



CHAPARRAL

M100c plus

Owner's Installation & Operation Manual

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Basic Operation

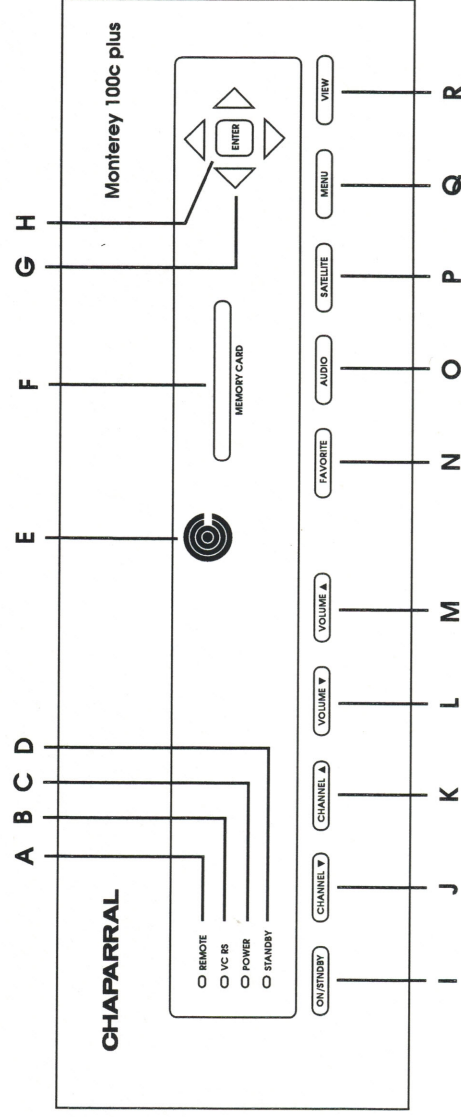
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On this page, and on the next two pages, you will find detailed drawings of the front and back panels of your M100c plus. The buttons, display areas, and connections have been labeled for easy identification. Also included is a brief description of the function of each item.

A REMOTE

The remote indicator light flashes when the Remote Control sends a signal to the receiver or a button on the front panel is pushed.

B VC RS

Lights when a VideoCipher signal is being received by the optional VC module.

C POWER

LED display indicating that the receiver is plugged in.

D STANDBY

Indicates that the receiver is not currently being used and is in standby mode.

E REMOTE SENSOR

The remote sensor receives signals from the Remote Control.

F MEMORY CARD SLOT

The Memory Card is inserted into this slot to download or copy the database.

G ARROWS

These four arrows allow you to move the cursor through the on-screen menus.

H ENTER

Activates a menu selection.

I ON/STDBY

Toggles the receiver between on and standby modes.

J CHANNEL ▼

Selects the next lower channel on the active satellite.

K CHANNEL ▲

Selects the next higher channel on the active satellite.

L VOLUME ▼

Adjusts the volume level down.

M VOLUME ▲

Adjusts the volume level up.

N FAVORITE

Accesses the list of favorite channels by satellite or group.

O AUDIO

Accesses the list of audio favorites for the active satellite. Repeated pressing cycles through the audio group favorites.

P SATELLITE

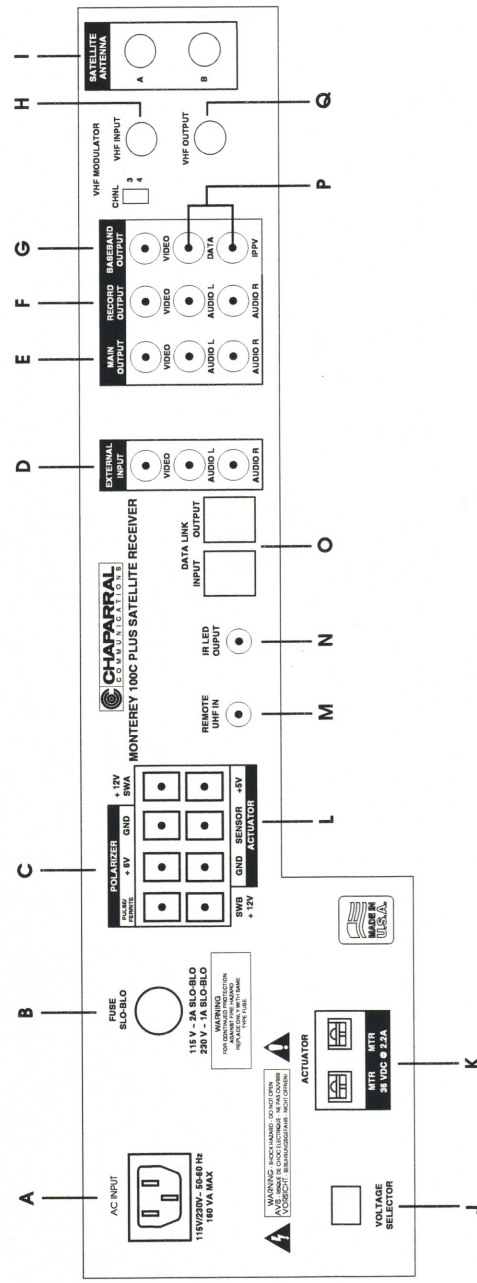
Accesses the list of programmed satellites.

Q MENU

Access the main menu list. Repeated pressing cycles through menus.

R VIEW

Clears the current menu from the screen. Repeated pressing clears all menus.



A AC Input

Connects the receiver to a power source.

B Fuse Holder

A fuse holder that holds a 5 mm x 20 mm fuse.

The receiver is shipped with a 2 A fuse installed for 100 or 120 VAC operation. If you change the voltage selector to 220 or 240 VAC, the fuse must be replaced with a 1 A fuse.

C Polarizer Connector Block

The first three connectors provide servo motor or ferrite feed control pulses, +6 V power, and ground to the polarizer. The last connector (Switch A) is a control terminal that switches between ground and +12 V to control external A/B and accessory switches.

D External Input

Accepts video and left and right audio channel signals from external sources.

E Main Output

Supplies video and audio signals to a monitor or A/V switcher.

F Record Output

Supplies video and audio signals to recording devices at a fixed level. Signals are not affected by volume control, audio effects, or displayed menus.

G Baseband Output

Supplies a composite video output.

H VHF Modulator - VHF Input

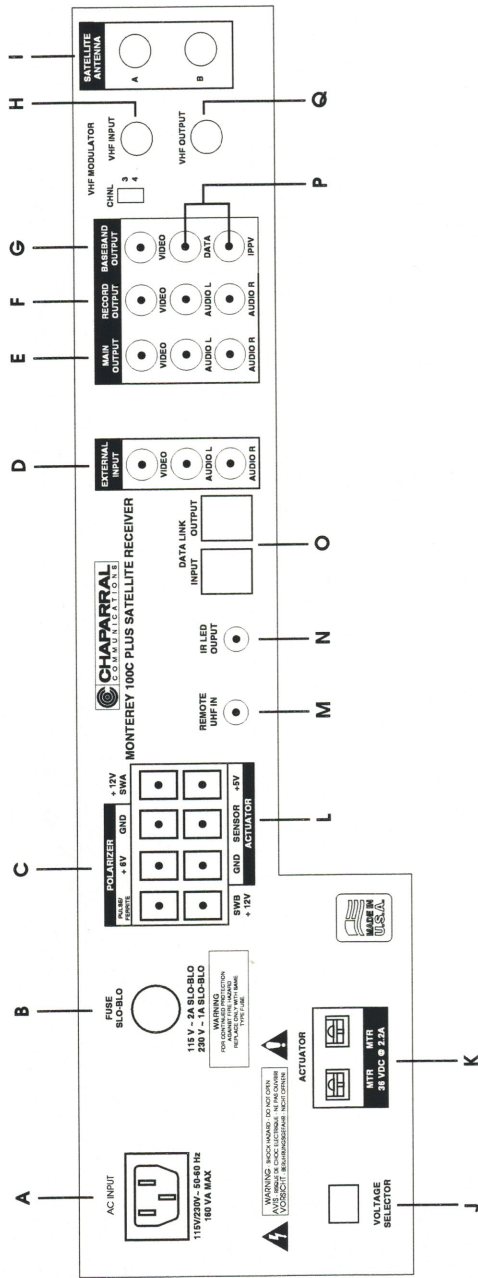
Used for connections to external VHF/UHF antenna.

I Satellite Antenna Input A/B

Receives the 950-2050 MHz signal from the LNB.

J Voltage Selector

Switches between 115 VAC (90-132) operation and 230 VAC (180-264) operation.



K Actuator Motor Connectors

A two-screw terminal strip that provides a connection point for the actuator motor.

L Actuator Connection Block

The first connector (Switch B) is a control terminal that switches between ground and +12 V to control external A/B and accessory switches. The next three terminals are ground, actuator sensor input, an +5V.

M Remote UHF In

Used to receive signals from an accessory UHF antenna module.

N IR LED Output

This output drives and IR Emitter Module to control an external VCR.

Note: Chaparral's VCR IR Emitter will function only in conjunction with most Panasonic video cassette recorders.

O DataLink Input & Output

Two RJ11 telephone jacks, each with serial data in, serial data out, and ground connections used for communication with any externals that are RS-232 compatible.

P DATA/IPPV

Used for connections of VideoCipher descramber.

Q VHF Modulator - VHF Output

Connects M100c plus to a TV receiver.

The M100c plus Remote Control's basic function is much the same as that of any other remote — it allows you to take advantage of all of your receiver's special functions without having to use the buttons on the front panel.

To the right you will find a detailed drawing of your new Remote Control. As you can see, the buttons have been numbered for easy identification. These two pages provide you with information about the primary function of each of these buttons.

HINT: This Remote Control diagram has been reproduced on a special foldout section of the inside front cover. As you work your way through this manual, you may wish to fold out the diagram so you will have it handy for reference.

Aiming the Remote Control

Always aim the Remote Control at the receiver's front panel. The remote indicator on the display panel lights up when the M100c plus is receiving signals.

1 Power

Turns the M100c plus receiver on and off. A power button is also located on the front panel of the receiver.

2 Volume ▲ ▼

Adjusts the volume level up or down.

3 Next

Displays information about the next scheduled program. This feature is used for VideoCipher channels only.

4 Time

Displays the current time, channel, and satellite.

5 Channel ▲ ▼

Changes channels on the current satellite.

6 FAVORITE

Pressing this button once accesses the Favorites list for the active satellite. Repeated pressing cycles through the other seven Favorite categories.

7 PIP

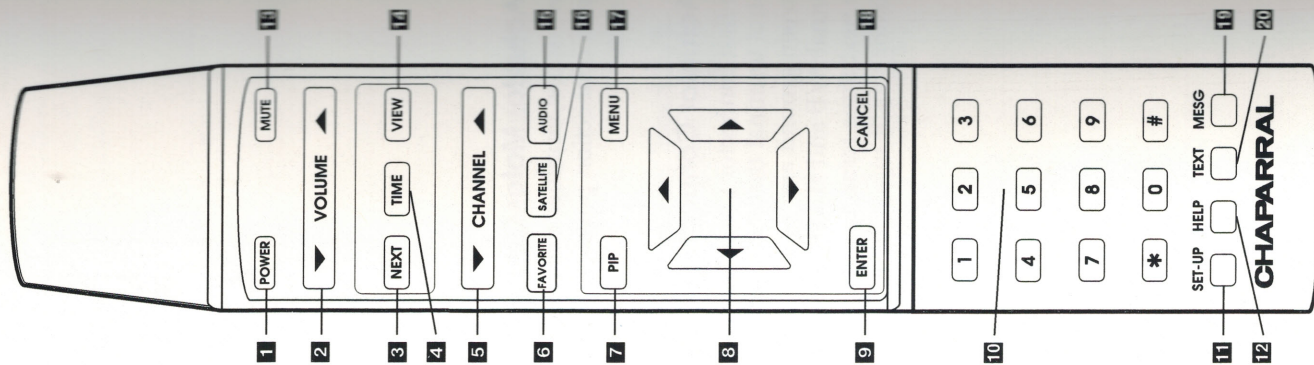
Returns the receiver to the previous channel you were watching.

8 Control Pad ◀ ▶ ▲ ▼

These four buttons allow you to move the cursor around in various menus.

9 Enter

Activates the current menu choice.



10 Numeric Keypad

Allows you to enter a variety of information directly into the menu lines.

11 Set-Up

For use with VideoCipher. This key accesses the module set-up menu.

12 Help

Displays instructions for using the VideoCipher menus.

13 Mute

Mutes the audio. Pressing this button again will turn the audio back on.

14 View

Erases any on-screen displays and returns the system to normal viewing.

15 Audio

Displays the list of audio favorites for the current channel.

16 Satellite

Accesses the list of satellites currently programmed in your receiver.

17 Menu

Accesses the Main Menu screen. Pressing this button repeatedly cycles through menus 1-5.

18 Clear

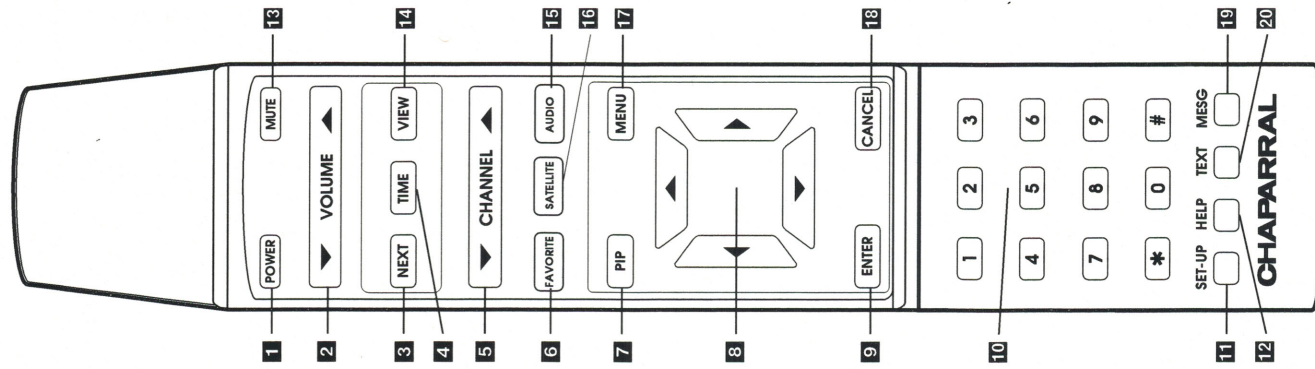
Cancels most menu line entries. Also clears menus from the screen one level at a time.

19 Mesg

Used only on VideoCipher channels to display messages addressed to your descrambler.

20 Text

Used only on VideoCipher channels to display news bulletins, promotions, and special notices from the program supplier.



Chapter 1 — Getting to Know Your M100c plus Satellite Receiver

Illustrations

The optional Memory Card is used to install satellite programming information into your M100c plus' internal computer. It contains information on programmed satellite locations, and video and audio channel names and numbers. You can use the card if you are updating the information in your receiver, or if your receiver's memory has been undesirably altered or accidentally erased. It works much in the same way as a floppy disk for your computer works.

Hint: Once you have programmed your receiver just the way you want, including lists of favorite channels, you can copy the information onto your Memory Card. That way, if your programming is accidentally erased or changed, you can simply copy the information from your Memory Card to your receiver.

Note: Remember that loading from the Memory Card to your receiver will erase, or copy over, all the data currently in your receiver. In other words, you will lose any programming that you have done to your receiver such as current satellite information, favorite lists, and channel names and numbers, and replace it with the information on the Memory Card. Loading from your receiver to the Memory Card will copy over all the data in your Memory Card.

A Label

Insert Memory Card label side up.

B Connector Pins

Insert this end into the Memory Card slot on the receiver until firmly in place. Do not attempt to push the card all the way into the slot. When properly inserted, the Memory Card should protrude about two inches from the receiver.

C Write-Protect Tab

Slide the tab toward the outside of the card to protect the database from being overwritten. To remove write-protection, slide tab toward center of card.

D Battery Holder

CAUTION! Removing the battery holder erases the database from the Memory Card! To protect against this loss, either download the database to the receiver before removing the battery holder or remove the battery holder while the Memory Card is fully inserted into its slot and the receiver is ON.

If the battery is low or bad, the receiver will display a BATTERY LOW or BATTERY BAD warning message in the INSTALL A menu. Replace with the same type battery: CR2325, 3V lithium, coin-type.

Slide the lock tab toward the edge of the card to unlock the battery holder. To remove the battery holder, insert your fingernail into the thin slot on the bottom side of the card and pull out. The replacement battery fits only one way.

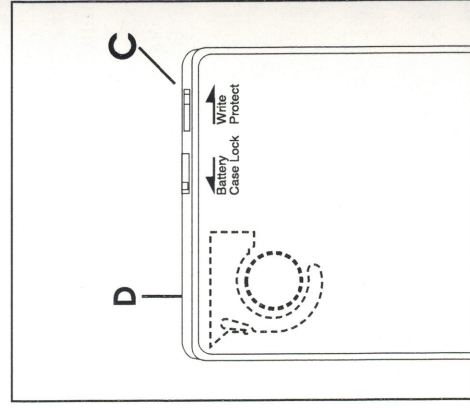
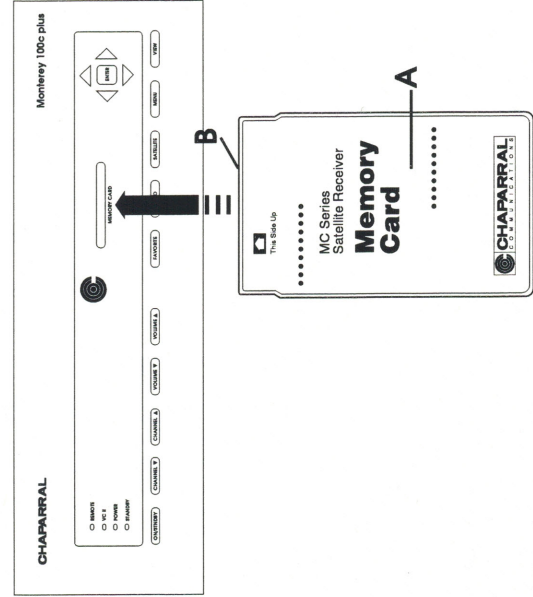
Remember to slide the lock tab toward the center after replacing the battery.

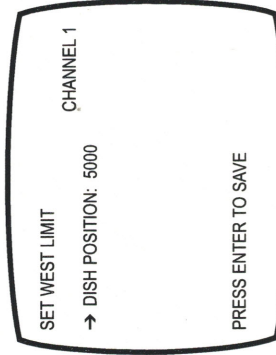
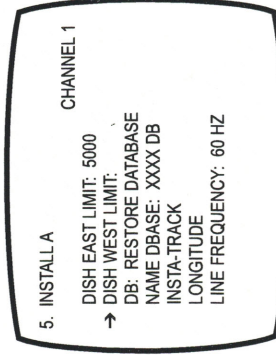
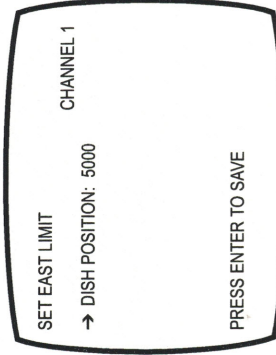
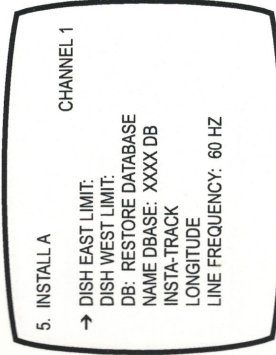


Note:

Various databases are available from your equipment supplier. Request the database that matches your system configuration. For example: Corotor, Polarator, Bullseye II, etc.

OPTIONAL





The following Quick Start information assumes that your satellite viewing system has been installed correctly and is functional. The AC voltage switch must be correctly set before you even turn the receiver on. This should be done by a qualified technician. If you question whether or not the voltage switch is correctly set, call a professional dealer for help. If you have problems turning your system on, getting an audio or video output, or setting the dish limits, you should call a professional dealer for help in installing your system correctly.

Quick Start

Now that you have connected your M100c plus satellite receiver, you are almost ready to go. By following the simple steps outlined in this section, you will be able to start viewing your favorite programs in just a few minutes.

Before you begin, make sure that:

- the correct AC voltage has been selected
- the receiver is connected to the satellite dish
- the power is on
- the satellite dish is properly aligned

To complete the Quick-Start installation, follow the steps described here:

1. Set Dish Limits

Note: When setting the dish limits, make sure you are in a position where you can see the dish as it moves, or that you have a helper watch the dish to be sure it is not damaged by moving too far in a given direction or running into obstacles.

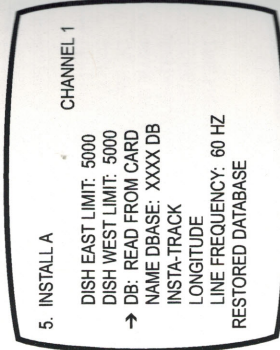
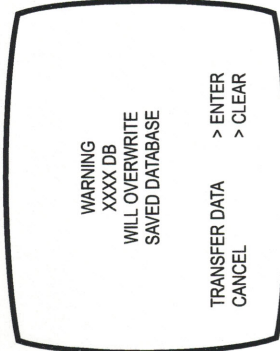
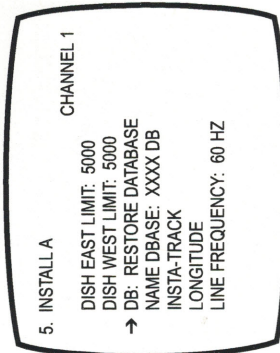
- Press MENU **17** and the number 5 on the numeric keypad **10** to access the INSTALL A menu.
- Move the cursor to DISH EAST LIMIT and press ENTER **9** to display the SET EAST LIMIT menu.
- Press and hold **◀** until the dish moves just east of the easternmost satellite. You can also enter a known limit on the numeric keypad. The dish-limit number changes as the dish moves.
- Press MENU to save the setting and return to the INSTALL A menu.
- Move the cursor to DISH WEST LIMIT.
- Press ENTER to display the SET WEST LIMIT menu.

- Press and hold **▶** until the dish moves just west of the westernmost satellite. The dish-limit number changes as the dish moves.
- Press MENU to save the setting and return to the INSTALL A menu.

If you are in the Northern Hemisphere, **◀** should move the dish eastward and **▶** should move it westward. If is important that you check the movement of the dish, or have a helper check, to ensure that your dish is moving in the correct direction. If not, reverse the two azimuth actuator MTR connections located on the back panel of the receiver.

If you are located in the Southern Hemisphere, **◀** should move the dish westward and **▶** should move it eastward. It is important that you check the movement of the dish, or have a helper check, to ensure that your dish is moving in the correct direction. If not, reverse the azimuth actuator MTR connections located on the back panel of the receiver.

If you are located in the Southern Hemisphere, the directional effect of the **◀** and **▶** arrows will be reversed for all operations involving movement in the east/west direction.



2. Restore Database

Your new M100c plus will be equipped with a standard database. After you have set the limits, you will need to restore the internal database. To do so, follow the instructions outlined below.

- Press MENU **17** 5 to display the INSTALL A menu. Using the ▲ and ▼ arrows on the Control Pad **8**, move to DB.
- Press ► to select RESTORE DATABASE.

- Press ENTER **9** and note the on-screen message:

WARNING: RESTORING THE DATABASE WILL ERASE THE EXISTING DATABASE.

- Press ENTER again to confirm that you want to restore the database or press CANCEL **13** to cancel.
- Press CANCEL to return to the INSTALL A menu.

You can also use the optional Memory Card to copy the programming information into your receiver.

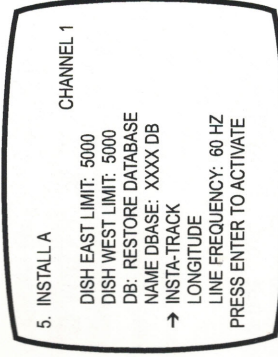
- Press MENU 5 to display the INSTALL A menu. Using the ▲ and ▼ arrows on the Control Pad, move to DB.
- Press ► to select READ FROM CARD.
- Make sure the Chaparral Memory Card is write-protected to prevent accidental loss of data. You can do this by sliding the write-protect tab towards the outside of the card.

Insert the Memory Card (label side up) into the slot on the front panel of the receiver. Press firmly enough to feel it seat, but do not force the card in. When properly inserted, the card will extend about two inches from the front of the receiver.

- Press ENTER and note the on-screen message:
- WARNING: LOADING A NEW DATABASE WILL ERASE THE EXISTING DATABASE.
- Press ENTER again to confirm that you want to transfer the data or press CANCEL to cancel.
- Press CANCEL to return to the INSTALL A menu.

If you choose to transfer the data, a rotating arrow will indicate that data is being copied from the Memory Card. After the transfer, the INSTALL A menu reappears with the message RESTORED DATABASE at the bottom of the screen.

- Remove the Memory Card.

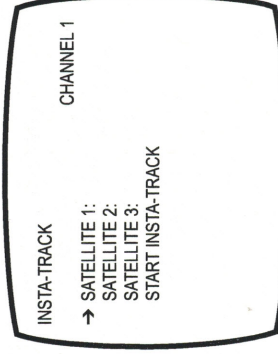


3. Perform an Insta-Track Operation

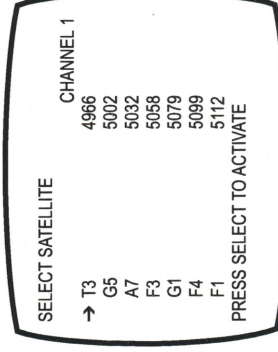
Insta-Track is a simple procedure that allows your receiver to automatically set the correct positions for all the satellites in your database. By locating the easternmost satellite, a satellite close to the middle of the arc, and the westernmost satellite, you can have your receiver automatically do the rest.

For Insta-Track to work correctly, valid longitudes for all satellites must be programmed into the receiver.

- Press MENU 5.
- Move the cursor to INSTA-TRACK.
- Press ENTER.
- Move to SATELLITE 1 and press ENTER again to display the SELECT SATELLITE menu.
- Press ◀ or ▶ to page through the list of satellites and ▲ or ▼ to select the easternmost satellite.



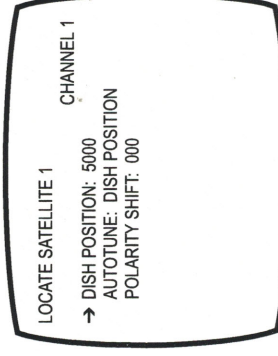
- Press ENTER to display the LOCATE SATELLITE 1 menu. The dish will move. To stop the dish, press ◀ or ▶. Check to make sure the picture belongs to a channel on the selected satellite. If not, press ◀ or ▶ find the correct satellite.
 - Move to AUTOTUNE: DISH and press ENTER to peak the dish for the best signal.
 - Move to POLARITY SHIFT.
 - Press ◀ or ▶ to optimize polarity. You will only need to do this for the first satellite.
 - Press SATELLITE 16 to save and return to the INSTA-TRACK menu.
- The name of Satellite 1 will appear in the menu line.
- Move the cursor to SATELLITE 2.
 - Press ENTER.
 - Press ◀ or ▶ to page through the list of satellites and ▲ or ▼ to select a satellite in the center part of the satellite arc.



- Press ENTER to display the LOCATE SATELLITE 2 menu. The dish will move. Verify that the picture belongs to a channel on the selected satellite as you did for Satellite 1.
- Move to AUTOTUNE: DISH and press ENTER.
- Press SATELLITE to save and return to the INSTA-TRACK menu.

The name of Satellite 2 will appear.

- Move to SATELLITE 3.
- Press ENTER.
- Press ◀ or ▶ to page through the list of satellites and ▲ or ▼ to select the westernmost satellite.
- Press ENTER to display the LOCATE SATELLITE 3 menu. The dish will move. Verify that the picture belongs to a channel on the satellite as you did for Satellite 1.
- Move to AUTOTUNE: DISH and press ENTER.
- Press SATELLITE to save and return to the INSTA-TRACK menu.



- The name of Satellite 3 will appear.
- Move to START INSTA-TRACK.
 - Press ENTER.

When your receiver is finished with Insta-Track, the message INSTA-TRACK COMPLETE appears at the bottom of the screen. Insta-Track takes only a few seconds to complete.

Congratulations, you have now worked your way through Quick Start! Your receiver is ready to enjoy. Before you move forward, you may want to save the current database. To do so, follow the instructions on page 28. Next, you will want to read the Basic Operation section with your Remote Control in hand to familiarize yourself with the basic functions of your M100c plus. Once you are comfortable with basic functions, you will want to look through the Special Features section and see what features you want to take advantage of right away. These features do not have to be activated in the order presented in this manual, so feel free to skip around and choose what you want to do next.

In this section you will find information about the M100c plus receiver's basic operation. If you are not familiar with satellite receivers, you will want to read this section thoroughly and then follow the instructions with your Remote Control in hand. If you have a lot of experience with satellite systems, you might want to skip this section and move on to Special Features.

To Access the Menus

Menus 1, 2, 3, and 4 provide access to basic operation functions. Menus 5, 6, and 7 are used for setup.

- Press MENU **17** to display the MENU list and either move the cursor to the desired menu using the **▲** or **▼** arrows on the Control Pad or enter the menu number directly on the keypad.
- If menu 1, 2, 3, or 4 is displayed, pressing MENU will display the next menu in the 1-to-4 sequence. If menu 5, 6, or 7 is displayed, pressing MENU will display the next menu in the 5-to-7 sequence. To return to menus 1-4 once you have gotten into the 5-to-7 loop, you will have to press VIEW to exit all menus, then press MENU to display the MENU list and either move the cursor to the desired menu or enter the menu number directly on the keypad.

To Move Through the Menus with the Control Pad

- **▲** or **▼** moves the cursor up and down in the menus.
- **◀** and **▶** have multiple functions, depending on the active menu (the menu on screen):
 - They select the options for the chosen menu item.
 - They page backward and forward through lists of channels and satellites.
 - They move the cursor left and right through rows in the NAME menu.

To Exit a Menu

- Press CANCEL **18** or VIEW **14**. To exit all menus, press repeatedly.

To Turn off the Audio

- Press MUTE **13**. To turn the audio back on, press MUTE again or VOLUME **▲ 2**. Pressing VOLUME **▼** allows you to lower the volume level without unmuting.

To Activate a Menu Choice

- Press ENTER **9**.

To Identify the Current Satellite, Channel, and Time

- Press **▼** when no menu is showing.
- Press **TIME 4** when no menu is showing.

To Select a Video Channel on a Different Satellite

- Press **SATELLITE 16** and move the cursor to the desired satellite in the displayed list.
- Press **ENTER 9** or press **FAVORITE 6** to select a video channel on another satellite.
- Press **CHANNEL ▲** or **▼ 5** to display the desired channel or key the channel number on the keypad.

To Choose a Favorite Channel

- Press **FAVORITE** repeatedly until the desired group appears.
- Move the cursor to the desired channel and press **ENTER**.

To Choose an Audio Subcarrier on the Active Channel

- Press **AUDIO 15** once. Move the cursor to the desired subcarrier to activate the audio immediately.

To Display a List of all Audio Subcarriers on the Active Satellite

- Press **AUDIO** and the number 8 on the numeric keypad.

To Change Channels on the Active Satellite

- Press the **CHANNEL ▲** or **▼** button.

You can also use one of the three following alternate methods to change channels:

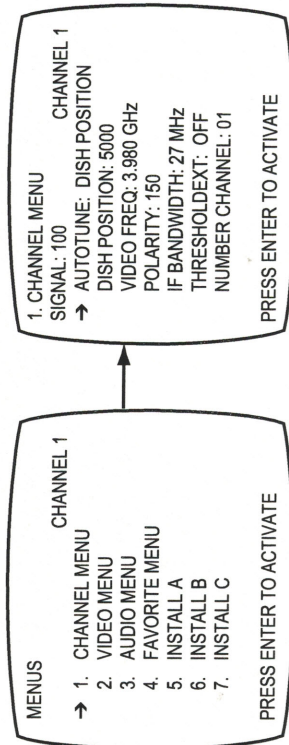
1. Enter the channel number on the numeric keypad, if no menu is showing.
2. Press the **FAVORITE** button and select a channel from the list.
3. Press the **CHANNEL ▲** or **▼** button on the front panel.

To Return to the Previous Channel You Were Viewing

- Press **PIP 7**. Repeated pressing toggles between the last two channels selected on the current satellite.

To Temporarily Stop Flutter and Rollover of a Menu

- Press and hold down **PIP**. While the button is pressed, the sync generator engages, stabilizing the menu.



CHANNEL Menu

If you feel that you need to improve the quality of the channel you are viewing, you can adjust the channel tuning settings located in this menu. Except for dish position, any changes you make will affect only the channel you are viewing.

- Select the channel you wish to custom-tune.
- Press MENU **17** 1 or the MENU key twice to display the CHANNEL menu.
- Move to the desired item.
- Choose options by pressing ◀ or ▶ **8** or enter a value on the numeric keypad where applicable.

AutoTune

Peaks the signal automatically by adjusting three parameters. Choose options in this order: DISH POSITION, POLARITY, and VIDEO FREQ(uency). Press ENTER to activate your choice.

Once you have set the polarity on one channel, you can adjust other odd or even channels to the same value by choosing POLARITY and pressing PIP.

Dish Position

Manually adjusts the east/west dish position.

Video Frequency

Manually adjusts video frequency. The frequency may need adjusting to eliminate noise. However, first perform AutoTune or manual adjustment to the dish position and polarity.

Polarity

Peaks the signal for optimum reception by adjusting the probe in the feedhorn.

IF Bandwidth

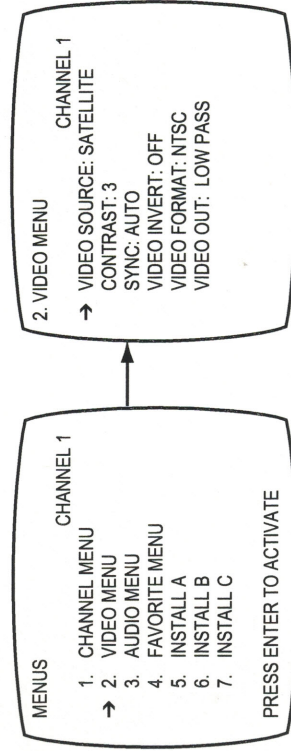
Selects 15, 27, or 32 MHz intermediate-frequency bandwidth. The default is 27 MHz.

Thresholdtext

Improves reception of weak or distorted signals. Choose OFF or ON.

Number Channel

Displays the number of the channel you are currently viewing. Also allows you to renumber channels to match their designation in your local programming guide.



VIDEO Menu

The VIDEO menu allows you to make adjustments to the current channel video.

- Select the channel you wish to custom-tune.
- Press MENU 2 to display the VIDEO menu.
- Move to the desired item.
- Choose options by pressing ◀ or ▶ on the Control Pad or enter a value on the numeric keypad where applicable.

Contrast

Adjusts the brightness level of the video. Choose 1, 2, 3, or 4. The default is 3.

Sync

Provides synchronization pulses for menu displays, preventing rolling or fluttering. ON engages sync continuously; OFF disengages it. AUTO automatically engages internal sync when no video is detected. The default is AUTO.

Video Invert

Corrects an inverted video signal, which can cause a distorted or inverted picture. The default is OFF.

Video Source

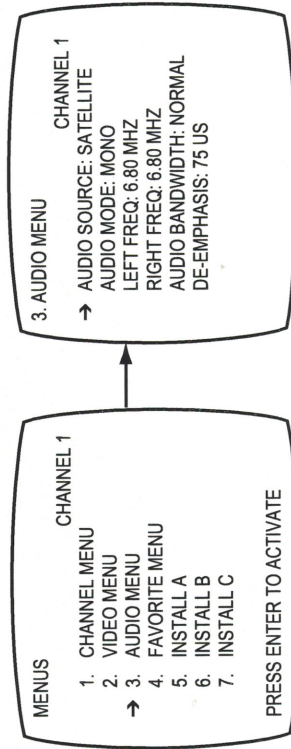
Selects the source for the video signal: SATELLITE or EXTERNAL. The inputs can be decoders, VCRs, laser discs, or other sources.

Video Format

Selects the video format. Choose NTSC (U.S.), PAL (most of Europe and other continents), or SECAM (France, Luxembourg, Monte Carlo, and former Soviet states).

Video Out

Selects the baseband signal needed for a decoder output: FLAT, DE-EMPH(asis), or LOW PASS. The default is LOW PASS.



AUDIO Menu

The AUDIO menu provides tuning adjustments to the current audio channel.

- Select the channel you wish to custom-tune.
- Press MENU **17** 3 to display the AUDIO menu.
- Move to the desired item.
- Choose options by pressing ◀ or ▶ **8** or enter a value on the numeric keypad where applicable.

Audio tuning should be performed for each channel added to the database. Satellite TV guides provide the necessary configuration data. The audio data related to a video channel is included in the database loaded from the Memory Card or in the internal memory.

Audio Source

Selects the signal source: SATELLITE, or EXTERNAL. The inputs can be decoders, CD players, tape decks, or other sources.

Audio Mode

Changes the audio mode between MONO or STEREO.

Left Freq

Sets left-channel frequency.

Right Freq

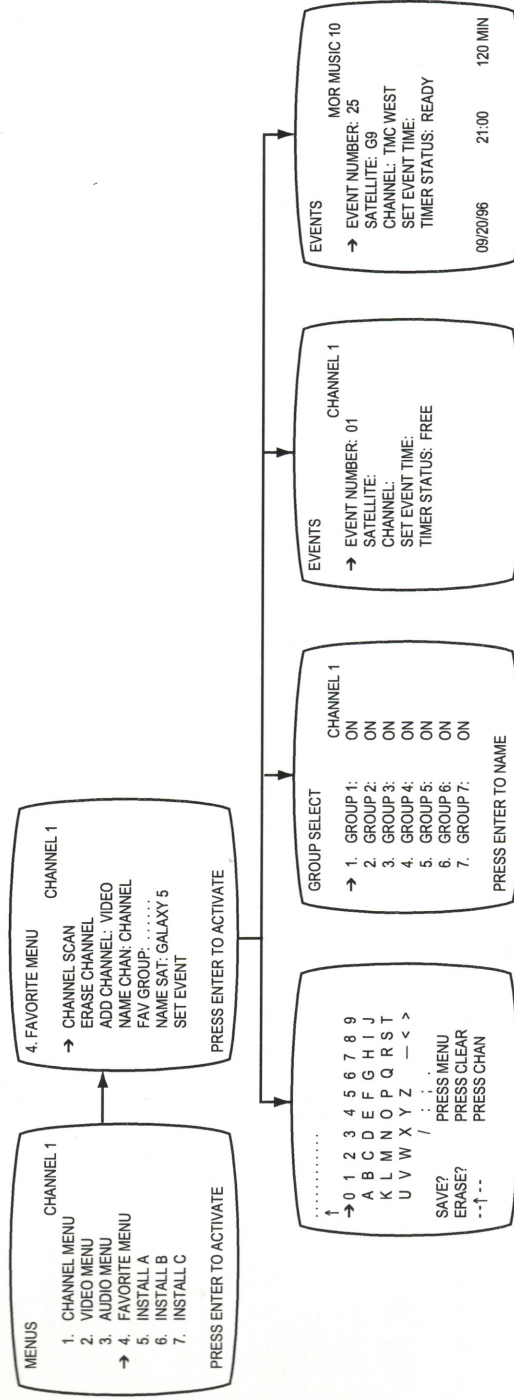
Sets right-channel frequency.

Audio Bandwidth

Sets the bandwidth for video-channel audio and stereo radio: NORMAL, WIDE, or NARROW. For video-channel audio, NORMAL is usually best. For stereo radio, a NARROW bandwidth is usually better.

De-emphasis

Selects the audio de-emphasis to match the pre-emphasis used at the transmission site. You have four options: 50 ms, 75 ms, J-17, or NONE. In Europe J-17 or 50 ms is used. In the United States, it is 75 ms.



FAVORITE Menu

Through the FAVORITE menu, you can adjust the content of your Favorite groups. You can also add or delete channels from your database and modify the existing channel data. The FAVORITE menu accesses the Naming function.

- Press MENU 4 to display the FAVORITE menu.
- Move to the desired item.
- Choose options by pressing ◀ or ▶ or enter a value on the numeric keypad where applicable.

Channel Scan

Scans the current satellite for new channels not in the database.

Erase Channel

Erases the channel you are viewing from the database.

CAUTION: This action is not reversible, nor does a prompt appear on-screen warning you that you are about to erase a channel. If you have accidentally erased a channel, see page 28 for instructions on how to restore a channel.

Add Channel

Allows you to add video and audio channels with individual parameters.

Name Chan

Allows you to rename the current channel.

Fav Group

Indicates with a symbol (*) the groups that include the current channel (from left to right, Groups 1 to 7). An individual channel can be included in more than one group. Also accesses the GROUP SELECT submenu by pressing ENTER.

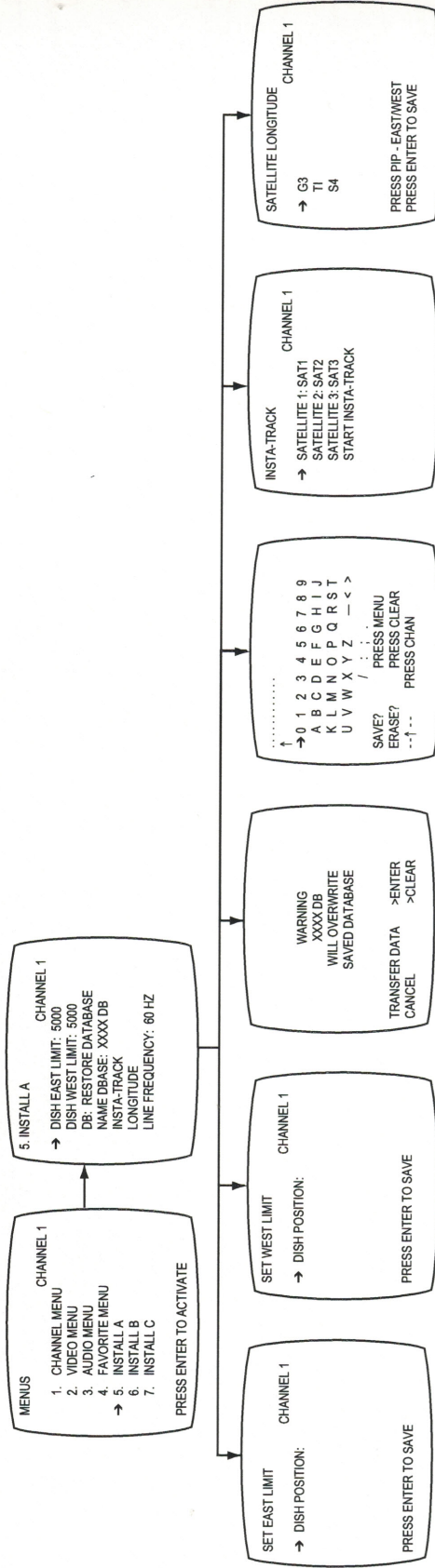
You can also name the individual groups with intuitive names such as "movies" and "news."

Name Sat

Permits renaming of the current satellite. You should name your satellites to match the listing in the satellite TV guide.

Set Event

Selects the EVENTS MENU, which allows you to program up to 25 events.



INSTALL A Menu

Through the INSTALL A menu, you can perform many of the basic installation functions. It is also through this menu that you will access INSTA-TRACK.

- To access INSTALL A, press MENU **17** 5.
- Move the cursor to the desired item. To choose an option, press ◀ or ▶ or use the numeric keypad where applicable.
- Pressing MENU repeatedly will cycle through the three INSTALL menus.
- To exit, press CANCEL **18**.

Dish East Limit Dish West Limit

Sets the east/west limits of dish travel. Press ENTER **9** to access the appropriate submenu.

Insta-Track Submenu

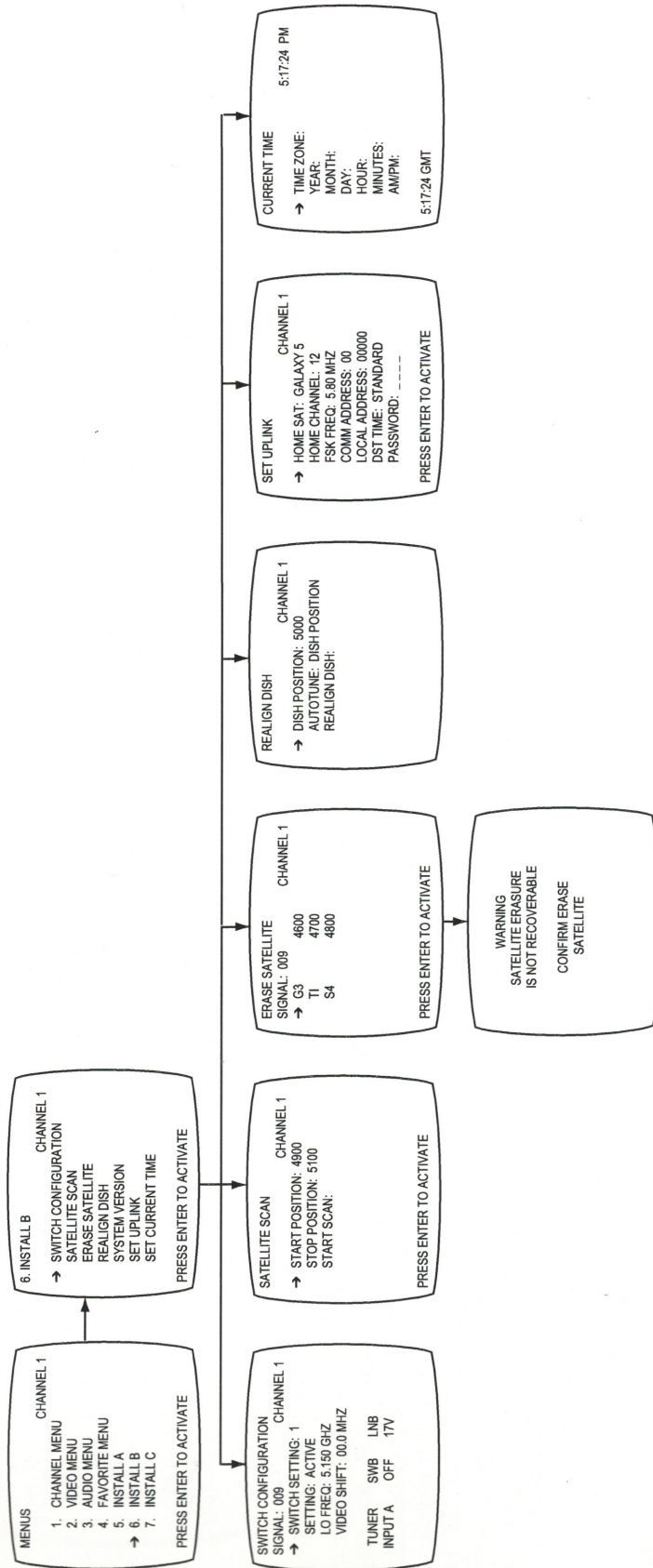
Accesses Insta-Track. This feature automatically calculates the correct positions for all satellites. It will ensure that your satellite dish is set at the optimum position for receiving signals from a given satellite. For Insta-Track to work properly, a longitude value must be set for each satellite.

Longitude Submenu

Allows you to assign longitudes to new satellites in the database.

Line Frequency

To determine the LINE FREQUENCY to use where you live, contact a dealer in your area. For Europe, the setting should be 50 Hz, for the United States, the setting should be 60 Hz. Choose CRYSTAL if your AC power source is inconsistent. Crystal is typically less accurate than the AC line setting.



INSTALL B Menu

- To access INSTALL B, press MENU 6.
- Move the cursor to the desired item. To choose an option, press ◀ or ▶ or enter it on the numeric keypad where applicable.

Switch Configuration Submenu

Configures the receiver to match the hardware configuration of feed types and external switches.

Satellite Scan Submenu

Scans the satellite arc and adds new satellites and channels to the database.

Erase Satellite

Removes a satellite from the database.

Realign Dish Submenu

Realigns the dish position for all satellites.

System Version

Displays the version number of the current internal firmware.

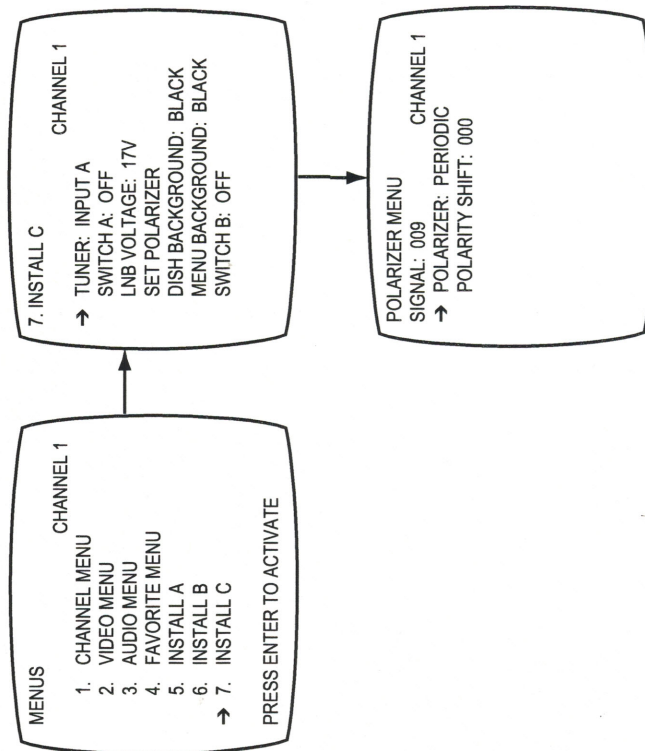
Displays free memory.

Set Uplink Submenu

Displays the SET UPLINK submenu which allows setting variables for control of the M100c plus through the data uplink.

Set Current Time Submenu

Selects the CURRENT TIME MENU to set the internal clock.



INSTALL C Menu

- To access INSTALL C, press MENU **17** 7.
- Move the cursor to the desired item. To choose an option, press ◀ or ▶ **8** or enter it on the numeric keypad where applicable.

Tuner

Toggles between Input A and Input B.

LNB Voltage

This setting should match the LNB in your system: for a wideband LNB, choose 13V or 17V; for a single band LNB, choose 17V.

Switch A

Toggles the Switch A terminal on the rear panel ON or OFF.

Switch B

Toggles the Switch B terminal on the rear panel ON or OFF.

Set Polarizer Submenu

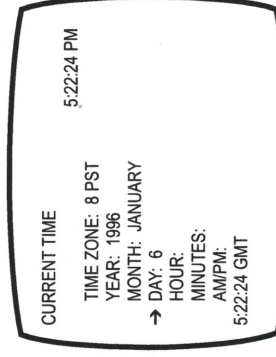
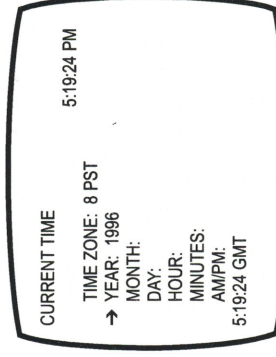
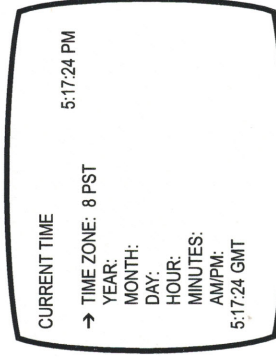
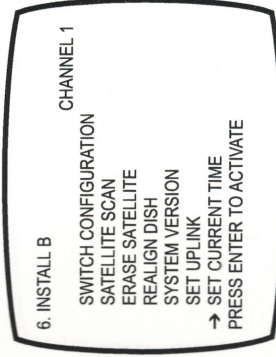
This submenu allows you to set polarity type and shift on a per-channel basis.

Dish Background

Provides a black screen or video background during dish movement.

Menu Background

Provides a black or video background behind the menus.



Set Date & Time

One of the features provided by the M100c plus is the ability to receive scheduled events. By following just a few simple steps, you can program your M100c plus to receive events from a variety of sources and at various times. For this feature to work correctly, however, your receiver must be adjusted to the correct date and time. Even if you are not planning on programming your receiver, you will want to adjust the date and time for convenience.

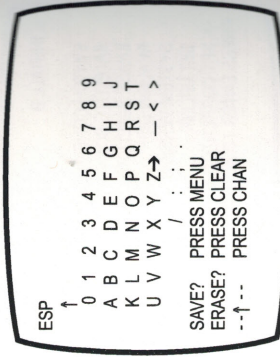
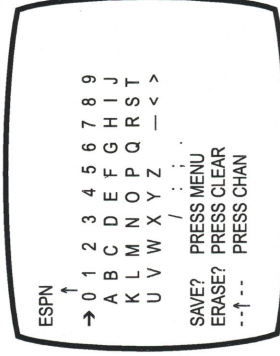
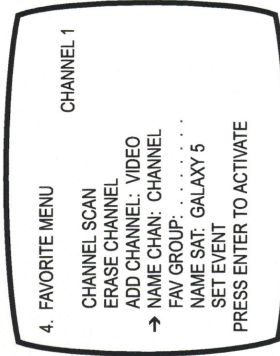
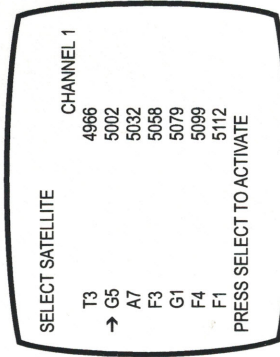
Local time and universal time (Greenwich meant time) are displayed. The clock is set to local time, with the universal time being derived from a combination of the local time and time zone options. The local time is displayed in the upper right hand corner of the screen. The Universal time is displayed in the lower right corner of the screen. Unless your receiver is part of a network, we suggest leaving the time zone at 00.

Adjusting the date and time on your receiver can be done easily by accessing the CURRENT TIME submenu of MENU 6, the INSTALL B menu. Once you have accessed the menu, simply use the ▼ arrow to select the option you want to adjust, and the ◀ or ▶ arrows to scroll through and select the desired date or time, or enter the number directly on the keypad. The process is outlined here, step-by-step.

- Press MENU 6 to display the INSTALL B menu.
- Move to SET CURRENT TIME. Press ENTER 9 to display the CURRENT TIME submenu.
- Press ◀ or ▶ to scroll through the menu or enter the time zone on the numeric keypad.

- Press ▼ to highlight the year.
- Press ◀ or ▶ to scroll through or enter the current year on the numeric keypad.
- Press ▼ to highlight the month.
- Press ◀ or ▶ to select the current month.

- Press ▼ to move to DAY.
- Press ◀ or ▶ to scroll through or enter the current date on the numeric keypad.
- Press ▼ to highlight the hour.
- Press ◀ or ▶ to select the current hour or enter it on the numeric keypad.
- Press ▼ to highlight the minutes.
- Press ◀ or ▶ to scroll through or enter the current minutes on the numeric keypad.
- Press ▼ to move to AM/PM.
- Press ◀ or ▶ to select the correct designation.
- Press CANCEL 13 to save the information and exit the menu.



Naming

The naming function can be used to name, or rename, a variety of items. This will allow you to customize your receiver to reflect your personal system and will make it even easier for you to use. The naming procedure is the same whether you are naming a satellite, a group, or a channel. Once you have accessed the desired menu, you simply move the cursor through the matrix of letters and punctuation by pressing the ◀ or ▶ Ⓚ keys on the Remote Control. Pressing the numbers 0-9 on the keypad will move the cursor to the top of each column. By placing the cursor to the left of the desired letter and pressing ENTER, you can enter up to 12 characters in the name line. The following pages provide step-by-step instructions for naming a channel, a group, or a satellite. You can also refer to the index for page references.

Naming a Channel

To Select Satellite and Channel

- Press SATELLITE **16**.
- Move to the desired satellite.
- Press ENTER **9**.

To Select Characters for Name

- Press ▲ or ▼ to move through the rows.
- Press ◀ or ▶ to move through the columns.
- To select a character, place the cursor to its left.
- Press ENTER to enter the selected character in the NAME line. Repeat this seek-and-select procedure for each character in the name. There is room for a maximum of 12 characters, including spaces and punctuation.

- Press CHANNEL ▲ or ▼ **5** to select a channel or enter the number on the numeric keypad **10**.

- Press MENU **4**.
- Move to NAME CHAN.
- Press ENTER.

To Edit the Name If Necessary

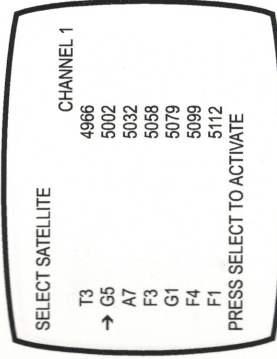
- To edit the name, press CHANNEL ▲ or ▼. Enter a blank space in the desired position.

To Save and Verify Change

- Press MENU **17** to save the changed name and return to the FAVORITE menu. Verify the change of name.



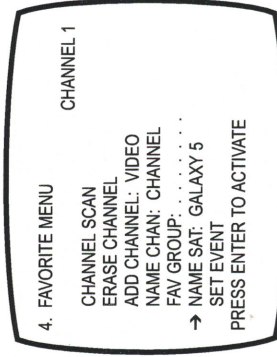
You can press CANCEL or VIEW at any time to exit the menu.



Naming a Satellite

Select the Satellite

- Press SATELLITE.
- Move to the desired SATELLITE.
- Press ENTER.
- Press MENU 4.
- Move to NAME SAT.
- Press ENTER.



Select Characters for Name

- Press ▲ or ▼ to move through the rows.
- Press ◀ or ▶ to move through the columns.
- To select a character, place the cursor to its left.
- Press ENTER to enter the selected character in the NAME line. Repeat this seek-and-select procedure for each character in the name. There is room for a maximum of 12 characters, including spaces and punctuation.

Edit the Name If Necessary

- To edit the name, press CHANNEL ▲ or ▼. Enter a blank space in the desired position.

Save and Verify Change

- Press MENU to save the changed name and return to the FAVORITE menu. Verify the change of name.

Naming a Group of Favorite Channels

Select Group for Naming

To Name Video Group

- Press MENU 4.
- Move to FAV GROUP.
- Press ENTER.
- Move to the desired group.
- Press ENTER.

Select Characters for Name

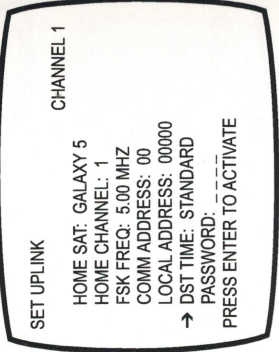
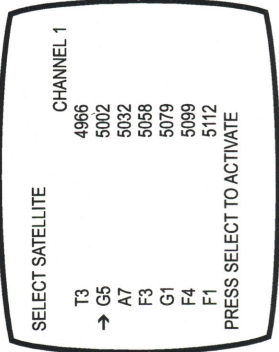
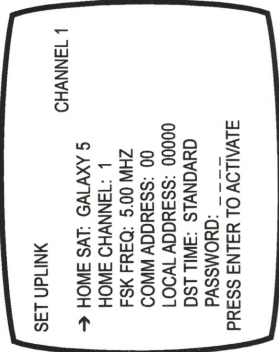
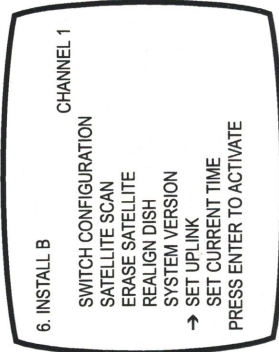
- Press ▲ or ▼ to move through the rows.
- Press ◀ or ▶ to move through the columns.
- To select a character, place the cursor to its left.
- Press ENTER to enter the selected character in the NAME line. Repeat this seek-and-select procedure for each character in the name. There is room for a maximum of 12 characters, including spaces and punctuation.

Edit the Name If Necessary

- To edit the name, press CHANNEL ▲ or ▼. Enter a blank space in the desired position.

Save and Verify Change

- Press MENU to save the changed name and return to the FAVORITE menu. Verify the change of name.



Setting the Uplink Parameters

The SET UPLINK menu is used to set the parameters for control of the M100c plus from a remote location. External sources of control can consist of an FSK transmission from the uplink or a computer connected through the data link port.

- Press MENU **7** 6 to display the INSTALL B menu.
- Move the cursor to SET UPLINK. Press ENTER **9** to access the SET UPLINK submenu. A prompt at the bottom of the screen will ask you to enter the password. Once you have entered the correct password, the SET UPLINK menu will be displayed.

The first step in setting the uplink parameters is to identify the home satellite and channel. The home satellite and channel will provide the receiver with an address to return to at the end of a programmed event.

- Move the cursor to HOME SAT and press ENTER. The SATELITE menu will appear.
- Move the cursor to the desired satellite and press ENTER.
- Move the cursor to HOME CHAN and press ENTER. The FAVORITES menu will appear.
- Move the cursor the desired channel and press ENTER.

To disable the home satellite feature, press **◀** or **▶** **8**. When you do this, the HOME SAT and HOME CHAN fields will clear.

The next step is to set the FSK frequency, common address and local address. The FSK FREQUENCY will tune the internal FSK demodulator to a subcarrier frequency that contains digital data sent from the uplink. This data is used to control the M100c plus receiver. The COMM ADDRESS (serial port address) is used to set the data link address. This allows multiple receivers to be controlled by one computer. The LOCAL ADDRESS (downlink address) is used to set the unique receiver address for FSK uplink transmissions.

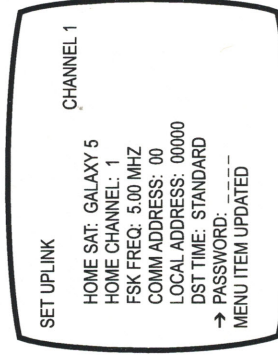
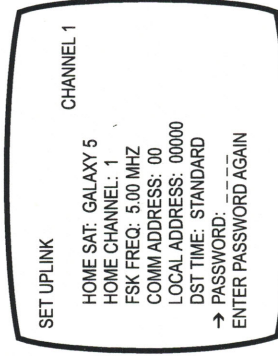
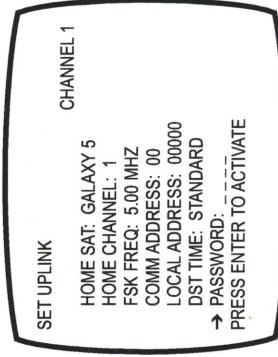
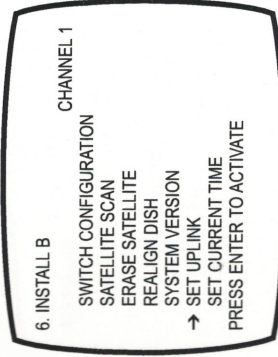
- Move the cursor to FSK FREQ and enter the number using the numeric keypad.
- Move the cursor to COMM ADDRESS and enter the serial address using the numeric keypad (00-99). The factory default setting for the serial address is 00. If you have a receiver not included in a network, use 0. For networks with multiple receivers, use the numbers 1-99.

- Move the cursor to LOCAL ADDRESS and enter the desired number using the numeric keypad (0-32767). The factory default setting for the local address is 0.

DST TIME sets a flag in the receiver for units in a daylight savings time zone.

- Move cursor to DST TIME and press **◀** or **▶** to select STANDARD, DAYLIGHT SAVE, or NONE.

Note: If daylight savings time is used in your area, select DAYLIGHT SAVE regardless of whether it is actually in effect at the time.



Setting the Password

When activated, the password will protect all menu features except access to channels, audios, satellites and favorites.



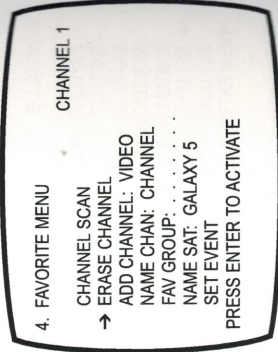
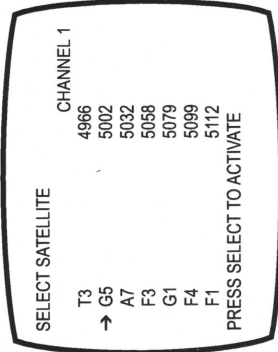
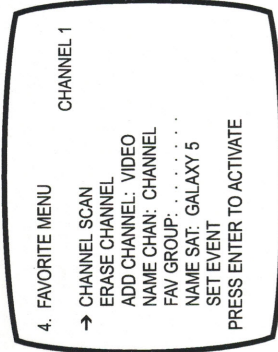
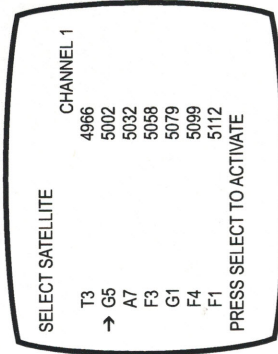
If you don't know the password associated with your receiver, you can press the **▶** arrow when asked to enter a number. Doing so will give you an **INVALID ENTRY** prompt. Pressing **0** on the keypad and then **ENTER** will display a reference number on the screen. To identify the password, you can call the Network Administrator with the reference number and they will be able to give you the password associated with your receiver. If your receiver is not part of a network, contact Chaparral Technical Services at (408)435-3088 with your reference number.

Changing the Password

- Press **MENU 6**.
- Move the cursor to **SET UPLINK** and press **ENTER** to access the **SET UPLINK** submenu.
- Move the cursor to **PASSWORD**.

- Enter the new password made up of four numbers. A prompt at the bottom of the screen will display **ENTER PASSWORD AGAIN**.

- Enter the new password again. When the fourth digit is entered, a prompt at the bottom of the screen will display **MENU ITEM UPDATED**.
- Press **CANCEL 13** to exit the menu.
- The password can be disabled by entering four zeros.



Adding New Channels Using the Scan Method

Use the scanning method described on this page to add all the new video channels on a satellite at one time. Use the method described on the following page if you want to add channels one at a time.

To Select Satellite for Scanning

- Press SATELLITE **10**.
- Move to the desired satellite.
- Press ENTER **9**.
- Press MENU 4.
- Move to CHANNEL SCAN.
- Press ENTER to start the scan.

A rotating arrow at the bottom of the screen indicates the scan is in progress.

Note: If you wish to stop the scanning process once it has been activated, press CANCEL **18**.

The M100c plus scans the current satellite, adding all absent channels to the end of the channel list. For example, if the last channel is 24, the scan will add channel 25, channel 26, etc. Existing channels remain unaffected. When the scan is finished, a message displays the number of added channels.

Note: The channel names and numbers assigned to new channels do not correspond to an actual name or location. For instance, all newly added channels are named CHANNEL. Once you are finished scanning, you should name and number the channels to match the listing in the television guide.

To Change Name and Number

Name and number each channel to match its listing in a television guide. (See page 22.)

Removing a Channel from the Database

If a channel is no longer active, or you no longer watch it, you can follow these steps to delete it from your receiver's memory.

Note: This action is not reversible. Be sure that you have selected the correct channel before proceeding. If you accidentally erase the wrong channel, you can add it to the database by following the instructions on page 27.

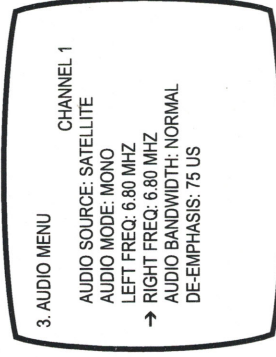
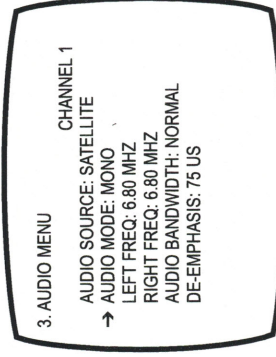
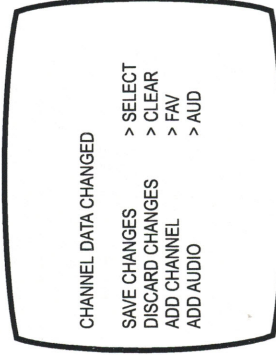
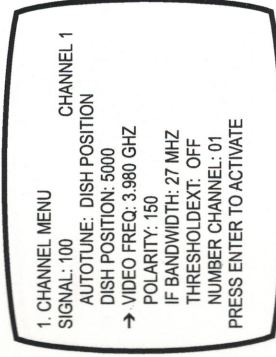
- Press SATELLITE to access the SELECT SATELLITE menu.
- Move to the desired satellite.
- Press CHANNEL **▲** or **▼ 5** to select the channel number or enter it directly on the keypad.

- Press MENU 4.

- Move to ERASE CHANNEL.

- Press ENTER to remove the channel.

The next higher channel becomes the current channel. You can remove all but one channel on a satellite.



Adding Channels One at a Time

If you know the frequency of the channel you wish to add, you can follow these simple steps to add it to your database.



Note: Most local satellite programming guides include channel frequency listings.

To Add a Video or Audio Channel

You can add an audio or video channel by accessing MENU 4, the FAVORITES menu.

- Press MENU 4.
- Move cursor to ADD CHANNEL.
- Select VIDEO or AUDIO, depending on the type of channel you wish to add. After you have added the channel, you can adjust frequencies, polarity and bandwidth.

To Add an Audio Channel

- Press MENU 3.
- Move to MODE.
- Press ◀ or ▶ to select STEREO or MONO.
- Move to LEFT FREQ.
- Press ◀ or ▶ to adjust the frequency or enter it directly.

You can obtain the frequency data for new audio subcarriers from a programming guide.

- Move to RIGHT FREQ.
- Press ◀ or ▶ to adjust the frequency or enter it on the numeric keypad.
- Press CANCEL.

The CHANNEL DATA CHANGED menu appears if the audio frequency is changed more than 100 KHz.

- Press FAVORITE to add the new audio channel.
- Name each newly added channel.
- Add the new channel to favorite audio or video group if desired.

Alternative Method

You can also add an audio or video channel by following these directions.

- Press MENU 1.
- Move to VIDEO FREQ.
- Press ◀ or ▶ to adjust the frequency, or enter it directly. Press ENTER to save.
- Adjust polarity if necessary.
- Press CANCEL to exit the menu.

The CHANNEL DATA CHANGED menu appears if the video frequency is changed by more than 7 MHz.

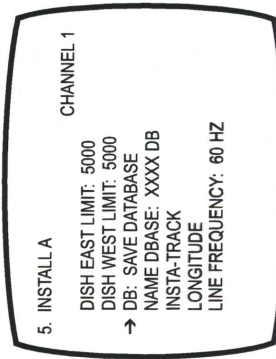
- Press FAVORITE **6** to add the new video channel.
- Name and number each new channel to correspond with your local television guide.

To Name and Number Added Channels

The new video channel will be named CHANNEL; the new audio channel will be named AUDIO. The new channel will display the number of the current channel. Name and number each new channel to match its listing in a television guide.



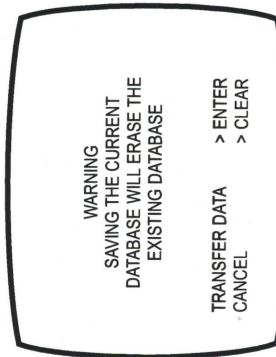
Note: Special Chaparral software is available through your equipment provider for developing custom databases on your IBM Compatible PC.



Saving the Database

Once you have customized your receiver to reflect the satellites and channels you view, you will want to save the database. You can save the database to the receiver's internal nonvolatile RAM (NVRAM). Because this memory is built into the receiver, it is easily accessed and is always available.

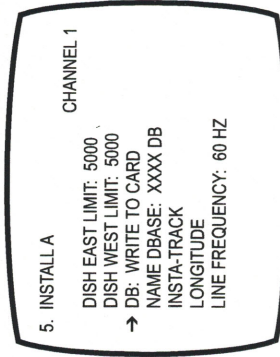
- Press MENU **17** 5 to display the INSTALL A menu. Using the **▲** and **▼** arrows on the Control Pad **8**, move to DB.
- Press **▶** to select SAVE DATABASE.



- Press ENTER **9** and note the on-screen message:

WARNING: SAVING THE CURRENT DATABASE WILL ERASE THE EXISTING DATABASE.

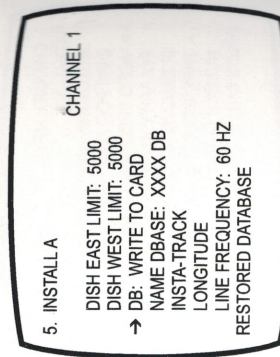
- Press ENTER again to confirm that you want to copy over the existing database or press CANCEL **18** to cancel.
- Press CANCEL to return to the INSTALL A menu.



You can also save the database to an optional Memory Card by following the following directions.

- Press MENU 5 to display the INSTALL A menu. Using the **▲** and **▼** arrows on the Control Pad, move to DB.
- Press **▶** to select WRITE TO CARD.

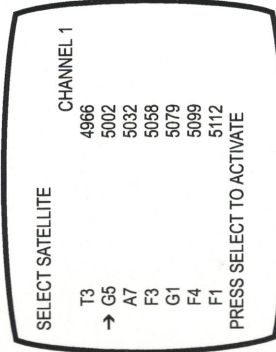
- Make sure the Chaparral Memory Card is not write-protected. You can do this by sliding the write-protect tab towards the inside of the card. Insert the Memory Card (label side up) into the slot on the front panel of the receiver. Press firmly enough to feel it seat, but do not force the card in. When properly inserted, the card will extend about 24 mm (about 1 inch) from the slot.



- Press ENTER again to confirm that you want to transfer the data or press CANCEL to cancel.
- Press CANCEL to return to the INSTALL A menu.

If you choose to transfer the data, a rotating arrow will indicate that data is being copied to the Memory Card.

- Remove the Memory Card.
- Should your receiver's database ever become corrupted, follow the instructions on page 10 to restore your database.



Adding (Removing) a Video/Audio Channel to (From) a Group

As time progresses, you may find that your favorite groups are no longer complete. You may have stopped watching or listening to a particular channel, or discovered a new one. By following the procedure outlined below, you can easily edit your favorite groups.

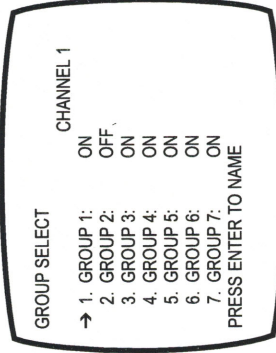
To Select Satellite and Channel

- Press SATELLITE **16**.
- Move to the desired satellite.
- Press ENTER.
- Press CHANNEL **▲** or **▼ 5** to select the desired channel or enter the number on the numeric keypad.

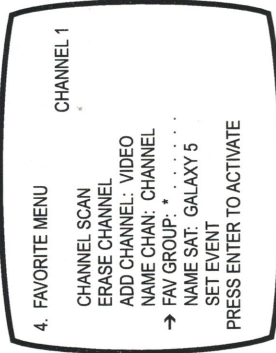


To Select Favorite Video Group

- Press MENU 4.
- Move to FAV GROUP.
- Press ENTER.

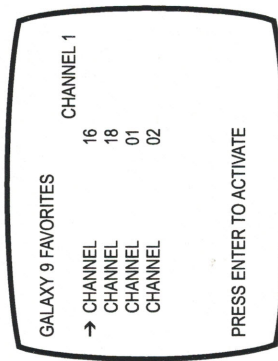


- Move to the desired group.
 - Press **◀** or **▶** to toggle the selected channel ON or OFF.
- ON adds the channel to a group, OFF removes it. A channel can be included in more than one group. Without leaving the GROUP SELECT menu, you can add any channel on the current satellite to a group or remove it from a group. Press CHANNEL **▲** or **▼** to select the desired channel, then toggle the group options.



To Verify Change

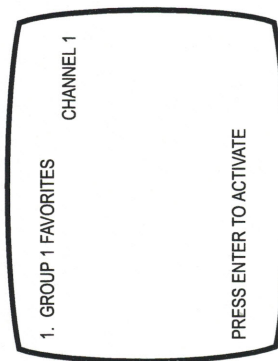
- Press CANCEL.
- A symbol (*) appears after FAV GROUP for each group that contains the newly added channel.
- Press CANCEL again or VIEW **14** to clear the screen.



Reviewing Satellite & Group Favorites

To Access Favorites on Current Satellite

- Press FAVORITE **6** to display your list of personal favorites for the current satellite.



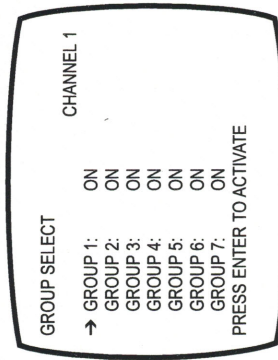
To Access Favorite Groups

- Press FAVORITE again.

The Group 1 favorites appear.

- Press FAVORITE again.

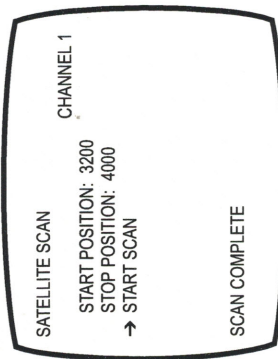
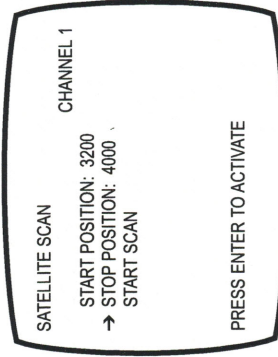
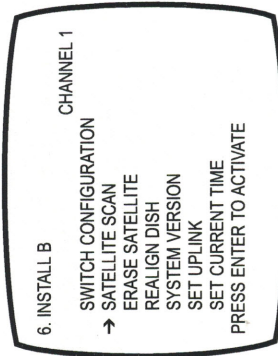
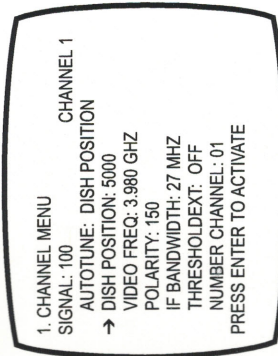
The Group 2 favorites appear. Each press of FAVORITE advances the screen to the next group. After Group 7 you return to the current satellite favorites.



Note: You can access group favorites directly by pressing FAVORITE and then entering the number of the group on the numeric keypad.

Alternatively, when a group menu is on-screen, you can access a different group directly by entering its number.

- Press ◀ or ▶ **8** to page through the channels for the displayed group.
- Press CANCEL **18** or VIEW **14** to clear the screen.



Adding a Satellite to the Database

If a new satellite becomes available and you wish to access it, follow the directions below to add it to your database.

- Press **MENU 17** 1.
- Move to **DISH POSITION**.
- Press **◀** or **▶** **8** to position the dish on the new satellite.
- Press **CANCEL**.

The **SATELLITE DATA CHANGED** menu appears.

- Press **SATELLITE 16** to add the new satellite to the database.

The satellite that you started with retains its original position.

- Name and number the new satellite and add its longitude.
- Perform a channel scan to enter the channels on the new satellite into your database.
- Name and number new channels.

Alternate Method

An alternate method for adding a new satellite is described in the following three-step sequence.

1. Go to **SATELLITE SCAN** Menu
 - Press **MENU 6**.
 - Move to **SATELLITE SCAN**.
 - Press **ENTER** to display the **SATELLITE SCAN** menu.

2. Set Scan Limits

- Enter the desired scan limit in the **START POSITION** line.
- Move to **STOP POSITION**.
- Enter the desired scan limit.

3. Scan for New Satellites and Channels

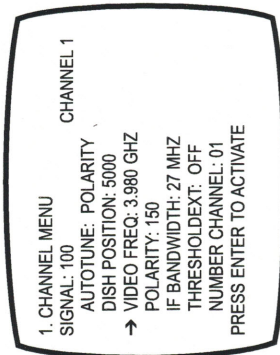
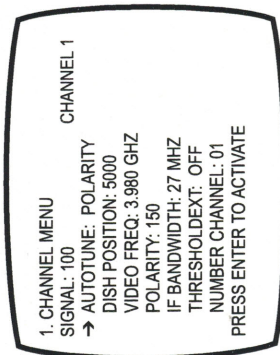
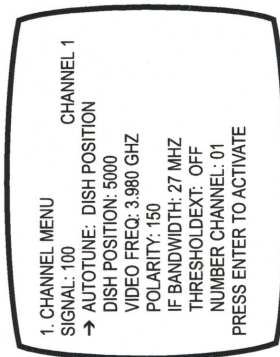
- Move to **START SCAN**.
- Press **ENTER**.

A rotating arrow indicates a scan in progress.

The M100c plus scans the chosen section of the satellite arc, adding all satellites and channels currently missing from the database. Established satellites and channels remain unaffected.

When the scan is finished, the message **SCAN COMPLETE** appears at the bottom of the menu.

The time required for a scan depends upon the width of the scan limits, the number of satellites and channels found, and the number of feed types.



Peaking the Satellite Signal

Peaking the satellite signal will help you automatically view the best picture possible, and hear the best audio possible.

1. Select Dish AutoTune
 - Press MENU **17** 1 to display the CHANNEL MENU.
 - Move the cursor to AUTOTUNE and press **◀** or **▶** **8** to select the DISH POSITION option.
 - Press ENTER **9** to peak the signal.
 - Press CANCEL **18** to exit the menus.

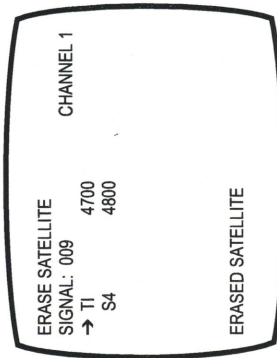
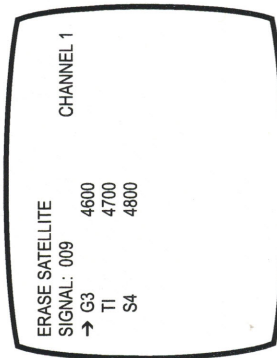
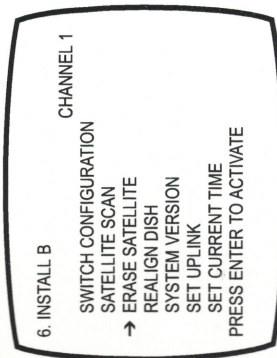
2. Select Polarity AutoTune
 - Press MENU 1 to display the CHANNEL MENU.
 - Move the cursor to AUTOTUNE and press **◀** or **▶** to select the POLARITY option.
 - Press ENTER to peak the signal.

Note:

After you have adjusted the polarity for the channel you are viewing, you can set the horizontal or vertical polarity for all channels on the current satellite by moving the cursor down to POLARITY and pressing PIP.

- Press CANCEL to exit the menus.

3. Select Video Frequency
 - Press MENU 1 to display the CHANNEL MENU.
 - Move the cursor to VIDEO FREQUENCY and press **◀** or **▶** to peak the signal.
 - Press CANCEL to exit the menus.



Removing a Satellite from the Database

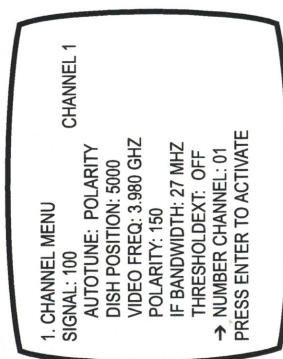
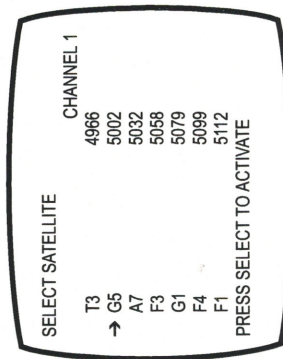
If a satellite is no longer available, you may wish to remove it from your database. The following procedure outlines the steps you need to take.

- Press MENU 6.
 - Move to ERASE SATELLITE.
- Unlike channel erase, you cannot remove the satellite you are currently viewing.
- Press ENTER.

- Move cursor to the desired satellite.

- Press ENTER.

The satellite is removed from the database. The message ERASED SATELLITE appears at the bottom of the screen. This action cannot be undone; however, you can follow the directions on page 31 to add the satellite.



Changing Channel Numbers

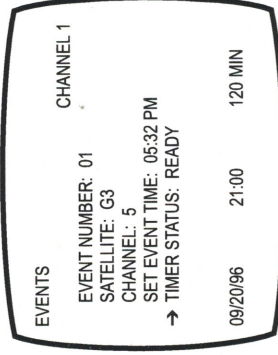
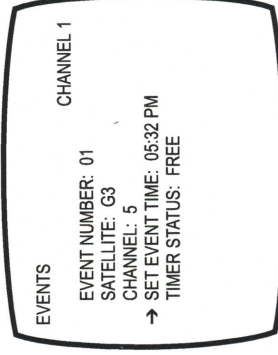
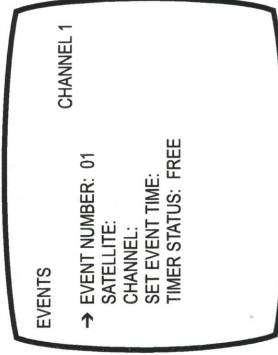
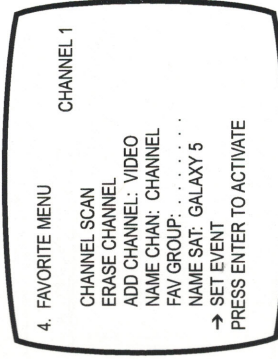
If the channel number in your receiver does not match the channel number in the program listing, you will want to change your designation so that they match.

- Press SATELLITE **16**.
- Move to the desired satellite.
- Press ENTER **9**.

- Press CHANNEL **▲** or **▼ 5** to select a channel or enter its current number on the numeric keypad.
- Press MENU **17** 1.
- Move to NUMBER CHANNEL.
- Press **◀** or **▶ 8** or enter the new number on the numeric keypad. You can choose a value between 1-99.

Note:

It is possible to have multiple channels with the same channel number.



Setting the Event Timer

The SET EVENT menu will tune the M100c plus receiver to a selected satellite and channel at a preprogrammed time. Up to twenty-five events can be pre-programmed.

1. Go to FAVORITES MENU
 - Press MENU 4 to display the FAVORITES menu. Move cursor to SET EVENT and press ENTER.

2. Set Event

- Move cursor to EVENT NUMBER. Press ◀ or ▶ to select the desired event number. You can also enter the number directly using the numeric keypad.
- Move cursor to SATELLITE and press ENTER. The satellite listing will appear.
- Move the cursor to the desired satellite and press ENTER.
- Move cursor to CHANNEL and press ENTER. The FAVORITES listing for the selected satellite will appear. Move the cursor to the desired satellite and press ENTER.

3. Set Event Time

- Move cursor to SET EVENT TIME and press ENTER to access the SET EVENT TIME menu.
- Move the cursor to each menu line in the SET EVENT TIME menu and press ◀ or ▶ to select the correct entry. You can also enter the information directly using the numeric keypad.
- Press CANCEL 18 to exit and return to the SET EVENT menu.

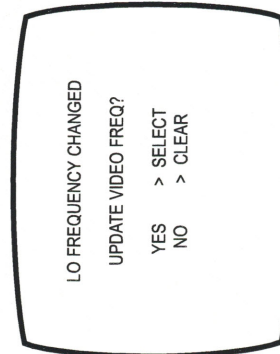
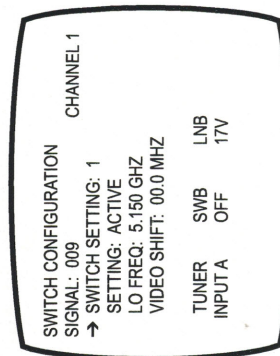
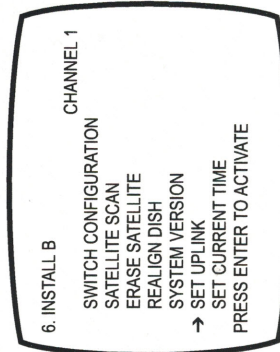
4. Status/Canceling Events

When all appropriate event information is entered, the TIMER STATUS line will display READY. If no event has been set, or if the LENGTH MINUTES is zero, the TIMER STATUS line will display FREE. When an event is being executed, the TIMER STATUS line will display ACTIVE and a summary of the event will appear at the bottom of the screen.

- To cancel an event that is either READY or ACTIVE, move the cursor to the STATUS line and press ENTER. The event LENGTH MINUTES will be set to zero and the event will stop executing.

Note:

The event STATUS will be READY only if all timer parameters have been properly set. Once an event has been executed, the LENGTH MINUTES is reset to zero and the STATUS is set to FREE.



Common Local Oscillator Frequencies		
Band	LO	
C	5.1500 GHz	
Ku	10.7500 GHz	

Setting the Switch Configuration

Your personal satellite system can be configured in many different ways. You can have multiple LNBs, antenna inputs, and optional external A/B switches. Depending on the physical setup of your system, you will have to adjust the internal switch settings. Each LNB must be configured separately.



Note: You should not attempt to change the switch settings on your system unless you have experience in this area. Either way, you should backup your database onto your Memory Card or nonvolatile RAM before you begin.

HINT: The following pages include several examples of possible feed type/LNB configurations. Find the one that matches your system and use the data provided in the table to set your switches and your local oscillator LO Frequency.

2. Press ENTER **9** to display the SWITCH CONFIGURATION menu. The cursor will point to SWITCH SETTING.
3. Enter the appropriate switch configuration setting using the numeric keypad (see "Switch Matrix" table on the following page)*.
4. Move to SETTING and choose ACTIVE.
5. Move to LO FREQ and enter the local oscillator frequency of your LNB for the selected feed type on the numeric keypad (see "Common Local Oscillator Frequencies" table below). Setting the correct LO frequency will display the correct video frequency in the CHANNEL menu.
6. Repeat steps 3, 4, and 5 for each switch option.



Note: If you change the LO frequency from any number other than zero and then change the SWITCH setting on line 1 or exit the menu, a prompt will appear on-screen, asking you to confirm an update to the video frequency.

Responding to the prompt: For "yes," press ENTER, which will shift all the channels for the selected SWITCH setting by the amount of the change to the LO frequency. For "no," press CANCEL, which will change only the video-frequency display in Menu 1, the CHANNEL MENU.

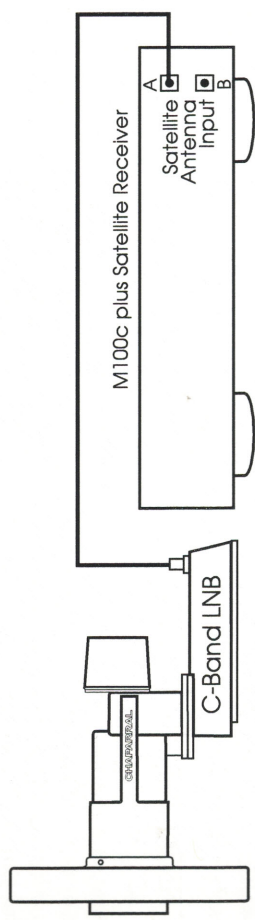
Switch Matrix

Use this switch matrix to create a custom hardware configuration.

Switch Setting	Tuner	Switch A	LNB
1	INPUT A	off	17V
2	INPUT B	off	17V
3	INPUT A	on	17V
4	INPUT B	on	17V
5	INPUT A	off	13V
6	INPUT B	off	13V
7	INPUT A	on	13V
8	INPUT B	on	13V

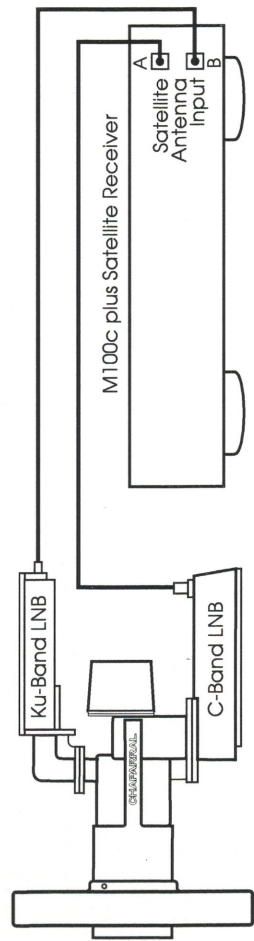
The following pages include several examples of switch configuration.

1. Press MENU **17** 6 to display the INSTALL B menu.



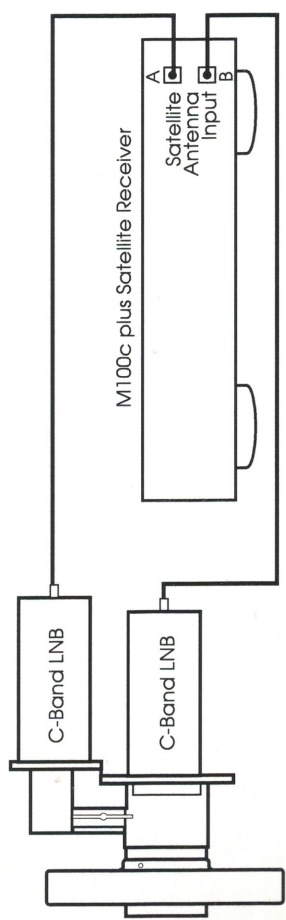
Use Input	Use Ext. Switch	Use LNB V	Active Switch Setting	Set LO Frequency to
A	None	17 V	1	5.1500 GHz

* Use Polarotor Database



Use Input	Use Ext. Switch	Use LNB V	Active Switch Setting	Set LO Frequency to
A	None	17 V	1	5.1500 GHz
B	None	17 V	2	10.7500 GHz

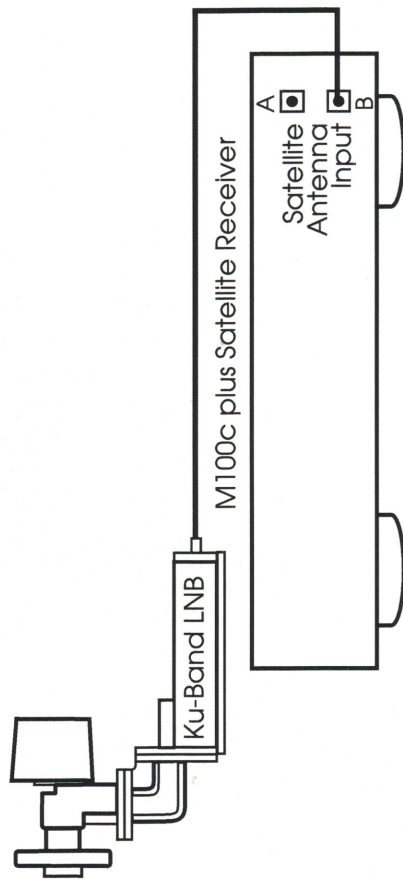
* Use Corotor Database



Use Input	Use Ext. Switch	Use LNB V	Active Switch Setting	Set LO Frequency to
A	None	17 V	1	5.1500 GHz
B	None	17 V	2	5.1500 GHz

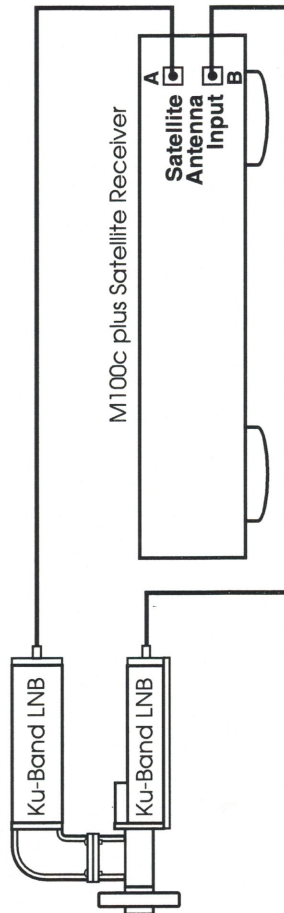
* Use Dual-C Database

* Various databases are available from your equipment supplier. Request the database that matches your system configuration. For example; Corotor, Polarotor, Bullseye II, etc.



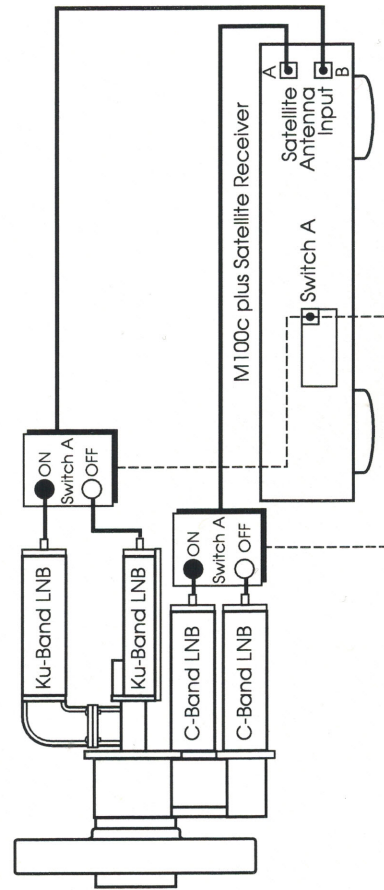
Use Input	Use Ext. Switch	Use LNB V	Active Switch Setting	Set LO Frequency to
B	None	17 V	2	10.7500 GHz

Use Ku-Polarrotor Database



Use Input	Use Ext. Switch	Use LNB V	Active Switch Setting	Set LO Frequency to
A	None	17 V	1	10.7500 GHz
B	None	17 V	2	10.7500 GHz

Use Dual Ku Database



Use Input	Use Ext. Switch	Use LNB V	Active Switch Setting	Set LO Frequency to
A	A/Off	17 V	1	5.1500 GHz
B	A/Off	17 V	2	10.7500 GHz
A	A/On	17 V	3	5.1500 GHz
B	A/On	17 V	4	10.7500 GHz

Use Bullseye II Database

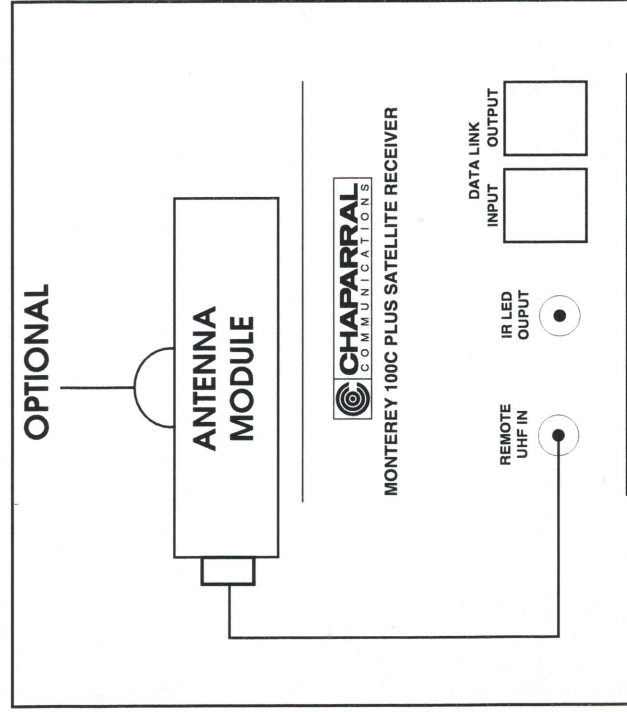
UHF Antenna Module

The optional UHF Antenna Module receives UHF signals from the remote control and sends them on to the receiver through the REMOTE UHF IN. See the diagram below for installation instructions.

Antenna Module Placement

- The Antenna Module may be placed near the receiver, preferably in a high location for best reception of remote control signals.
- Avoid placing the module behind the TV or other components which may block the remote control signals or cause interference.

- It may be necessary to try several locations to get the best UHF remote control operation. You can even try placing the Antenna Module in the attic.
- Typical range is approximately 100' within most buildings. By locating the Antenna Module between the receiver and the furthest distant viewing area, you can effectively increase the range.
- An extension wire with female and male stereo mini phone plugs can be used to connect the Antenna Module to the receiver if the wire supplied with the Antenna Module needs to be extended.



Modem Connection

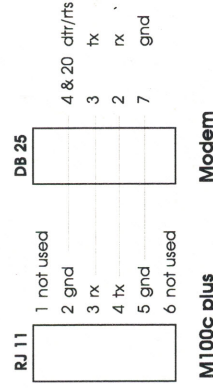
The M100c plus allows an external modem to be connected directly to the data input for easy remote operation. To operate correctly, the modem must be configurable for 9600 baud operation.

The M100c plus does not provide for an initialization string for the modem. In theory, any modem that can be configured with the following parameters and initialize itself from stored settings will work.

Baud Rate	9600
Error Correction	Off
Compression	Off
Auto Answer	On

Connect the modem to the receiver's Data Link Input jack on the receiver's rear panel. Check your RJ11 connector to ensure the pin configuration matches the diagram below.

Adapters to accomplish the connection are available in most computer stores.



The US Robotics 14,400 and 28,800 Sportster series has been successfully tested, and the following configuration is provided as an example.

- Change the dip switches on the back of the modem as follows.

1	2	3	4	5	6	7	8
down	up	up	up	up	up	up	down

- Connect your modem to a computer port on your computer or terminal for configuration.
- Use a terminal emulator to enter the following commands:
ATF0&N6&M0&K0&B1&C1S0=1
your modem should respond: OK
- Use the terminal emulator to enter the following commands:
AT&W0
your modem should respond: OK
AT -attention
&F0 -factory configuration, generic template
&N6 -connect speed 9600
&M0 -error control NORMAL
&K0 -disabled data compression
&B1 -fixed serial port rate
&C1 -track CD state from remote modem
S0=1 -answer on first ring
&W0 -writes current configuration to NVRAM templates

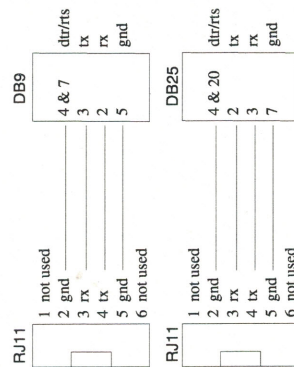
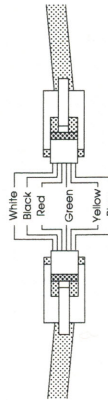
The modem is now configured correctly for operation with the M100c plus.

Computer Control

Your M100c plus has been designed to easily communicate with most personal computers. Through the use of your home computer you can program your receiver as you would with your Remote Control.

Description of Input

The M100c plus receiver will communicate with an external device through the data link connector. Communications can be achieved using any communications software package capable of the following port settings: BAUD RATE=9600, PARITY=NONE, DATA BITS=8, and STOP BITS=1.



The data link will accept ASCII input and parse the input into an executable command. The command string consists of leaders, functions, delimiters, parameters, and terminators.

Example Command Strings

- Function code:
#10 [Channel up]
- Function code and one parameter:
#36
[Audio_Right_Frequency 6.80 Mhz]
- Function code and two parameters:
#30 "ESPN"
["ESPN"]

Leader:

Pound sign "#"

Function:

Integer 234

Parameter:

Integer 1546

String "ESPN" NOTE: 12-character limit on names.

Delimiter:

End of a parameter space, tab, comma

Terminator:

End of command string CR, semicolon

Description of Output

Good message:

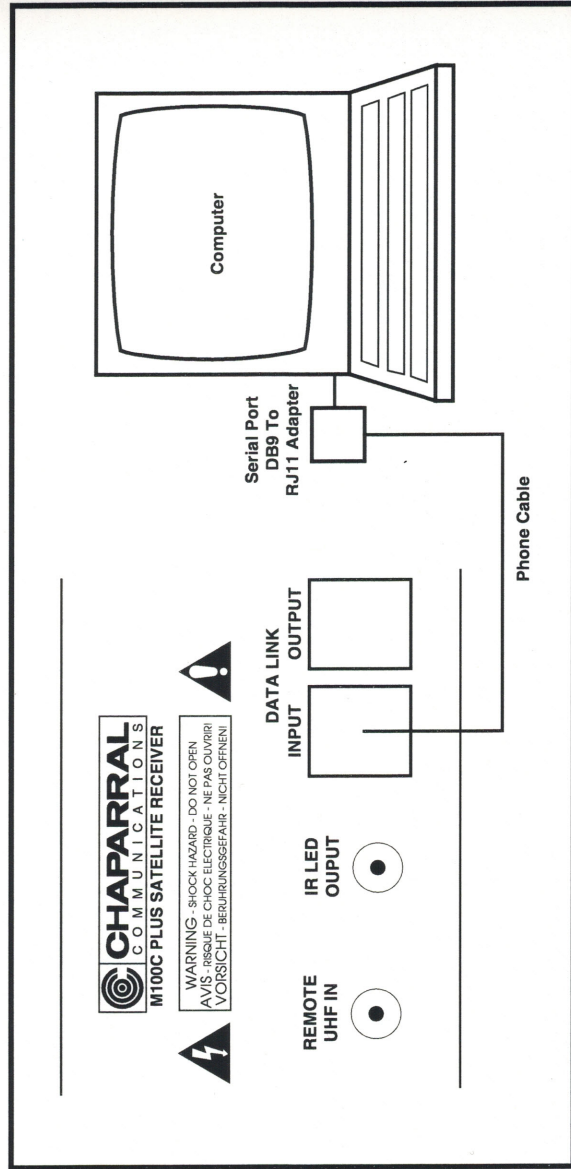
Every character is echoed back out the serial port.

Error condition:

If a message is invalid, a question mark [?] is echoed back out the serial port.



Note: For a list of current function codes used, please call our FAXability line at (408)435-1530.



Func Code	Command	Parameters	Func Code	Command	Parameters
41	Audio Deemphasis	{0=none, 1=50us, 2=75us, 3=17}	70	Go To Satellite Name	{"string"}
39	Audio Mode	{0=stereo, 1=mono}	75	Home Sat	{"Sat" "Chan" Hour Min MinTimeout
18	Audios, Return all	n/a	52	Limit East	{0-9999}
40	Bandwidth Audio	{0=narrow, 1=normal, 2=wide}	53	Limit West	{0-9999}
43	Bandwidth IF	{0=15Mhz, 1=27Mhz, 2=32Mhz}	46	LNB Voltage	{0=17v, 1=13v}
10	Channel Down	n/a	59	Longitude	{0-1800} {"EAST", "WEST"}
50	Channel Groups	{0-255}	111	Master Reset	{1} {""}
11	Channel Up	n/a	105	Rcvr. scratch pad	{"string"} [limit of 40 characters]
57	Contrast	{1-4}	17	Time in GMT	n/a
24	Channel, Return 1	/* ascii */	55	Mute	{0=Off, 1=On}
23	Channel, Return chans		30	Name Current Channel	"string"
67	Clock Set	{Yr Yrday Hour Min Sec}	29	Name Current Satellite	"string"
76	Comm RcvAddress Set	{0-99}	31	Number Channel	{0-99}
20	Database ASCII From Rcvr	n/a	14	Part Number	n/a
15	Database BIN From Rcvr	n/a	45	Polarity	{80-220}
16	Database BIN To Rcvr	n/a	68	Polarizer	{0=periodic, 1=continuous, 2=fer- rite}
44	Decoder Out	{0=flat, 1=deemph, 2=lowpass, 3=dmac}	54	Power	{0=Off, 1=On}
65	Event Load	{Yr Yrday Hour Min LenMin "Sat" "Chan"}	26	Qualifier Return Data	n/a
27	Event Status	n/a	63	Realign Dish Position	{0-9999}
35	Frequency Audio Left	{500-950 MHz}	25	Realign A2D Values	n/a
36	Frequency Audio Right	{500-950 MHz}			
34	Frequency Video	{950-20500 = 950.0-2050.0 MHz}			
72	Go To Audio Name	{"string"}			
71	Go To Channel Name	{"string"}			
73	Go To Channel Number	{0-99}			
51	Go To Dish Position	{0-9999}			

**Func
Code****Command****Parameters**

21	Satellite, Return sats	n/a /* ascii */
22	Satellite, Return 1	{OPTIONAL: block#} /* ascii */
32	Satellite, Set Position	{satblock#} {0-9999}
100	Screen Message	{1-11} "string"
60	Source Audio	{0=sat, 1=external}
62	Source Toggle	{0=sat, 1=external}
61	Source Video	{0=sat, 1=external}
47	Switch A	{0=off, 1=on}
48	Switch B	{0=off, 1=on}
49	Sync	{0=off, 1=on, 2=auto}
80	Tuner A/B	{0=A, 1=B input}
37	Video Format	{0=ntsc, 1=pal, 2=secam}
38	Video Invert	{0=off, 1=on}
56	Volume	{0-20}

Return Status**(#14) Database Name**

dbName: "100P 961031 64C"

Database Name {"100C PLUS: 961031 64C"}

(#22) Global

gbl: 0 1 1 27 5000 4280 5220 01-01-95 001 00:27:15 GMT

DishStatus{0=Done, 1=Moving, 2=Brake,
3=Error}**Power**

{0=Off, 1=On}

Mute

{0=Off, 1=On}

Volume

{0-37}

DishPosition

{0-9999}

East Limit

{0-9999}

West Limit

{01-01-95}

Date

{1-365}

Day of Year

{00:27:15}

GMT Time**(#22) Satellite**

sat: "G2" 4473 074.0W

Name

"G2"

Database position

{0-9999}

Longitude

{0-180.0E/W}

(#24) Video Channel

chn: 01 "SPORTS NY" 14300 100 680 680 x58 xA9 x60 x04 x00

Number

{1-99}

Name

"SPORTS NY"

IF Freq

{950.0 - 2250.0 MHz}

Polarity

{80-220}

Left Audio Freq

{500-950}

Right Audio Freq

{500-950}

Data 0

{x00-xFF}

Data 1

{x00-xFF}

Data 2

{x00-xFF}

Data 3

{x00-xFF}

Group

{x00-x0F}

(#18) Audio Channel

chn: 21 "SOFT ROCK" 10300 095 522 540 x48 x08 x60 x04 x00

Number

{1-99}

Name

"SOFT ROCK"

IF Freq

{950.0 - 2250.0 MHz}

Polarity

{80-220}

Left Audio Freq

{500-950}

Right Audio Freq

{500-950}

Data 0

{x00-xFF}

Data 1

{x00-xFF}

Data 2

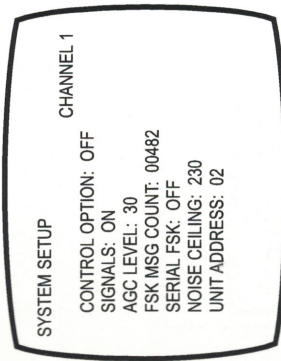
{x00-xFF}

Data 3

{x00-xFF}

Group

{x00-x0F}



The SYSTEM SETUP menu is accessible only by pressing MENU and the number 9 on the numeric keypad.

The SYSTEM SETUP menu contains configuration information not generally adjusted by the user. The menu above shows the default settings for a receiver shipped directly from Chaparral.

Unit Address

Should your remote control not operate with your receiver, check the UNIT ADDRESS setting in this menu. The UNIT ADDRESS number in the menu must match the unit address dialed in on the back of the remote control. If the two do not match, use a screwdriver to adjust the remote control's address.

AC voltage switch	9	erasing	audios (see channels).....	26	naming	channels	22	timer	cancelling events	35
actuator	5, 9		channels	26		groups	23		setting events	35
audio			satellites.....	33		satellites.....	23		summary	35
adjusting	13	favorite	channels	30		operation, basic.....	12, 13		operation	35
erasing	26		groups	29		password	25		troubleshooting	46-48
input (source)	16		music (audios).....	30	polarity				UHF antenna module	39
naming	22		satellites.....	30		adjustment	11, 14		unit address	43
selecting	12		front panel	3		shift	11, 14		uplink parameters, setting	24
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dish position.....	14, 32		bandwidth	15		quick start	9-11		autotune	32
polarity	32		frequency	18		realign (dish).....	19		outputs	15
video frequency	14, 32		inst-track	11	satellite	remote control	6, 7			
background			IR emitter	45		adding	31			
dish	20		limits, setting.....	9		adjusting	32			
menu	20		load database	10		autotune	32			
back panel.....	4, 5		LO (local oscillator).....	36		erasing.....	33			
baseband/video filter	4, 15		longitude.....	18		inst-track	11			
channels			memory card			naming	23			
adding	26, 27		updating	8		peaking.....	32			
adjusting	13, 34		using	8		scanning	31			
erasing.....	26		menus			selecting	13			
free memory.....	19		main	14		safeguards.....	1-2			
naming.....	22		1. Channel.....	14		setup (see quick start).....	9-11			
numbering.....	22, 34		2. Video.....	15		specifications	49-51			
scanning	26		3. Audio.....	16		switch configuration	36			
selecting	13		4. Favorite	17		switch options	37-38			
computer	40		5. Install A.....	18		sync.....	15			
control pad.....	12		6. Install B	19	time/date					
database			7. Install C	20		adjusting	21			
loading	10		modem	39		line frequency	18			
saving	28		master clear	48		setting.....	21			
updating	28									
date (see time/date)	21									