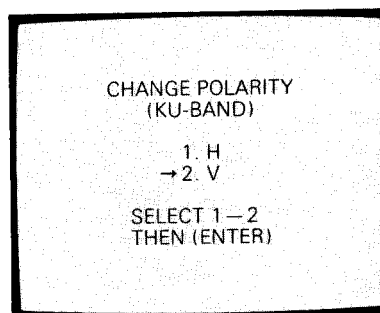
● Ku-band

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

Select [1] for H, select [2] for V, the selected polarity is set on the receiving channel.

Press [ENTER] to store.

```
CHANGE POLARITY
   (KU-BAND)

  1. H
→ 2. V

SELECT 1 — 2
THEN (ENTER)
```

1.2 ADJUST SKEW

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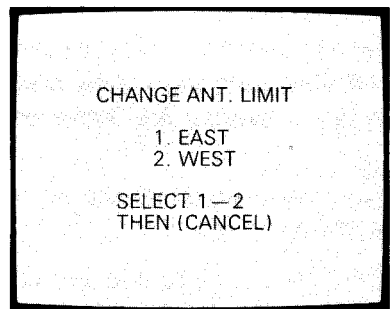But if desired, the skew can be adjusted manually as
follows.

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

(b) Adjust the skew by pressing EAST [∨] or WEST [∧]
to get the best picture.

(c) Press [ENTER] to store.

```
ADJUST SKEW

SKEW ANGLE : 21

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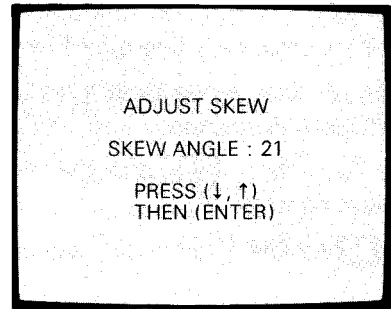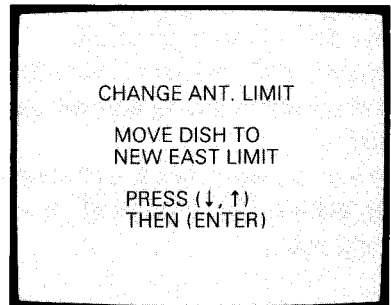
1.3 CHANGE ANTENNA LIMIT

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] , [3] , and the display will be as
shown at right.

(c) Select [1] for the EAST limit, [2] for the WEST limit
and press [CANCEL] to cancel 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)
```

1.4 CALIBRATE Ku-CHANNEL

This function is used to assign any channel frequency to
any channel number on the Ku-band. Ku-band satellite
channels can be programmed as follows.
Select the Ku-band satellite to be calibrated. See CHAN-
NEL FREQUENCY CALIBRATION section (page 16).

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

(b) By using the channel [∨] or [∧] , or the ALPHA-
NUMERIC, input the channel number to be pro-
grammed.

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

(d) By using the EAST [∨] or WEST [∧] , adjust the
frequency for the best picture.

(e) Press [ENTER] to store the channel frequency.
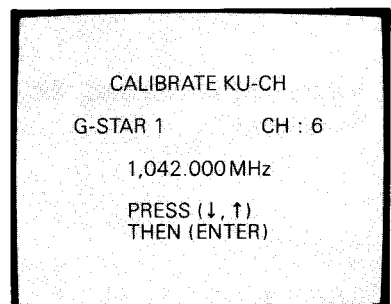
If it is desired to program additional channels, operate
again from (c).
When completed, set the receiver mode switch to the
AUTO position.

```
CALIBRATE KU-CH

G-STAR 1          CH : 6

1,042.000 MHz

PRESS (↓, ↑)
THEN (ENTER)
```

1.5 AUTO TUNING

When the auto tuning is on, the antenna position and the skew is automatically fine-tuned for the best picture.
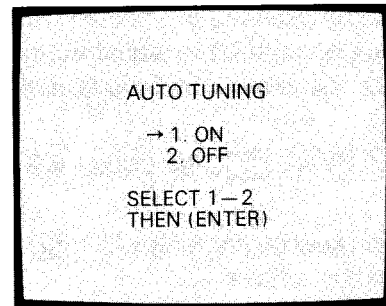
(a) Set the receiver mode switch on the rear panel to the PROGRAM position.

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

(c) Press [1] for ON, [2] for OFF and press [ENTER].

```
┌─────────────────────────┐
│                         │
│       AUTO TUNING       │
│                         │
│       → 1. ON           │
│         2. OFF          │
│                         │
│       SELECT 1 — 2      │
│       THEN (ENTER)      │
│                         │
└─────────────────────────┘
```

1.6 CHANNEL SCAN ENABLE
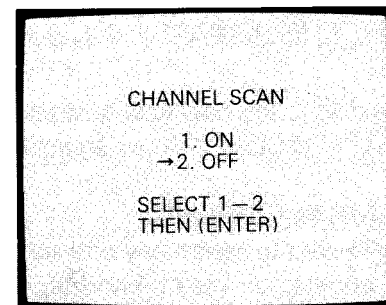
The channel scan feature allows the receiver to search rapidly for active chanels.

This function is useful in finding satellite positions. The receiver will start scanning rapidly and stop as the antenna reaches a satellite and locks on the first active channel.

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

(b) Press [FUNCTION] , [6] , 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)      │
│                         │
└─────────────────────────┘
```
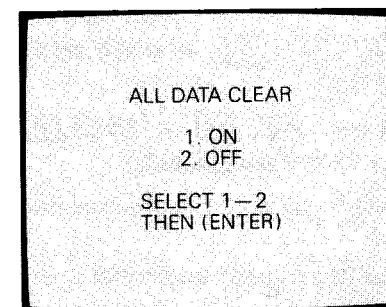
1.7 ALL DATA CLEAR

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] , 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. ON           │
│         2. OFF          │
│                         │
│       SELECT 1 — 2      │
│       THEN (ENTER)      │
│                         │
└─────────────────────────┘
```
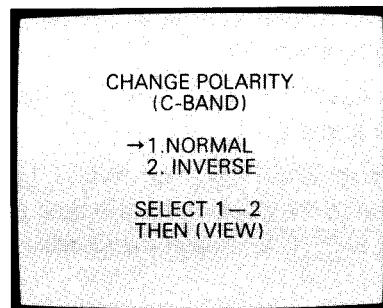
2. AUTO MODE

2.1 CHANGE POLARITY

The CHANGE POLARITY function is available both in the PROGRAM mode and the AUTO mode. In the AUTO mode, the polarity can be changed temporarily and the factory programmed polarity will return when changing satellites. See 29 page in the detail of the CHANGE POLARITY function. The CHANGE POLARITY function in the AUTO mode is as follows;

● C-band

Press [FUNCTION] , [1] , and 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 every channel.
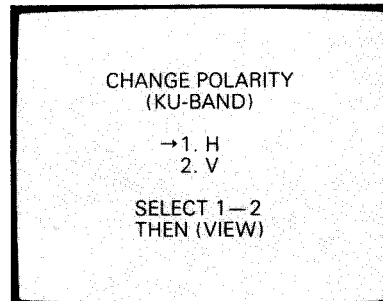
Press [VIEW].

```
CHANGE POLARITY
   (C-BAND)

 →1.NORMAL
   2. INVERSE

 SELECT 1—2
 THEN (VIEW)
```

● Ku-band

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

Select [1] for H, select [2] for V, the selected polarity is set on the receiving channel.

Press [VIEW].

```
CHANGE POLARITY
   (KU-BAND)

 →1. H
   2. V

 SELECT 1—2
 THEN (VIEW)
```
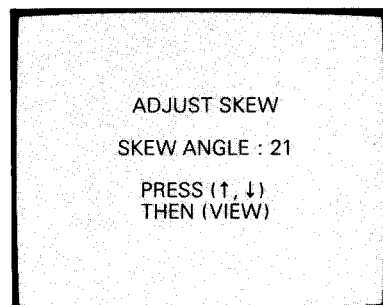
2.2 ADJUST SKEW

In the AUTO mode, the antenna skew can be adjusted temporarily and the previous skew angle will return when changing satellites.

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

(b) Adjust the skew by pressing EAST [▽] or WEST [△] to get the best picture.

Press [VIEW].

```
ADJUST SKEW

SKEW ANGLE : 21

PRESS (↑, ↓)
THEN (VIEW)
```

2.3 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 using 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⎤ , ⎡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)
```
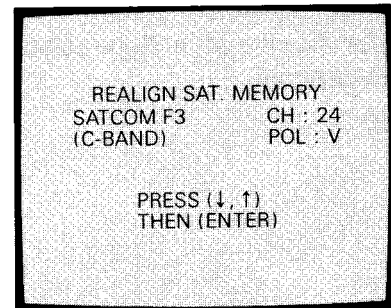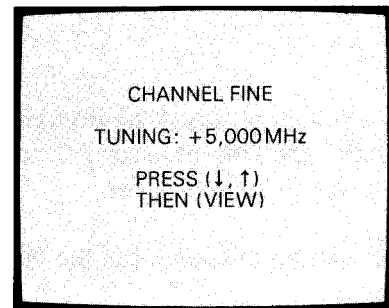
2.4 CHANNEL FINE

This function is used to temporarily tune the channel frequency.

(a) Select the channel to be fine tuned.
(b) Press [FUNCTION], [4].

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

Press [VIEW] to return to the normal condition.

```
CHANNEL FINE

TUNING: +5,000MHz

PRESS (↓, ↑)
THEN (VIEW)
```

## 2.5 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 19) to operate.

2.6 ANTENNA MOVE BLANK

This function makes the TV screen blackout when the antenna is moving between satellites.
Press [FUNCTION], [6], 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)
```
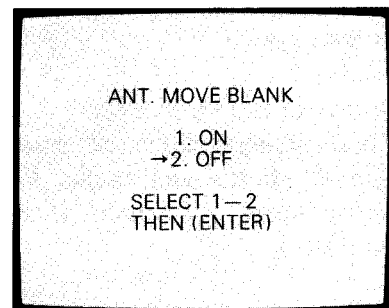
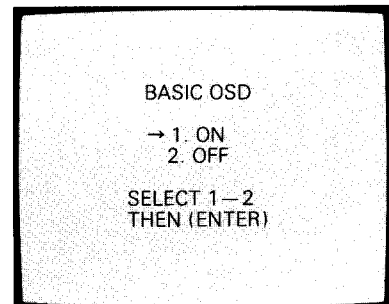## 2.7 BASIC OSD ON/OFF

This function is used to turn the basic on screen display (channel, band and satellite name etc.) ON or OFF.
Press [FUNCTION], [7], 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)
```

TROUBLESHOOTING

The TRX-80 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 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 SATELLITES MEMORY in the Senior Functions.

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

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 (50 Hz 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
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	120 VAC, 60 Hz
Power Consumption	185 watts
Power Supply to LNB	15 to 21.2 VDC, 250 mA max.
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	Max. 6.0V
Sense (Reed Switch)	Form C closure
(Hall)	+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 Consumer Products, Inc. ("TACP") 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
TACP 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 TACP 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 TACP 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 TACP 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 TACP 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 autorization of TACP 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-80, unless you have received prior authorization from the TACP Service Center.
(7) TACP 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 TACP Service Center.

Toshiba America Consumer Products, Inc.
Service Center
1010 Johnson Drive
Buffalo Grove, IL 60089-6900
Phone Number:
(312) 541-9400

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