

# INSTALLER GUIDE

# ORION



SATELLITE SYSTEM

# SAFETY INFORMATION

**DANGER! Avoid Powerlines!** When following the instructions in this guide to install and connect the satellite antenna and connections, take extreme care to avoid contact with overhead power lines, lights and power circuits. Contact with power lines, lights, and power circuits may be fatal.

**CAUTION** Before connecting the DSS® receiver, read the Safety Information that came packed with the DSS® receiver.

## Outdoor Dish Antenna Grounding

The outdoor dish antenna used to receive satellite signals and the cable used to connect the outdoor dish antenna to the indoor receiving unit are required to comply with local installation codes and the appropriate sections of the National Electrical Code (NEC), especially Articles 250, 810 and 820. These codes require proper grounding of the metal structure of the outdoor dish antenna and grounding of the connecting cable at a point where it enters the house (or other building). If you are having a professional installer make the installation, the installer must observe installation codes in making the installation. The *DSS® System Self-Installer's Kit* contains instructions on how to make the installation in compliance with the National Electrical Code (NEC). If additional local installation codes apply, contact local inspection authorities.

## Compliance with National Electrical Code

Before installing the DSS® System, check the electrical code guidelines in your area.

## Restrictions

Before installing your dish, check the zoning codes, covenants and community restrictions in your area. Some rules prohibit installing large satellite dishes, but may allow small ones. Also, there may be restrictions in your area that limit the mounting height of dishes.

If you encounter homeowner or community restrictions, call 1-800-679-4776. Personnel at this number can provide information that may be helpful when attempting to obtain permission to install a DSS® system on your property.

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# FIRST THINGS FIRST

## An Introduction

Hi, my name is Mark and I wrote this DSS® System Installation Manual. You probably weren't expecting a personal introduction, but then, this digital satellite system was designed to give you more than you expected.

Installing the dish isn't too complicated, but you should know that the self-installation route is not for everyone. If you have some home improvement or construction experience, you should be able to complete the job safely and securely.

**1 FIRST THINGS FIRST**



**2 SOME INDOOR STUFF**



**3 SOME OUTDOOR STUFF**



**4 TESTING THE SYSTEM**



**5 MOUNTING THE MAST**



**6 FINAL APPROACH**

# FIRST THINGS FIRST

## INSTALLATION OVERVIEW

The manual is organized into sections that need to be performed in the order they are presented.

**First Things First.** This chapter gives you the information you'll need to find out whether you really want to tackle the DSS® System installation yourself. You'll also perform a rough site survey to see if your property has one or more locations with a clear line of sight to the satellite.

**Some Indoor Stuff.** Takes you through the steps for hooking up the DSS® receiver to your TV and using the on-screen menu system to find the dish pointing coordinates for your location. You'll also set the dish to point to the correct elevation (up-and-down direction) for your location.

**Some Outdoor Stuff.** You'll perform a second, more precise site survey, to identify all the potential mounting sites on your property. You'll also identify various mounting options and estimate the cabling requirements.

**Testing The System.** (This is an optional, but recommended section.) Walks you through the steps needed to set up a temporary mounting site, connect cables, and point the dish to receive the satellite signal.

**Mounting the Mast.** In this chapter, you'll actually mount the dish mast to the mounting surface. This is where the rubber meets the road, as they say. Or, to be more precise, where the drill bit meets the house.

**Final Approach.** Takes you through the steps needed to complete the dish installation and point the dish to receive the strongest possible satellite signal.

**And The Rest Of The Manual?** A series of appendices to be used as reference material. Topics include Troubleshooting, Connecting the receiver to a Phone Jack, and Warranty Information.

While testing the system is optional, it could save you a lot of time and effort.

# FIRST THINGS FIRST

## THE FIRST BIG QUESTION: SHOULD I DO THIS MYSELF?

While the installation is not difficult, it does require that you have some experience in electrical wiring and minor construction techniques. Also, you may have to climb a ladder, so you'll want to be comfortable working with heights.

**Question:** Have you installed any of these home products or completed tasks similar to them?

- TV antenna outside your house
- ceiling fan
- basketball goal
- dimmer switch
- garage door opener

If the answer is **YES**, then you can be reasonably confident that you can install the Digital Satellite System yourself.

If the answer is **NO**, then this is probably not the time to learn. Consider contacting your local authorized DSS® retailer to recommend a professional installer.

## SECOND BIG QUESTION: DO I HAVE A CLEAR LINE OF SIGHT TO THE SATELLITE?

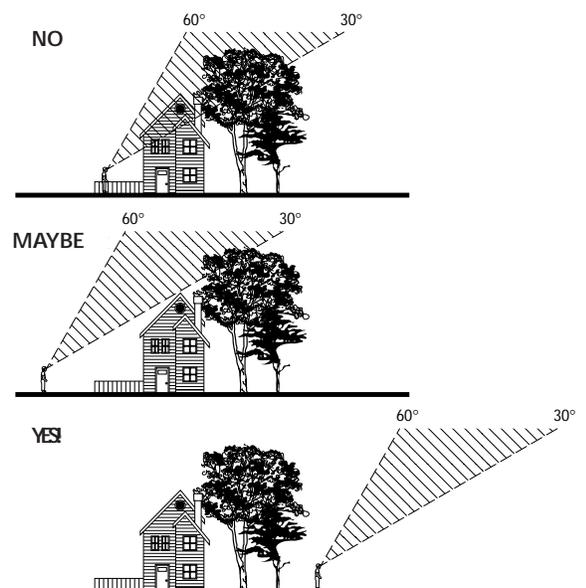
Assuming you're still interested in installing the dish yourself, the most important step is to find at least one site on your property to mount the dish. The dish must have a clear view to the satellite, which means that between the dish and the satellite there can be

- **NO** trees, now or in future seasons
- **NO** buildings or structures.

To find out if you can install the dish on your property, you need to make a general site survey.

### General Site Survey

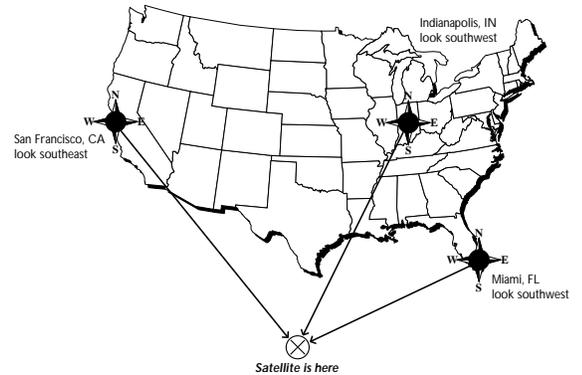
To receive the DSS® signal, the dish must be pointed directly at the satellite; that means the dish will be pointed to the correct elevation (up and down direction) and azimuth (side-to-side). Again, there must be **NO** obstructions between the dish and the satellite.



# FIRST THINGS FIRST

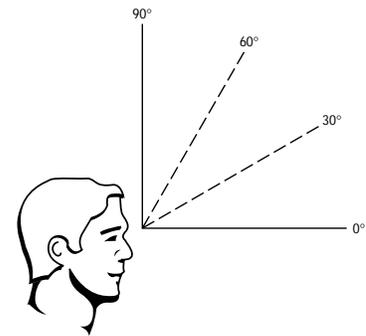
## Where Is The Satellite, Anyway?

The satellite is always located south of Texas. That means if you live in Miami, you must have a clear line of sight to the southwest; if you live in San Francisco, you must have a clear line to the southeast.



## How High Up in the Sky is the Satellite?

Depending on where you live, the satellite will be at an elevation angle between 30 and 60 degrees. Southern states point more toward 60 degrees; northern states point more toward 30 degrees.



## Finding a Clear Line of Sight

1. Go outside and locate at least one site on your property that has a clear view to the satellite. You should be reasonably certain you are pointing toward Texas (unless you're in Texas, in which case you should be looking due south). You may want to use a map.
2. Imagine an arc ranging from 30 to 60 degrees above the horizon.
3. Do you have at least one clear view to the satellite? Remember, no trees, leaves, buildings, or windows can be between the dish and the satellite.

If the answer is **NO**, your site may be unsuitable for installing the DSS® system.

If the answer is **MAYBE**, you may want to contact a your local DSS® dealer for information about having a professional installer conduct a thorough site survey.

If the answer is **YES**, your site should be suitable for installing the DSS® system. Go ahead to the next section in this manual.

After you have decided on a site and begin the mounting procedure, you will perform a more accurate site survey using the DSS® on-screen menus to determine the precise azimuth and elevation settings for your location.

# FIRST THINGS FIRST

## UNPACK AND TAKE INVENTORY

Verify that the DSS® dish box contains these parts:

- mounting foot and mast assembly
- satellite dish
- LNB (Low Noise Block converter)
- LNB support arm
- hardware packet

LNB Mounting Hardware



1 Phillips head screw  
1 Retainer nut

Reflector Hardware

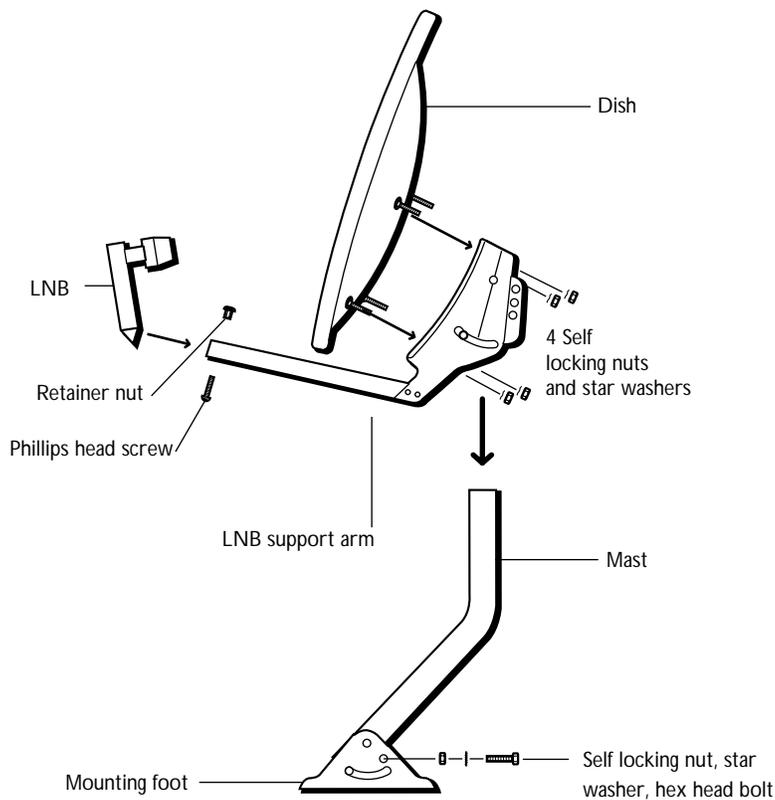


4 Self locking nuts  
4 Star washer

Grounding Hardware



1 Hex head bolt  
1 Self locking nut  
1 Star washer



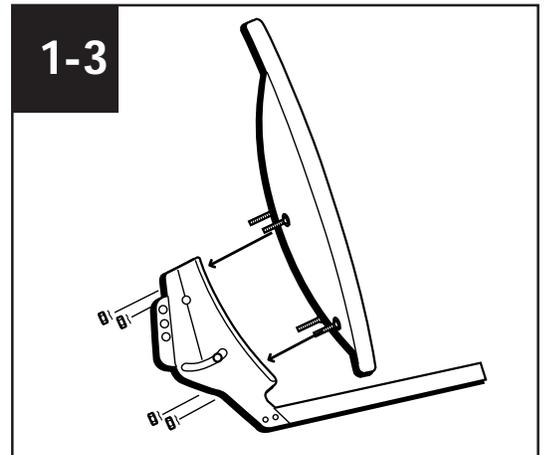
**Don't assemble the dish yet!**  
This diagram is to show you how you will put the dish together later.

# FIRST THINGS FIRST

## START PUTTING THE DISH TOGETHER

You won't completely assemble the dish in this section, but you will begin the assembly procedure.

1. Locate the satellite dish, the four self-locking nuts and four star washers that came in the hardware packet.
2. Place the dish on the LNB support arm by passing the four bolts on the back of the dish through the four holes on the support arm.
3. Attach the dish to the support arm as shown, using the four self-locking nuts and star washers. Use a 7/16" wrench to tighten the nuts.
4. Set the dish aside.



# SOME INDOOR STUFF

## WHAT'S TO DO INDOORS?

A fine question. Well, there are a few tasks you need to accomplish before you can go outside and install the dish.

First, you'll connect the DSS® receiver to your TV. One of the four connections scenarios shown should match your system. Then, you'll work on programming the remote to control your TV.

Next, you'll use the on-screen menu system to find out the dish pointing coordinates for your location. These coordinates, called elevation and azimuth, tell you where and how high up to point the dish. Finally, you'll begin the dish assembly and set the elevation.

## 1 FIRST THINGS FIRST



## 2 SOME INDOOR STUFF



## 3 SOME OUTDOOR STUFF



## 4 TESTING THE SYSTEM



## 5 MOUNTING THE MAST



## 6 FINAL APPROACH

### CAUTION

Do not stack electronic components on top of the DSS® receiver.

# SOME INDOOR STUFF

## CONNECTING THE DSS® RECEIVER

You'll need to connect your DSS® receiver to your TV and use the on-screen menu system to find the dish pointing coordinates for your location.

The following pages show four preferred methods of connecting the DSS® receiver to your TV. These connections differ based on the type of input jacks available on your TV: S-Video, audio/video, or RF. Simply choose one connection that best matches your setup and follow the directions on that page.

### JACKS AND CABLES

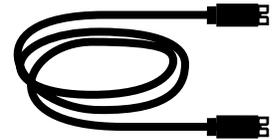
#### S-Video Jack and Cable (S-VHS)

The S-Video jack provides the best picture quality for your DSS® system.

This jack is available on many TVs and is used in conjunction with audio cables to connect the DSS® receiver to your TV. Remember also to connect the left and right audio cables because the S-Video jack carries only the picture signal, not the sound.



S-Video Jack



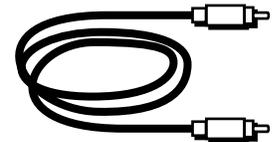
#### Audio/Video Jacks and Cables (RCA-type)

The audio/video jacks provide very good picture and stereo sound quality, and should be used if your TV has no S-Video jack.

These jacks are used for most audio/video connections between components. The DSS® receiver audio/video jacks are color coded (yellow for video, red for right audio, and white for left audio). If your TV has only one input for audio (mono), connect it to the right (red) audio jack on the DSS® receiver.



Audio/Video Jack



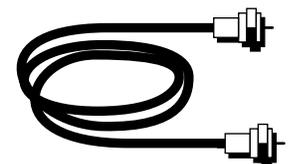
#### RF Jacks and Coaxial Cables (F-type)

The RF jacks provide good picture and mono sound quality, and are to be used if audio/video connections are not available for your TV.

These jacks are required for antenna or cable-TV connections. The RF jacks on the DSS® receiver are labeled IN FROM ANT and OUT TO TV. The coaxial cable supplied with your DSS® system is used to connect the RF jacks between the DSS® receiver and your TV's antenna input.



RF Jack



# SOME INDOOR STUFF

## CHOOSING A CONNECTION

The following pages show four examples of hookups commonly used to connect the DSS® receiver with a TV and other components. Refer to your TV and VCR Owner's Manuals for more information on hooking up your specific components.

### Connection A

Provides the best possible picture and stereo audio quality.  
To use Connection A, you must have:

- TV with S-Video input, plus separate RF and audio/video inputs (jacks).
- VCR with RF input and output
- S-Video, coaxial, and audio/video cables

### Connection B

Provides very good picture and stereo audio quality.  
To use Connection B, you must have:

- TV with separate RF and audio/video inputs (jacks)
- VCR with RF input and output
- Coaxial and audio/video cables

### Connection C

Provides good picture and mono audio quality.  
To use Connection C, you must have:

- TV with RF input (jack)
- VCR with RF and audio/video inputs
- Coaxial and audio/video cables

### Connection D

Provides good picture and mono audio quality.  
To use Connection D, you must have:

- TV with RF input (jack)
- Coaxial cables

The four types of connections shown work in most cases, but you may want to consult your TV or VCR User Guides for information specific to your brand and model.

# SOME INDOOR STUFF

## CONNECTION A

### BEST PICTURE AND SOUND QUALITY

To use this connection you must have:

- TV with separate RF, audio/video, and S-Video inputs (jacks)
- VCR with RF input and output
- Coaxial, audio/video, and S-Video cables

#### To connect TV, VCR and antenna or cable box.

1. Connect coaxial cables as shown.
2. Connect audio/video cables as shown.
3. Connect S-Video cable as shown.

#### To receive DSS® programming:

1. Tune TV to receive the S-Video output from the DSS® receiver.
2. Tune DSS® receiver to desired channel.

#### To receive off-air programming (no cable box):

1. Turn off VCR and DSS® receiver.
2. Tune TV to desired channel.

#### To receive off-air programming (with cable box):

1. Turn off VCR and DSS® receiver.
2. Tune TV to cable box output channel (usually CH2, CH3, or CH4).
3. Tune cable box to desired channel.

#### To record DSS® programming:

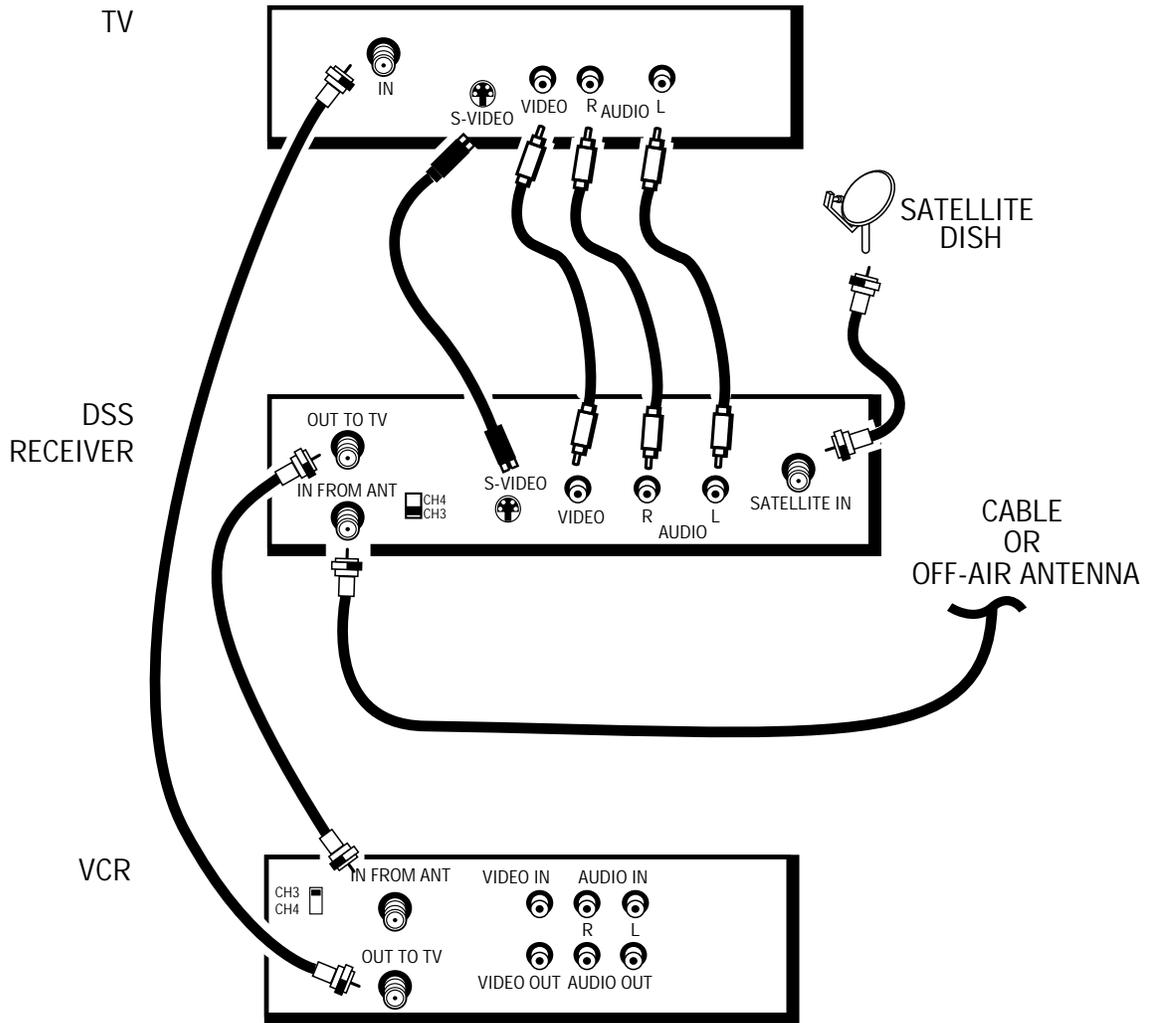
1. Tune TV to receive S-Video output from DSS® receiver.
2. Tune DSS® receiver to desired channel.
3. Set your VCR to record the DSS output channel (usually CH3 or CH4).

#### To view VCR programming:

1. Tune TV to VCR output channel (usually CH3 or CH4).

Cables needed for this connection: one (1) S-Video cable, six (3) audio/video cables. You must use RG-6 coaxial cable from the DSS® dish to the Satellite In jack on the DSS® receiver. For best picture quality, use RG-6 coaxial cable with all coaxial cable connections.

# SOME INDOOR STUFF



**CAUTION**  
Do not stack electronic components on top of the DSS® receiver.

# SOME INDOOR STUFF

## CONNECTION B

### VERY GOOD PICTURE AND SOUND QUALITY

To use this connection you must have:

- TV with separate RF and audio/video inputs (jacks)
- VCR with RF input and output
- Coaxial and audio/video cables

#### To connect TV, VCR and antenna or cable box.

1. Connect coaxial cables as shown.
2. Connect audio/video cables as shown.

#### To receive DSS® programming:

1. Tune TV to receive line output from DSS® receiver (often called Input 1).
2. Tune DSS® receiver to desired channel.

#### To receive off-air programming (no cable box):

1. Turn off VCR and DSS® receiver.
2. Tune TV to desired channel.

#### To receive off-air programming (with cable box):

1. Turn off VCR and DSS® receiver.
2. Tune TV to cable box output channel (usually CH2, CH3, or CH4).
3. Tune cable box to desired channel.

#### To record DSS® programming:

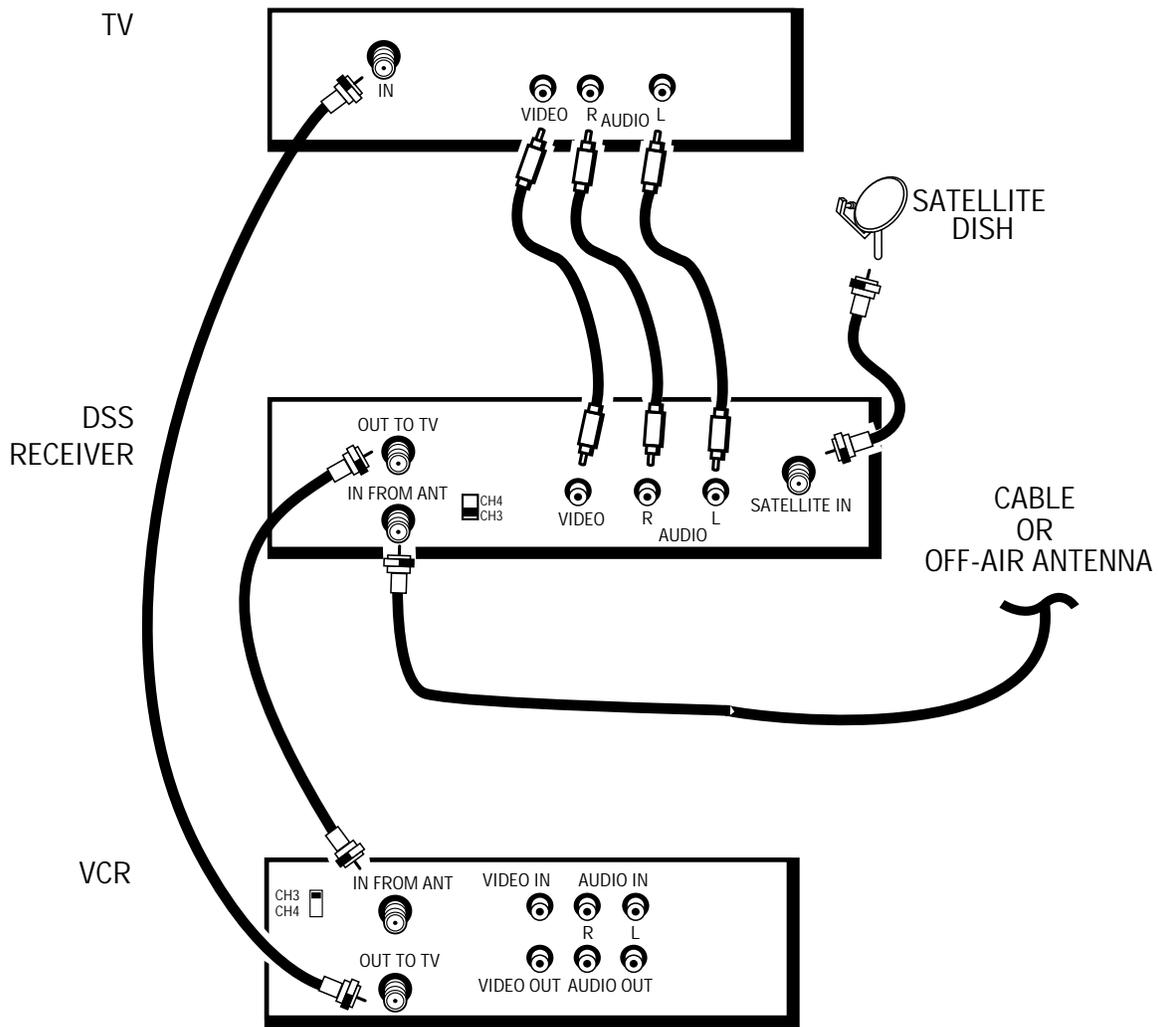
1. Tune TV to receive line output from DSS® receiver (Input1).
2. Tune DSS® receiver to desired channel.
3. Set your VCR to record DSS output channel (usually CH3 or CH4).

#### To view VCR programming:

1. Tune TV to VCR output channel (usually CH3 or CH4).

**Cables needed for this connection: six (3) audio/video cables. You must use RG-6 coaxial cable from the DSS® dish to the Satellite In jack on the DSS® receiver. For best picture quality, use RG-6 coaxial cable with all coaxial cable connections.**

# SOME INDOOR STUFF



## CAUTION

Do not stack electronic components on top of the DSS® receiver.

# SOME INDOOR STUFF

## CONNECTION C

### GOOD PICTURE AND SOUND QUALITY

To use this connection you must have:

- TV with RF input (jack)
- VCR with RF and audio/video inputs
- Coaxial and audio/video cables

#### To connect TV, VCR, and antenna or cable box.

1. Connect coaxial cables and audio/video cables as shown.

#### To receive DSS® programming:

- Tune TV to channel 3 or 4 (depending on how you set the CH3/CH4 switch on the back of the receiver).

#### To receive off-air programming (no cable box):

1. Turn off VCR and DSS® receiver.
2. Tune TV to desired channel.

#### To receive cable programming (with cable box):

1. Turn off VCR and DSS® receiver.
2. Tune TV to cable box output channel (usually CH2, CH3, or CH4).
3. Tune cable box to desired channel.

#### To record DSS® programming:

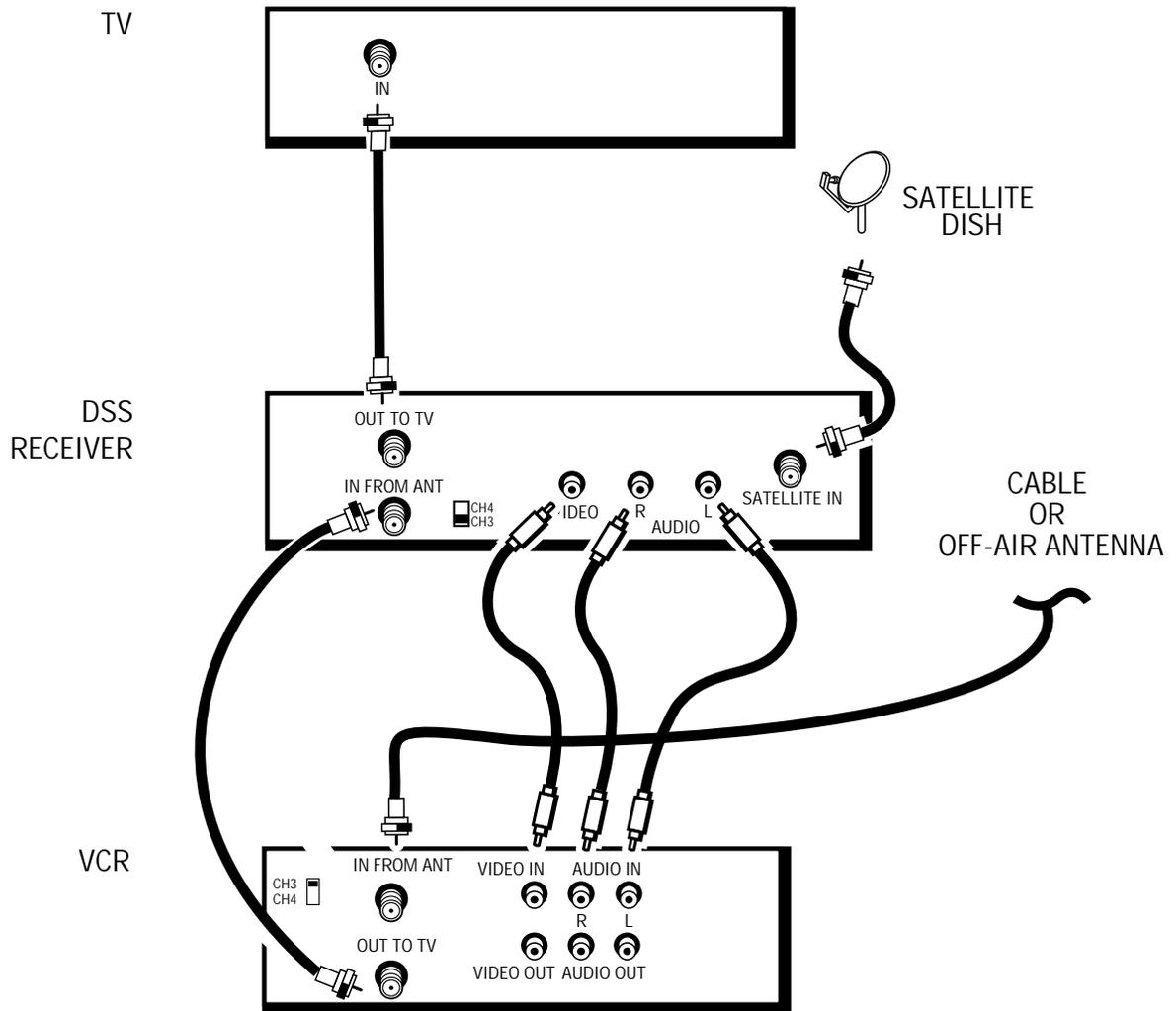
1. Tune TV to the channel on which you receive the DSS® signal.
2. Tune DSS® receiver to desired channel.
3. Set VCR to record on line input.

#### To view VCR programming:

1. Tune TV to VCR output channel (usually CH3 or CH4).
2. Turn DSS® receiver off.

Cables needed for this connection: three (3) audio/video cables. You must use RG-6 coaxial cable from the DSS® dish to the Satellite In jack on the DSS® receiver. For best picture quality, use RG-6 coaxial cable with all coaxial cable connections.

# SOME INDOOR STUFF



## CAUTION

Do not stack electronic components on top of the DSS® receiver.

# SOME INDOOR STUFF

## CONNECTION D

### GOOD PICTURE AND SOUND QUALITY

To use this connection you must have:

- TV with RF input
- Coaxial cables

#### To connect TV and antenna or cable box:

1. Connect coaxial cables as shown.

#### To receive DSS® programming:

- Tune TV to channel 3 or 4 (depending on how you set the CH3/CH4 switch on the back of the receiver.

#### To receive off-air programming (no cable box):

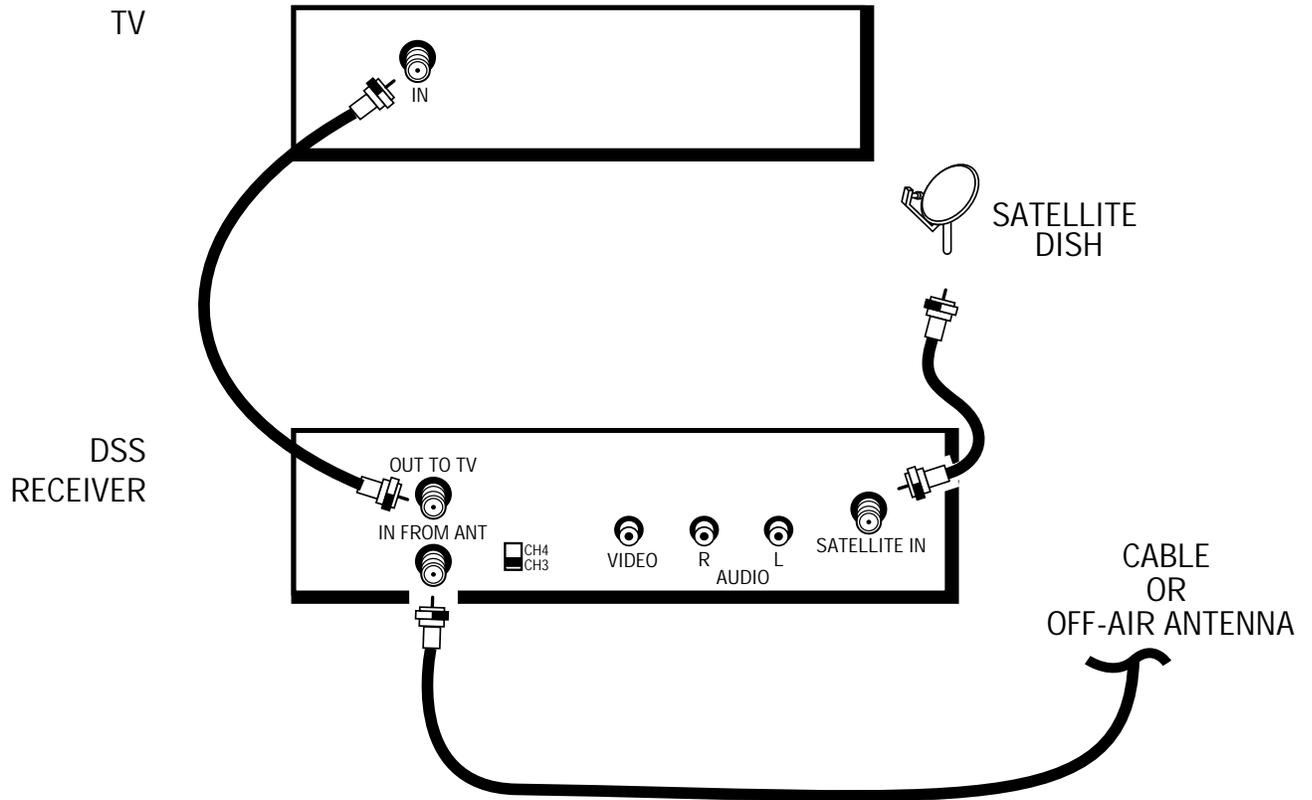
1. Turn off DSS® receiver.
2. Tune TV to desired channel.

#### To receive cable programming (with cable box):

1. Turn off DSS® receiver.
2. Tune TV to cable box output channel (usually CH2, CH3, or CH4).
3. Tune cable box to desired channel.

**Cables needed for this connection:**  
You must use RG-6 coaxial cable from the DSS® dish to the Satellite In jack on the DSS® receiver. For best picture quality, use RG-6 coaxial cable with all coaxial cable connections.

# SOME INDOOR STUFF



## CAUTION

Do not stack electronic components on top of the DSS® receiver.

# SOME INDOOR STUFF

## PROGRAMMING THE DSS® REMOTE TO CONTROL YOUR TV

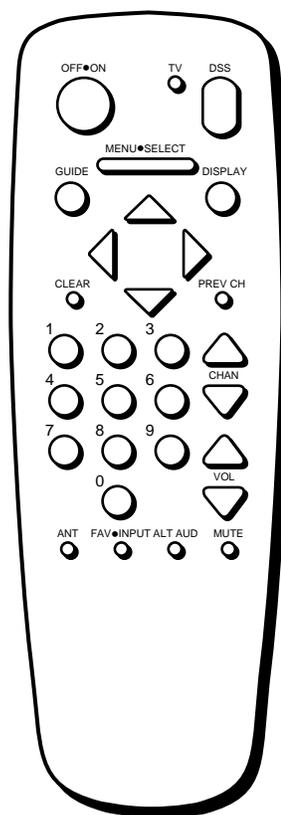
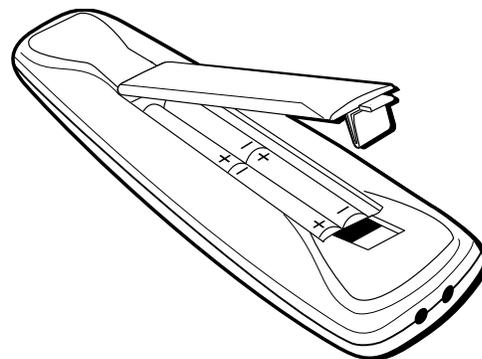
In a few pages, you'll use the DSS® receiver's menu system to find the dish pointing coordinates for your location. You'll probably find it easier if you use the DSS® remote instead of the receiver's front panel buttons, so you need to make sure the remote has batteries and is working correctly.

1. Install four AAA batteries into the DSS® remote control. Open the battery compartment and match the + and – end of each battery to the markings in the compartment. Replace the cover.
2. Determine whether the DSS® remote needs to be programmed by pointing the remote at the TV and pressing the TV button. Press CHAN UP or DOWN to see whether the TV responds to the remote commands. If the TV does not respond, you need to program your remote. Here's how:
3. Look up your TV's brand and code number(s) on the TV Code list on the following page.
4. Press and hold the TV button.
5. Enter the three-digit code from the code list.
6. Release the TV button and press POWER or CHAN UP/DOWN to see if the TV responds to the remote commands. If it doesn't, try the next code listed for your brand.
7. Repeat steps 4 through 6 until the TV responds to the remote commands.

### Using the Remote: The Point & Select Rule

You only need to know one rule to use the DSS® system: Point and Select. The Point and Select method has two steps.

1. Point by pressing the arrow keys on the remote. Pressing the arrows keys (referred to as the "arrows") moves the on-screen highlight to different items in the Program Guide and the menu screens. Pressing an arrow once moves the highlight one space in the direction of the arrow.
2. Select a highlighted item by pressing the MENU•SELECT button on the remote. Selecting an item tells the menu system to go ahead and make the change you have indicated.



# SOME INDOOR STUFF

## TV Code List (for programming the DSS® remote)

A-Mark .....	102	JBL .....	013	Radio Shack .....	000, 021, 025, 036, 037, 059, 064, 078
Admiral .....	005	Jensen .....	011, 027	RCA .....	000, 006, 011, 019, 027, 034, 038, 044, 046, 072, 088, 100, 101, 109
Amtron .....	064	JVC .....	012, 024, 036, 037, 040, 048, 051, 074	Realistic .....	021
Akai .....	002, 103	Kawasho .....	002, 011, 027	Sampo .....	011, 027
Anam .....	104, 105	Kenwood .....	006, 011, 014, 027	Samsung ...	006, 011, 014, 015, 019, 027, 036, 037, 077, 110
Anam National .....	038, 106	Kloss Novabeam .....	035, 043	Sanyo .	017, 021, 039, 056, 057, 058
AOC .....	011, 019, 027, 088, 107	KTV .....	078	Scott .....	028, 037, 064
Bell&Howell .....	005	Loewe .....	013	Sears .....	000, 006, 011, 014, 017, 018, 021, 023, 027, 039, 040, 041, 051, 071, 083, 095
Candle .....	011, 027, 033	Luxman .....	011, 027	Sharp .....	011, 020, 025, 027, 037, 052,053, 059, 060, 108
Citizen .....	011, 027, 033, 064	LXI .....	000, 013, 018, 021, 023, 054	Signature .....	005, 094
Colortyme .....	011, 027, 084	Magnavox .....	006, 007, 010, 011, 013, 016, 027, 033, 035, 043, 049, 066, 087, 089	Sony .....	002
Concerto .....	011, 027	Marants .....	013	Soundesign .....	011, 027, 033
Contec/Cony .....	036, 037, 040, 042,064	Marantz .....	011, 013, 027, 069	Sylvania ....	006, 007, 010, 011, 013, 016, 027, 033, 035, 043, 049, 066, 087, 089
Craig .....	064	Memorex .....	005	Symphonic .....	064, 076
Curtis Mathes .....	000, 011, 015, 027, 037	MGA .....	006, 011, 014, 019, 022, 027, 041, 056, 061, 068	Tatung .....	038
CXC .....	064	Mitsubishi .....	006, 011, 014, 019, 022, 027, 041, 055, 056, 061, 068	Technics .....	012
Daewoo .....	011, 019, 027, 0112	MTC .....	011, 019, 027	Techwood .....	011, 027
Daytron .....	011, 027	Multivision .....	081	Teknika ....	011, 019, 027, 033, 036, 037, 040, 066
Dimensia .....	000	NAD .....	018, 023	Telecaption .....	090
Electrohome .....	006, 011, 014, 027,038, 061, 068	NEC ....	011, 014, 019, 027, 038, 084	TMK .....	011, 027
Emerson ...	011, 026, 027, 028, 029, 030, 031, 032, 037, 042, 053, 064, 065, 067, 075, 076, 078, 079, 094, 095, 096	Panasonic ....	012, 013, 038, 086, 111	Toshiba ....	018, 021, 023, 040, 071, 077, 085, 090
Envision .....	011, 027	JC Penney .....	000, 008, 011, 019, 027, 040, 068, 077, 086, 088	Universal .....	008, 009
Fisher .....	017, 021, 039, 041	Philco .....	006, 007, 010, 011, 013, 016, 019, 027, 033, 035, 037, 038, 043, 087, 089	Vidtech .....	019, 027
Funai .....	064	Philips .....	002, 006, 007, 010, 011, 013, 016, 033, 035, 037, 038, 043, 066, 073	Wards .....	000, 005, 006, 007, 008, 009, 010, 011, 013, 019, 025, 027, 028, 035, 043, 059, 066, 076, 082, 089
GE ....	000, 008, 009, 011, 012, 027, 038, 068, 086, 089, 091	Pioneer .....	011, 027, 045, 062, 093	Yamaha .....	006, 014, 019, 027
Goldstar .....	003, 004, 006, 011, 019, 027, 037, 050	Portland .....	011, 019, 027, 037	Zenith .....	001, 099
Hallmark .....	011, 027	ProScan .....	000		
Hitachi .....	009, 011, 027, 036, 037,040, 047, 048, 063, 080, 094, 097,098	Proton .....	011, 027, 037, 072		
Infinity .....	013	Quasar .....	012, 038, 092		

# SOME INDOOR STUFF

## USING THE SETUP MENU TO FIND THE ELEVATION AND AZIMUTH

The DSS® receiver is preprogrammed to give you the coordinates for pointing your dish at the satellite. All you have to do is enter your zip code. First, plug in your DSS® receiver.

### Setup

The first time that you turn on the receiver, you are shown the Setup menu. The Setup menu features an interactive setup routine that guides you through the steps needed to obtain and fine-tune your signal.

To access the Setup menu after the initial startup:

1. Press MENU•SELECT to bring up the Main menu.
2. Point to Assistance and press MENU•SELECT.
3. Choose *Setup* and press MENU•SELECT.

### Pointing the Dish

The first few Setup menu screens describe the interactive setup procedure. To find out where you need to point the dish, select *Find Coordinates*.

There are two methods for obtaining the elevation and azimuth but you only need to use one:

- Enter your zip code  
or
- Enter your latitude and longitude.

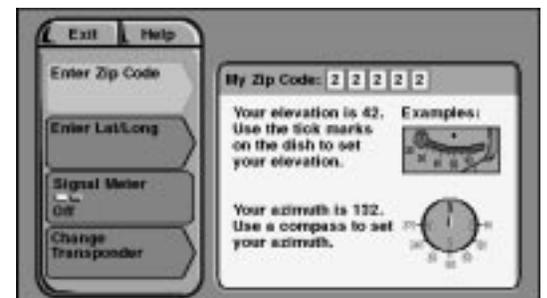
Record the elevation and azimuth numbers. (You may want to bend the corner of this page so you can refer to it easily.)

Elevation:

Azimuth:

Turn off the DSS® receiver and unplug it.

Proceed to the next step, Set the Elevation on the Dish.

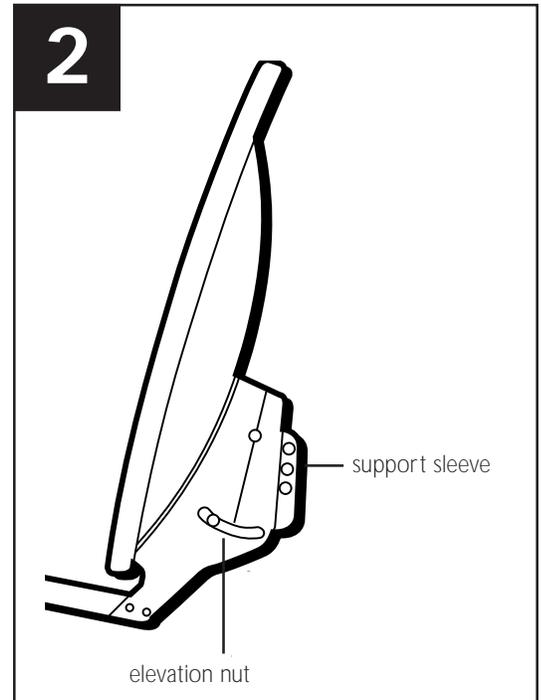


# SOME INDOOR STUFF

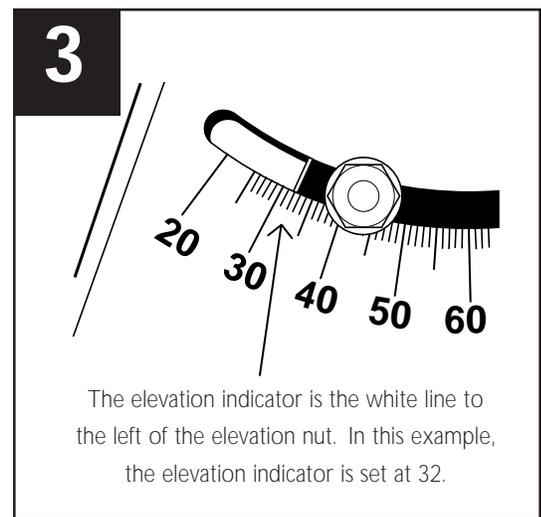
## SET THE ELEVATION ON THE DISH

The first part of the dish pointing process is to set the dish to point up toward the satellite. This is called “setting the elevation.”

1. Locate the dish and support arm.
2. Loosen the two elevation nuts so the support sleeve can rotate easily.



3. Rotate the support sleeve so that the white elevation indicator lines up with the tick mark corresponding to elevation setting you recorded on the previous page.



4. Tighten both nuts.



# SOME OUTDOOR STUFF

You're finally ready to install the dish, right? Sorry, not just yet. First you have to select the best mounting site. You may already know where you want to mount the dish, but it's a good idea to examine all the options. Here's an overview:

First you'll make a precise site survey to find the exact places where the dish can be installed with a clear line of site to the satellite. (You'll use the elevation and azimuth numbers that you wrote down in the last chapter.) Next, based on your site survey, you'll identify the different mounting options and estimate cable requirements. After all of that, you'll have a good idea where to install the dish.

## 1 FIRST THINGS FIRST



## 2 SOME INDOOR STUFF



## 3 SOME OUTDOOR STUFF



## 4 TESTING THE SYSTEM



## 5 MOUNTING THE MAST



## 6 FINAL APPROACH

A compass is required for this section.

# SOME OUTDOOR STUFF

## PRECISE SITE SURVEY

In Chapter 1, you conducted a general site survey to find the location or locations that will provide the dish with a clear line of site to the satellite. Now you'll use a compass to make a more precise survey.

### Using a Compass to Find the Satellite

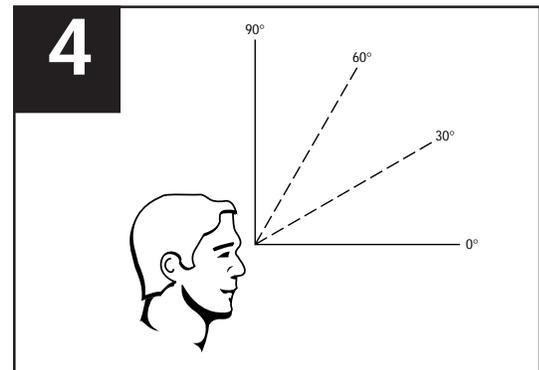
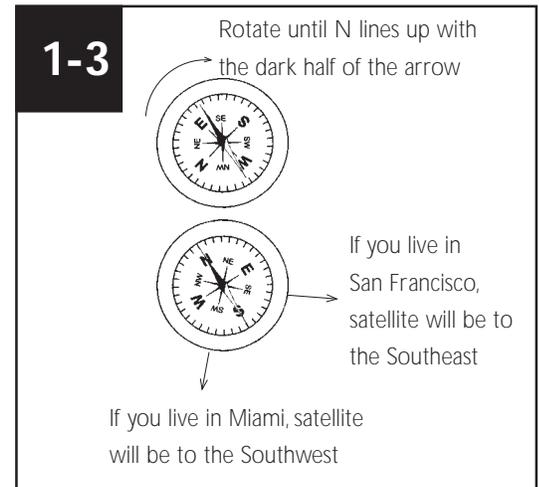
1. Go outside and hold the compass flat in the palm of your hand. Hold your hand still until the needle stops moving (the dark or colored half of the compass needle always points north).
2. Rotate the compass so that the "N" (for north) is directly under the dark part of the compass needle. Your compass is now aligned with north. The tick marks around the edge of the compass represent azimuth degrees.
3. Locate the tick mark on the compass that corresponds to the azimuth number you wrote down on page 22. (Don't you wish you had dog-eared that page?) Point your arm in the direction of your azimuth setting.
4. Raise your arm to approximately the elevation angle you wrote down on page 22.
5. Repeat this survey in several places on your property.

### Remember...

To get a signal, the DSS® dish will have to be pointed directly at the satellite, with NO obstructions between the two. This means NO trees and NO buildings. Take into consideration future tree growth, house remodeling or additions and new construction in your area.

The satellite signal WILL NOT PASS through leaves or branches.

The satellite signal WILL NOT PASS through glass; don't try to install your dish indoors!



Try to keep the compass away from any metal objects. Metal objects can cause inaccurate compass readings.

# SOME OUTDOOR STUFF

## ANOTHER SITE SURVEY?

You've gone through the site survey once already, but experience tells us this second survey is crucial.

## DO YOU HAVE A SUITABLE LOCATION?

Based on the site surveys you made in the previous section, do you have a clear view to the satellite from at least one location on your property?

### NO, I have no clear view to the satellite.

Your site may not be suitable for installing the DSS® system. A professional installer may have an alternative solution—consider contacting your DSS® System dealer to find the name of an authorized DSS® System installer.

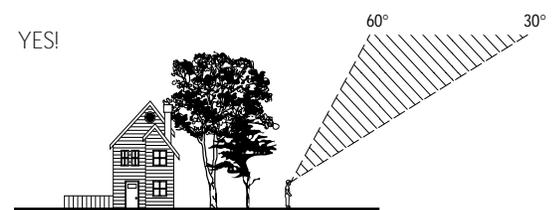
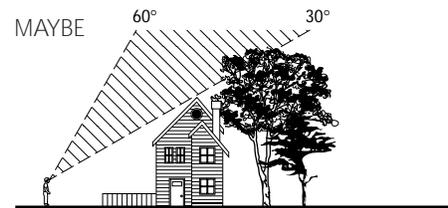
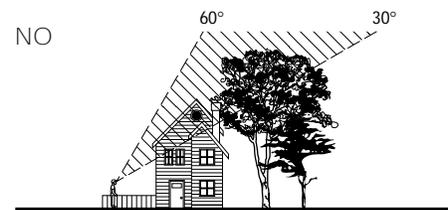
### Maybe YES, Maybe NO.

If you're not certain whether you have a clear view to the satellite, you have two choices :

- Continue with the installation and verify that you a clear view to the satellite by testing the system (explained in Chapter 4).
- Contact your DSS® System dealer to find the name of an authorized DSS® System Installer. The installer can help you verify that your property is suitable for installing the DSS® system.

### YES, I Have A Clear View to the Satellite

Your site should be suitable for installing the DSS® system. Continue to the next section.



**WARNING:** Do NOT install the dish near power lines, electric lights or power circuits. Contact with power lines, lights or power circuits may be fatal. It is recommended that the dish be located more than 20 feet from overhead power lines.

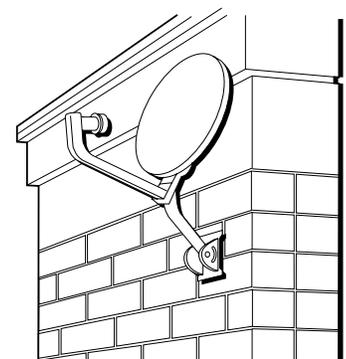
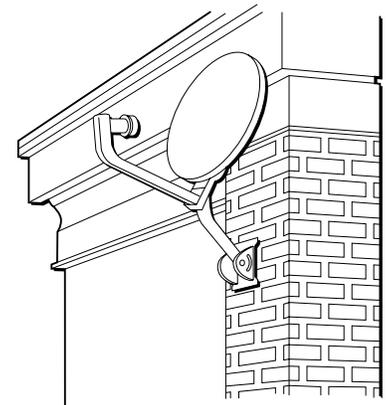
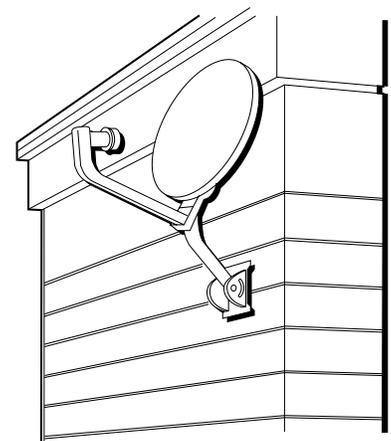
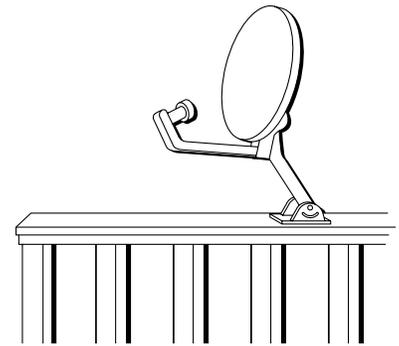
# SOME OUTDOOR STUFF

## CHOOSING A MOUNTING SURFACE

Once you have identified the site (or sites) for mounting the dish, you need to choose a mounting method. The method for mounting the dish depends on where you want to mount the dish and the type of mounting surface. You can install the dish on several surfaces:

- **Wall Studs or Solid Wood** This is the simplest mounting method. However, if you choose to mount the dish on a deck railing, pick a site that will not be used for a handrail.
- **Lap Siding** (You may need to install spacers underneath the dish mounting foot to keep the foot level.)
- **Brick or Poured Concrete**
- **Hollow Brick or Cinder Block Wall**

Keep in mind—you may need to brush snow or ice off the dish. The dish should not be mounted in a dangerous or inaccessible place.



# SOME OUTDOOR STUFF

## OTHER MOUNTING OPTIONS

- **Pole Mount**

A pole mount is good if you want or need to install the dish some distance away from your house. You may need supporting guy wires if the pole extends too far above the ground.

Do not use a pole mount in wet or marshy areas.

- **Chimney Mount**

You will need to purchase a special chimney mount kit. (See your DSS® dealer for more information.)

Use the chimney *only* if you cannot locate a mounting site on the side of your house, on your deck or patio, or on a pole in your yard.

Your chimney must be sturdy and in good condition. High winds can put great strain on the dish and the chimney itself.

To prevent heat or soot damage, there must be enough room for the dish to be mounted without extending above the top of the chimney.

Keep in mind—you may need to brush snow or ice off the dish. The dish should not be mounted in a dangerous or inaccessible place.

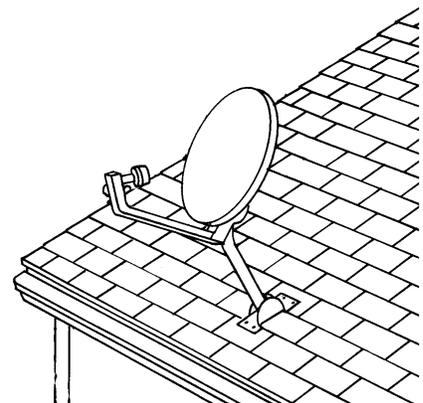
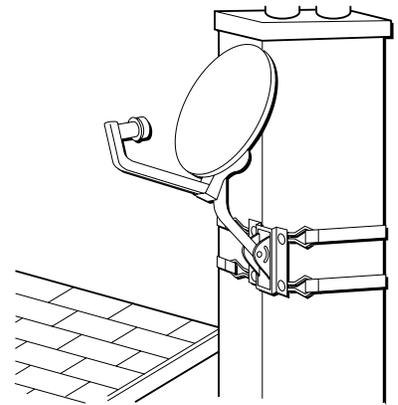
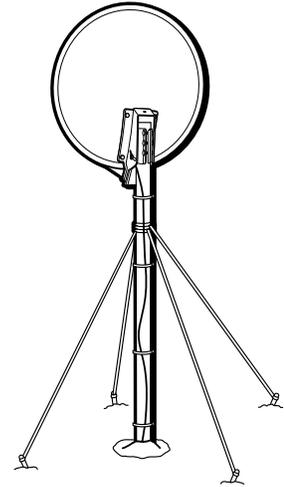
- **Roof Mount**

***Use the roof mount only as a last resort.*** You can damage your roof and cause leaks by sealing the mounting holes improperly.

Problems with roof installations increase with the age of the roof and the type of roofing materials.

DO NOT mount the dish on slate or shake shingles.

Keep in mind—you may need to brush snow or ice off the dish. The dish should not be mounted in a dangerous or inaccessible place.



# SOME OUTDOOR STUFF

## ABOUT GROUNDING THE SYSTEM

Now that you've selected your permanent mounting site (or narrowed it down), you need to determine where you'll run the RG-6 coaxial cables and how you'll ground the DSS® system.

Grounding the DSS® system to the central building ground helps protect the DSS® system and other components from lightning damage. Dish installation should comply with local codes and the National Electrical Code (NEC). Grounding the DSS® system is something you can probably do yourself. But if you're not sure, you should contact a qualified electrician.

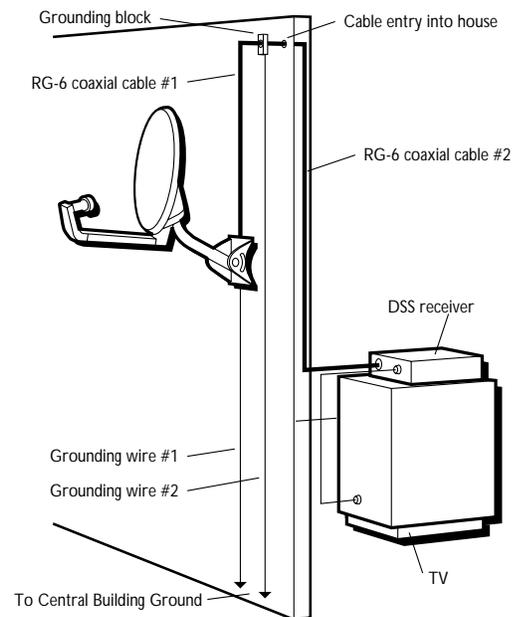
### How Many Cables and Wires Do I Need?

One (1) RG-6 coaxial cable to run from the dish to a grounding block. The grounding block should be located near the point where the cable will enter the house.

One (1) RG-6 coaxial cable to run from the grounding block to run the DSS® receiver.

One (1) grounding wire (#10 copper or #8 aluminum) to run from the mast mounting foot directly to the central building ground. This connection grounds the dish itself. (If you choose the pole mount option, #6 copper bonding wire is recommended for grounding the dish.)

One (1) grounding wire (#10 copper or #8 aluminum) to run from the grounding block to the central building ground. This connection grounds the coaxial cable.



### CAUTION

It is extremely important to ground the dish AND the coaxial cables to a single point in the central building ground. A nearby lightning strike can easily damage an ungrounded dish, the receiver and your TV. Connecting both ground wires to the same point in the central building ground meets code requirements and provides the best protection for your equipment.

# SOME OUTDOOR STUFF

## ESTIMATING CABLE REQUIREMENTS

Here's how to determine where to put the grounding block and estimate the length of the RG-6 coaxial cables and ground wires.

1. Locate the central building ground. You will ground the dish and the cable grounding block to a single point in the central building ground.

Acceptable central building ground points may include:

- grounded interior metal cold water pipe within five feet of the point where it enters the building
  - grounded metallic service raceway
  - grounded electrical service equipment enclosure
  - 8-foot grounding rod driven into the ground (only if bonded to the central building ground by #6 or heavier bonding wire)
  - other acceptable grounding electrodes that comply with sections 250 and 810 of the National Electrical Code (NEC)
2. Choose a location to mount the grounding block. The block should be as close as possible to the point where the cable will enter the house.
  3. Estimate the distance between the grounding block and the central building ground.

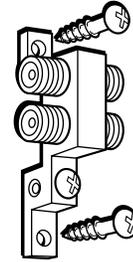
You need one (1) length of grounding wire \_\_\_\_\_ feet long to run from the grounding block to the central building ground.

4. Estimate the distance between the dish and the central building ground.

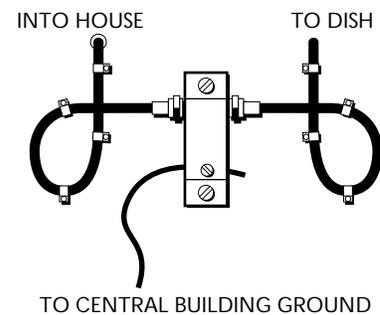
You need one (1) length of grounding wire \_\_\_\_\_ feet long to run from the mounting site to the central building ground.

5. Estimate the distance between the intended mounting site and the grounding block.

You need one (1) RG-6 coaxial cable \_\_\_\_\_ feet long to run from the dish to the grounding block.



Grounding Block



You must use RG-6 coaxial cable from the DSS® dish to the Satellite In jack on the DSS® receiver. Other types of coaxial cable, such as those used for cable television (RG-59) do not work for the DSS® system.

If your total RG-6 coaxial cable length is more than 112 feet, you may need additional installation equipment to compensate for the longer cable length.



# TESTING THE SYSTEM

## EARN EXTRA CREDIT

This chapter includes instructions for setting up the dish on a temporary site in order to test the system. While this is not strictly required, it's recommended to test the system before you begin the permanent installation. By creating a temporary setup, you can make sure everything in the system is working correctly before permanently mounting your dish.

Keep in mind you won't want to be troubleshooting the system while you're doing something up on the roof. In cases like this, it's best to safely test the system on the ground and move on to mounting the dish after you're certain you can acquire the signal.

### Materials Needed for the Test:

- Temporary stand for the DSS® dish, RG-6 coaxial cable, lag bolts, clamps (or a person to act as a "dish holder").

### Tools Needed for the Test

- satellite finder template (provided)
- 7/16" wrench
- phillips-head screwdriver
- compass

## 1 FIRST THINGS FIRST



## 2 SOME INDOOR STUFF



## 3 SOME OUTDOOR STUFF



## 4 TESTING THE SYSTEM



## 5 MOUNTING THE MAST



## 6 FINAL APPROACH

### CAUTION

Use caution when installing, adjusting or dismantling the dish and mast. The weight of the dish may cause the dish and mast to swing down and strike you, a bystander or nearby objects. This could cause personal injury or damage to the dish. Never insert your fingers inside the mast. Always grip the mast around its outside circumference.

# TESTING THE SYSTEM

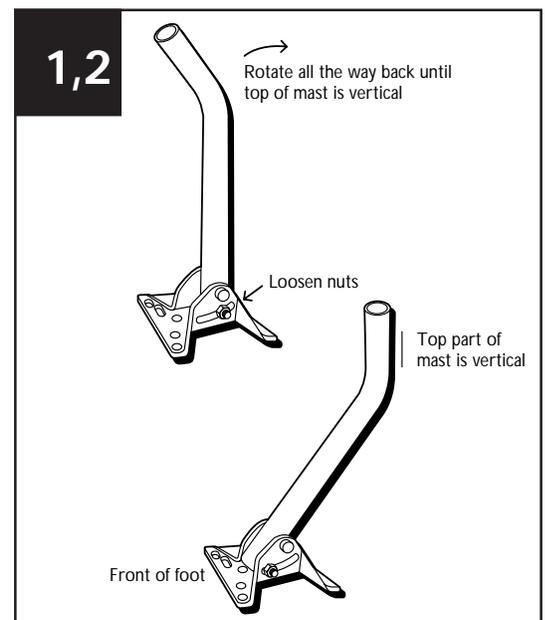
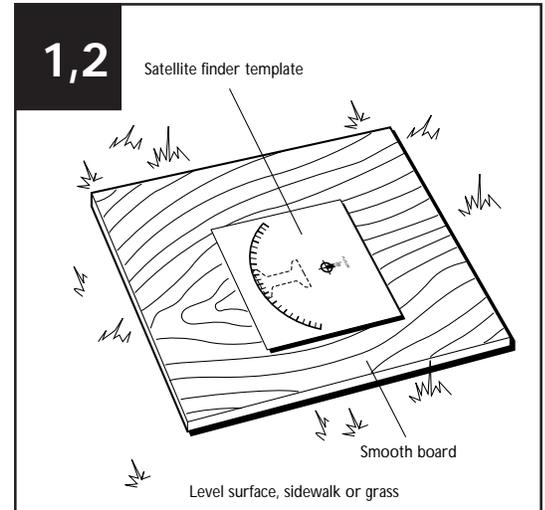
## SETTING UP THE TEMPORARY STAND

1. Choose a location for the system test. Here are some considerations:
  - You must test the system outside
  - you'll need a flat surface for the temporary stand
  - the site you pick for the test must have an unobstructed view to the satellite
  - the site you pick for the test should be close to a window or door near your TV (so you can easily see and hear the on-screen signal meter).
2. Find a temporary stand for the dish and place it in the site you've chosen for the test. The stand must be sturdy enough to support the weight of the dish and remain level when the dish is placed on top of it. Consider using:
  - a workbench or wooden base (using clamps to hold the mast foot)
  - a level sidewalk or driveway (using a second person to hold the mast foot).

Once you've found a location and a temporary stand, you can assemble the dish and test the system.

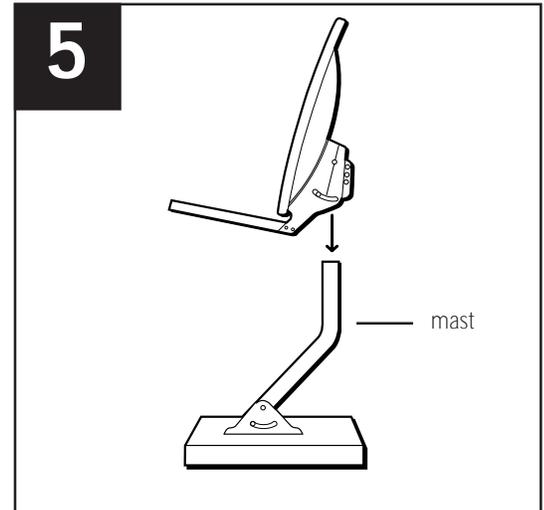
## ASSEMBLING THE TEST COMPONENTS

1. Loosen the nuts on the mounting foot so that the mast rotates easily.
2. Hold the mounting foot so it lays on a flat surface, then rotate the mast all the way back until the top part is vertical.

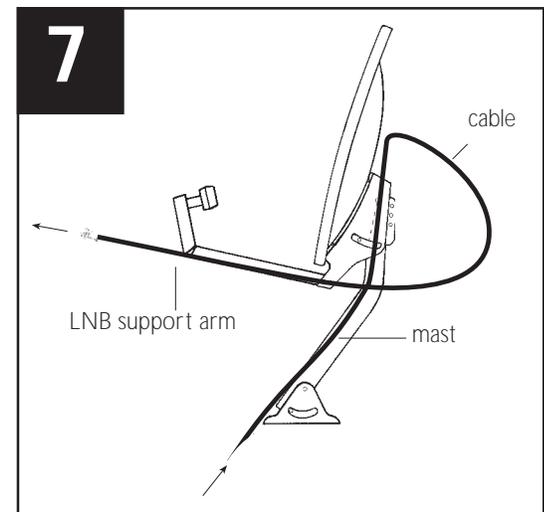


# TESTING THE SYSTEM

3. Tighten the bolts on the foot so that the mast will not rotate.
4. Secure the mounting foot to the temporary stand. Try using clamps, lag bolts, or a helper to hold the mast foot in place.
5. Place the dish assembly on the mast.

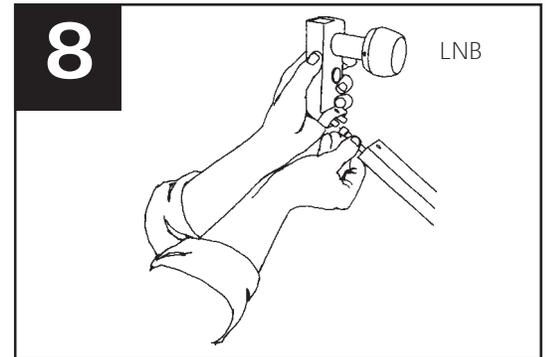


6. Make sure you have a length of RG-6 coaxial cable that will reach from the temporary dish setup to your DSS® receiver.
7. Push the cable through the bottom of the mast and out the top. Pull about three (3) feet of cable out of the top. Loop the cable and push it through the LNB support arm.



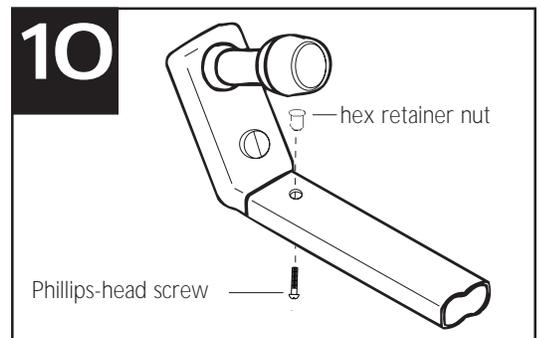
# TESTING THE SYSTEM

8. Connect the end of the cable to the LNB.

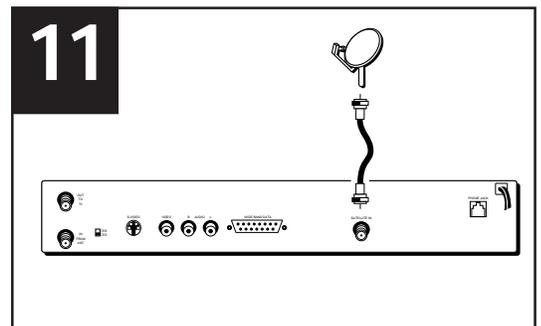


9. Insert the end of the LNB into the end of the LNB support arm. Push any extra cable back through the LNB support arm.

10. Insert the special hex retainer nut into the mounting hole on top of the LNB support arm.



11. Finally! Run the cable from the end of the mast through a window or door and connect it to the SATELLITE IN jack on the back of the DSS® receiver.



## Hint

Insert the hex retainer nut into the LNB before inserting the Phillips-head screw.

You won't be able to pick up a signal unless you connect the dish to the SATELLITE IN jack. Make sure you don't connect the cable to the IN FROM ANTENNA jack.

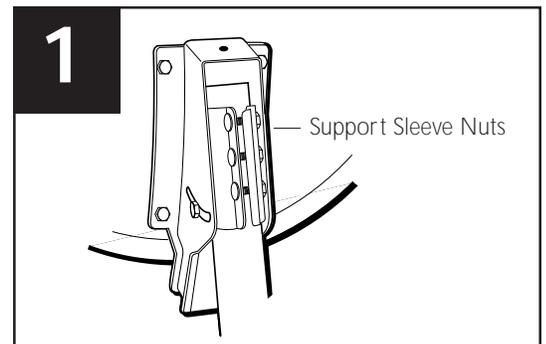
# TESTING THE SYSTEM

## PICKING UP THE SATELLITE SIGNAL

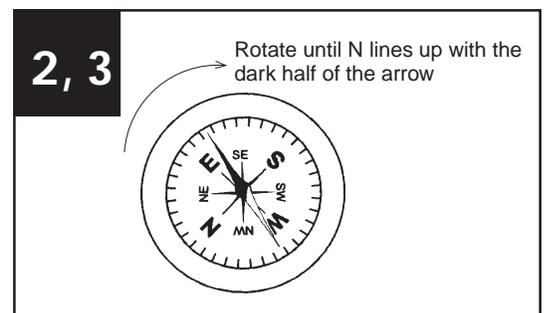
In this section, you'll pick up the satellite signal by pointing the dish toward the satellite. You've already set the elevation on the dish, so now you'll need to point the dish to the correct azimuth. Keep in mind that for the system test, you're only interested in receiving a signal—the strength of the signal is not important. When you mount the dish permanently, you'll spend some extra time fine tuning the signal to receive the strongest possible signal.

## POINT THE DISH

1. If necessary, loosen the nuts on the support sleeve so that the dish and LNB support arm can rotate easily left and right.



2. Hold the compass flat in the palm of your hand away from the dish. Hold your hand still until the needle stops moving (the dark or colored half of the compass needle always points north).
3. Rotate the compass so that the "N" (for north) is directly under the dark part of the compass needle.

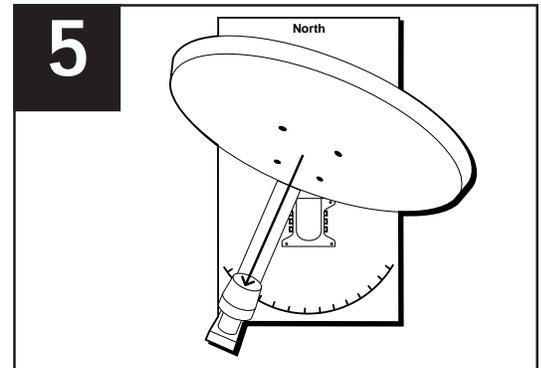


Your compass is now aligned with north. The tick marks around the edge of the compass represent azimuth degrees.

If at any time during the test you hear one continuous tone, or see the message "signal locked" on the on-screen signal meter, then you know the system is working and you can skip to *Disconnecting Test Components*.

# TESTING THE SYSTEM

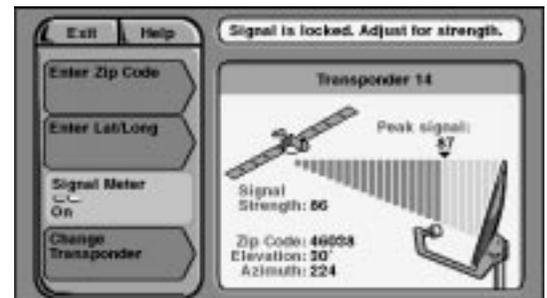
4. Locate the tick mark on the compass that corresponds to the azimuth number you wrote down in the last chapter.
5. Point the LNB support arm in the same direction as the azimuth tick mark on the compass.
6. Lightly tighten the nuts on the LNB support sleeve so the LNB does not swing out of position when you take your hands away.



## BRING UP THE ON-SCREEN SIGNAL STRENGTH METER

1. Plug in the DSS® receiver and the TV.
2. Turn on the TV and tune to the correct channel. (Which channel you tune to is determined by the connection you chose on pages 12-19.)
  - If you connected the receiver using the S-video or audio/video cables (as shown on pages 12 and 14), tune the TV to the S-video input channel or the video input channel.
  - If you connected the receiver using the RF cable connection (as shown on pages 16 and 18), tune to channel 3 or 4 (depending on how you set the CH3/CH4 switch on the back of the receiver). Press the ANTENNA button on the receiver's front panel.
3. Press DSS on the remote, then press CLEAR.

If the TV shows DSS® programming or the program guide, you've already picked up the signal. Skip to *Disconnecting Test Components*.
4. Press MENU•SELECT on the remote to bring up the DSS® Main menu.
5. Point to and select *Dish Pointing*.
6. Point to and select *Signal Meter*.

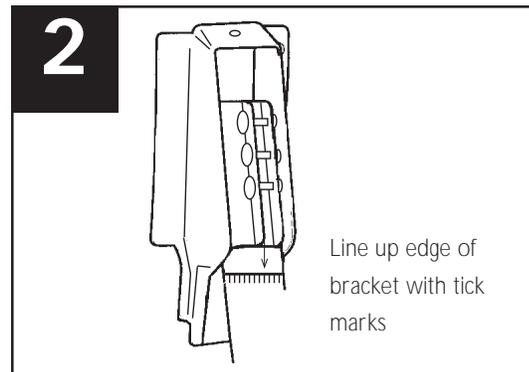


You may need to adjust the TV's volume so you can hear the signal meter from the temporary setup.

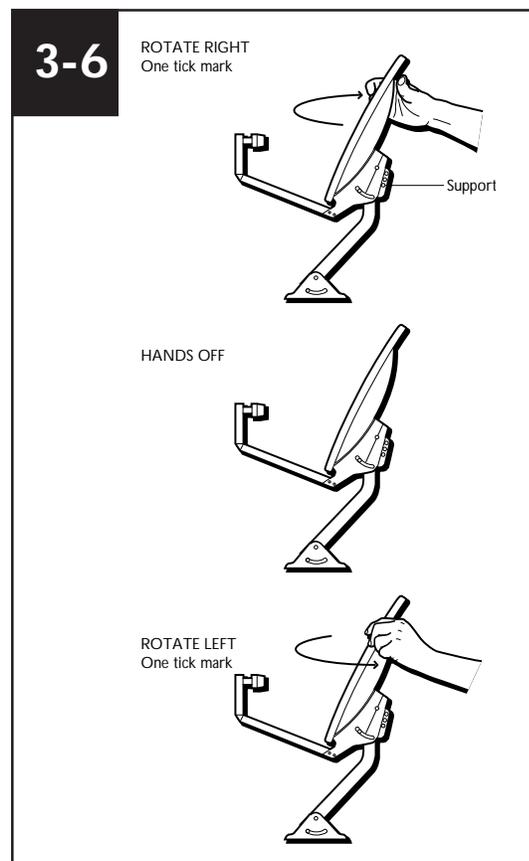
# TESTING THE SYSTEM

## ADJUST THE AZIMUTH

1. If necessary, loosen the nuts on the support sleeve so that the LNB support arm can rotate left and right.
2. Locate the piece of tape at the top of the mast. This tape is marked with evenly spaced "tick" marks.



3. Carefully rotate the dish one tick mark to the right.
4. Pause to listen for five (5) seconds.
5. If you don't hear the continuous tone from the signal meter, rotate the dish back to the original azimuth position, then rotate the dish one tick mark to the left. Pause to listen for five seconds.
6. Continue rotating the dish further right and left *one tick mark* at a time. Make sure to pause for five seconds before changing the dish position.



# TESTING THE SYSTEM

## IF NECESSARY, ADJUST THE ELEVATION

If you still haven't picked up the satellite signal, you may need to adjust the elevation.

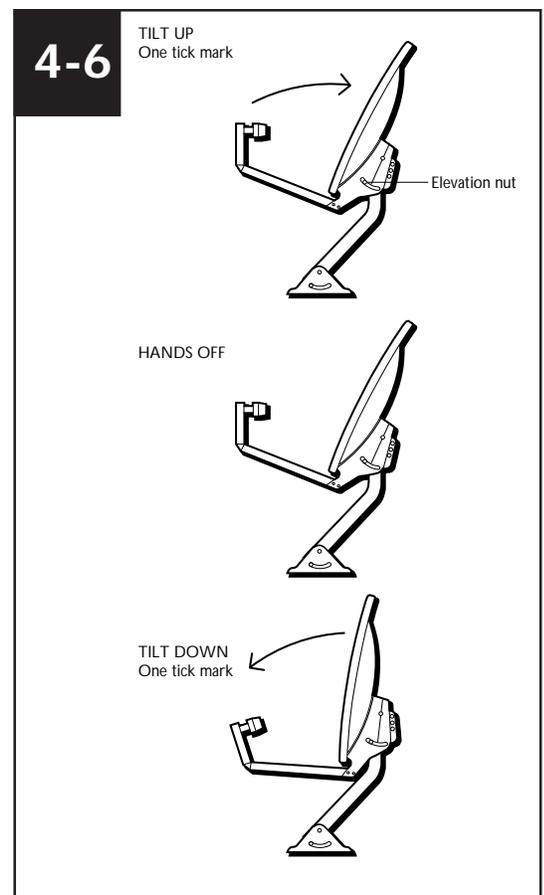
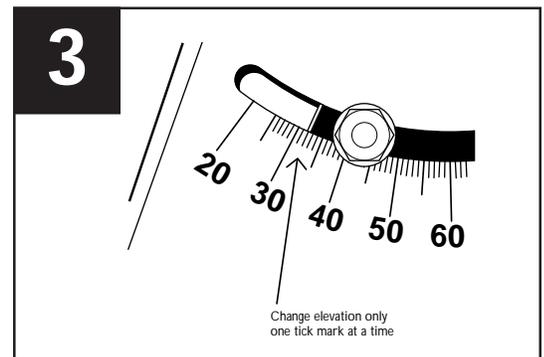
1. Return the LNB support arm to the original compass direction.
2. Tighten one of the three nuts on the support sleeve so the dish will not rotate left and right.
3. Loosen the elevation nut on the LNB support arm so the dish can move up and down.

4. Adjust the dish upward slightly to increase the elevation one tick mark. Pause to listen for five seconds.
5. If you still don't hear the continuous signal tone, move the dish back to its original elevation, then move the dish down one tick. Pause to listen for five seconds.
6. Continue rotating the dish further up and down *one tick mark at a time*. (For example, you've tested the system two tick marks to the right, then you move two tick marks left to the original position, then two more tick marks left, etc.) Make sure to pause for five seconds before changing the dish position.

## DID YOU HEAR ONE CONTINUOUS TONE?

**NO** Go to the next step, *Troubleshooting the System Test*, page 41.

**YES** Your system is working and you have located the precise direction to point the dish. You may want to pick out a landmark to help you remember the direction. Skip to *Disconnecting Test Components*, page 42.



# TESTING THE SYSTEM

## TROUBLESHOOTING THE SYSTEM TEST

Follow these steps if you can't pick up the satellite signal:

1. You must use RG-6 coaxial cable from the DSS® dish to the Satellite In jack on the back of the DSS® receiver. RG-59 coaxial cable allows signal loss and should not be used with the DSS® system.
2. Make sure that the access card is in the access card slot in the receiver.
3. Make sure the cable from the dish is connected to the SATELLITE IN jack (NOT the IN FROM ANTENNA jack).
4. Make sure you're using the correct azimuth and elevation for your zip code by returning to the Point Dish Using Your Zip Code display screen. Enter your zip code, making sure that the elevation and azimuth numbers match those you recorded earlier in the book.
5. Verify that the dish is pointed toward the correct elevation.
  - Check the elevation setting on the LNB support arm. Make sure the elevation indicator (the edge of white-painted metal, NOT the washer or bolt) is set at the elevation you recorded.
  - Make sure the mast is vertically level: if the mast is on a level surface, the mast should be pushed all the way back.
6. Verify that the LNB support arm is pointing in the correct compass direction.
  - Using a compass, make sure the LNB support arm is pointing toward the azimuth number you recorded.
7. Make sure there are no obstructions (including your body or hands) between the dish and the satellite.
8. Restart the signal meter and try again to pick up the satellite signal.
9. Readjust the azimuth, making sure to rotate the dish left and right one tick at a time, pausing to listen for five seconds between adjustments.
10. Readjust the elevation, making sure to rotate the dish up and down one tick at a time, pausing to listen for five seconds between adjustments.

If you suspect a problem with one of the RG-6 cables, you may want to test the cable by connecting one end to the TV and the other to the DSS® receiver's OUT TO TV jack. Then see if you can bring up the on-screen menus. If the on-screen menus do not come up, the cable may be faulty. If the menus do come up, the cable should be okay.

If you are still unable to pick up the satellite signal, refer to Appendix C, Warranty Information, for further information on identifying the problem.

# TESTING THE SYSTEM

## DISCONNECTING TEST COMPONENTS

**Do not skip this step!** Now that you know your components are working, and you have a clear idea of how to connect the system, you'll need to follow a different procedure to make a permanent connection.

You don't need to disconnect all the components, just those that require other steps to ensure that the installation will be stable and permanent.

1. Turn off and unplug all components in your system (TV, DSS® receiver, etc.)
2. Disconnect the coaxial cable from the SATELLITE IN jack on the DSS® receiver.
3. Use a screwdriver to remove LNB's screw and hex retainer. Carefully slide the LNB out of the LNB support arm.
4. Disconnect the coaxial cable from the LNB.
5. Push the coaxial cable through the LNB support arm and mast to remove it.
6. Remove the LNB arm assembly from the mast.
7. Remove the mast from the temporary stand.

# MOUNTING THE MAST

In Chapter 3, you conducted a precise survey and performed other steps to help you decide on the permanent mounting site for your DSS® dish. In this chapter, you'll actually begin the installation by mounting the dish mast on the surface you've chosen for your permanent site.

## WHICH MOUNTING SURFACE DID YOU CHOOSE?

Find the mounting surface on this chart and turn to the page specified for step-by-step instructions for mounting the dish mast on that surface.

Mounting the Dish On:	Go to Page:
Wall Studs or Solid Wood	44
Lap Siding	47
Brick or Poured Concrete	51
Hollow Walls or Cinder Block	53
Pole	56
Chimney	58
Roof	59

## 1 FIRST THINGS FIRST



## 2 SOME INDOOR STUFF



## 3 SOME OUTDOOR STUFF



## 4 TESTING THE SYSTEM



## 5 MOUNTING THE MAST



## 6 FINAL APPROACH

### CAUTION

Use caution when installing, adjusting or dismantling the dish and mast. The weight of the dish may cause the dish and mast to swing down and strike you, a bystander or nearby objects. This could cause personal injury or damage to the dish. Never insert your fingers inside the mast. Always grip the mast around its outside circumference.

### Materials Needed

Each section in this chapter gives you a complete list of the materials and tools you will need for that particular mounting surface.

# MOUNTING THE MAST

## MOUNTING ON WALL STUDS OR SOLID WOOD

### **DANGER! AVOID Power Lines!**

When following these instructions, take extreme care to avoid contact with overhead power lines, electric lights, and power circuits. Contact with power lines, electric lights, or power circuits may be fatal. It is recommended that the dish be located more than 20 feet from overhead power lines.

### **Materials Needed to Mount the Mast on Wall Studs or Solid Wood:**

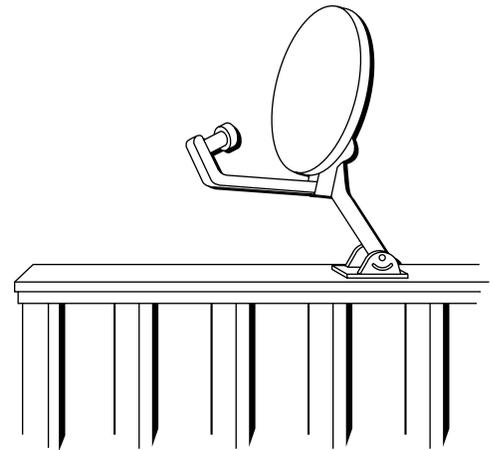
- (2) 5/16" x 3" lag screws
- (4) 5/16" x 2" lag screws
- (4) 5/16" washers

### **Tools Needed to Mount the Mast on Wall Studs or Solid Wood:**

- electric drill with 1/8" and 3/16" wood bits
- bubble level
- 1/2" wrench
- 3/8" wrench
- 7/16" wrench
- pencil

### **Important Considerations:**

- Do NOT mount the dish where someone might use it as a handrail.
- Make sure the wooden surface is structurally sound
- Do NOT mount the dish on any type of composite paneling, such as fiber board, particle board, or strand board.
- Do NOT mount the dish under an eave or overhang that may block or partially shadow the dish.



Two (2) 5/16" x 3" lag screws



Four (4) 5/16" x 2" lag screws



Four (4) 5/16" washers

### **Hint**

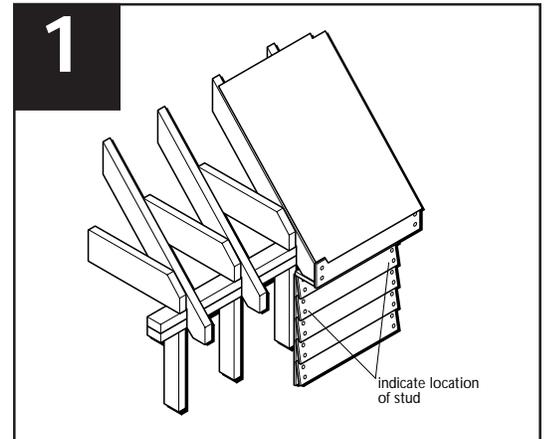
To locate a stud underneath panel siding, locate the nails securing the panel to the wall. The nails usually align with the center of the stud and provide an easy guide.

# MOUNTING THE MAST

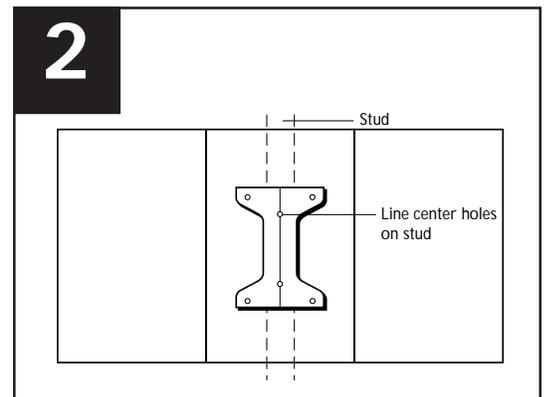
## STEP-BY-STEP INSTRUCTIONS FOR MOUNTING ON WALL STUDS OR SOLID WOOD

1. Locate the center of a stud where you want to mount the mast foot.

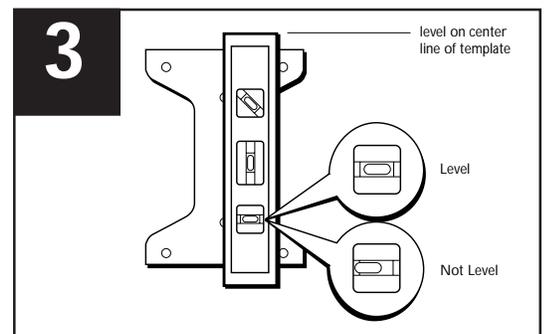
Make sure you locate and secure the mounting foot to the center of a wall stud. **Do not mount the dish near the edge of a stud.**



2. Hold the mounting foot in a position so the center line is centered on a stud or solid wood surface (like a deck rail).



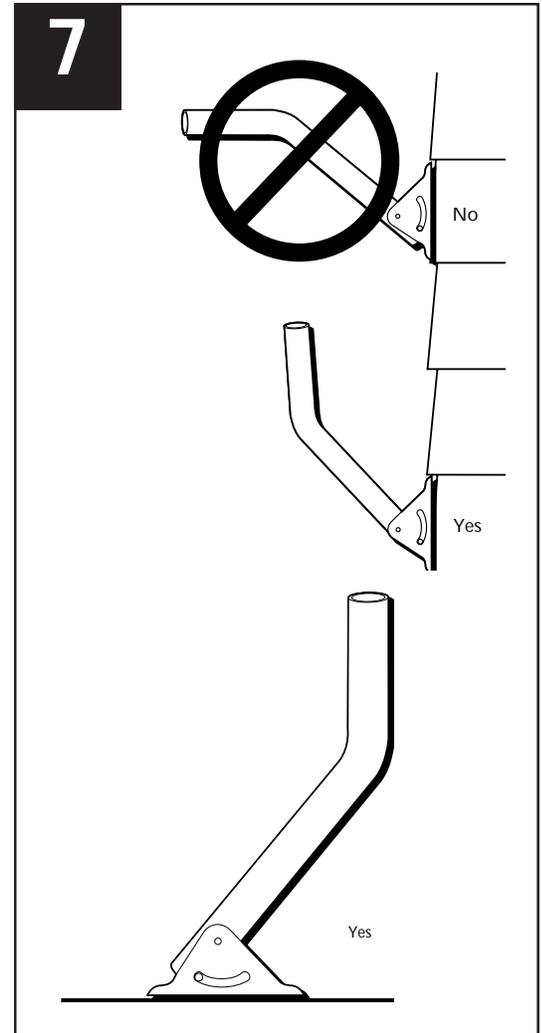
3. If you are mounting on a sloped or vertical surface, use a level to verify that the center line is perfectly vertical.



4. Use a pencil to mark the two center holes and the four outside corner holes of the mounting foot.

# MOUNTING THE MAST

5. Remove the mounting foot and drill two 1/8" holes in the two center hole locations and four 3/16" holes in the four outside corner locations.
6. Use a 7/16" wrench to loosen the nuts on the mounting foot so that you can rotate the mast to access both of the center mounting holes.
7. Hold the mounting foot over the holes so that the top part of the mast will rotate and point straight up.
8. Install two 5/16" x 3" lag screws into the two center holes on the mounting foot. Securely tighten the screws.
9. Put washers on the 5/16" x 2" lag screws, insert the screws into the four outside holes and securely tighten them.
10. Turn to *Final Approach* on page 63 for instructions on leveling the mast.



## IMPORTANT

Do not mount the DSS® dish on any type of aluminum or vinyl siding.

Do not mount the dish on any type of composite paneling, such as fiber board, particleboard, or strand board.

# MOUNTING THE MAST

## MOUNTING ON LAP SIDING

### **DANGER! AVOID Power Lines!**

When following these instructions, take extreme care to avoid contact with overhead power lines, electric lights, and power circuits. Contact with power lines, electric lights, or power circuits may be fatal. It is recommended that the dish be located more than 20 feet from overhead power lines.

### Materials Needed to Mount the Mast on Lap Siding

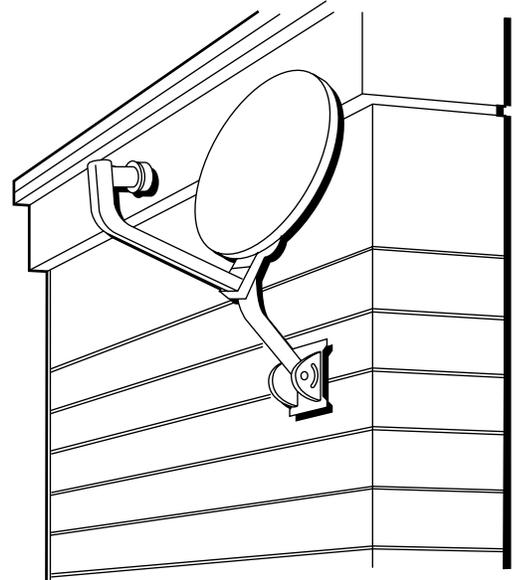
- (2) 5/16" x 3" lag screws
- (4) 5/16" x 2" lag screws
- (4) 5/16" washers

### Tools Needed to Mount the Mast on Lap Siding:

- electric drill with 1/8" and 3/16" wood bits
- bubble level
- 1/2" wrench
- 3/8" wrench
- 7/16" wrench
- pencil

### Important Considerations:

- Do NOT mount the DSS® dish on any type of aluminum or vinyl siding.
- Do NOT mount the dish on any type of composite paneling, such as fiber board, particle board, or strand board.
- Do NOT mount the dish under an eave or overhang that may block or partially shadow the dish.



Two (2) 5/16" x 3" lag screws



Four (4) 5/16" x 2" lag screws



Four (4) 5/16" washers

# MOUNTING THE MAST

## STEP-BY-STEP INSTRUCTIONS FOR MOUNTING ON LAP SIDING

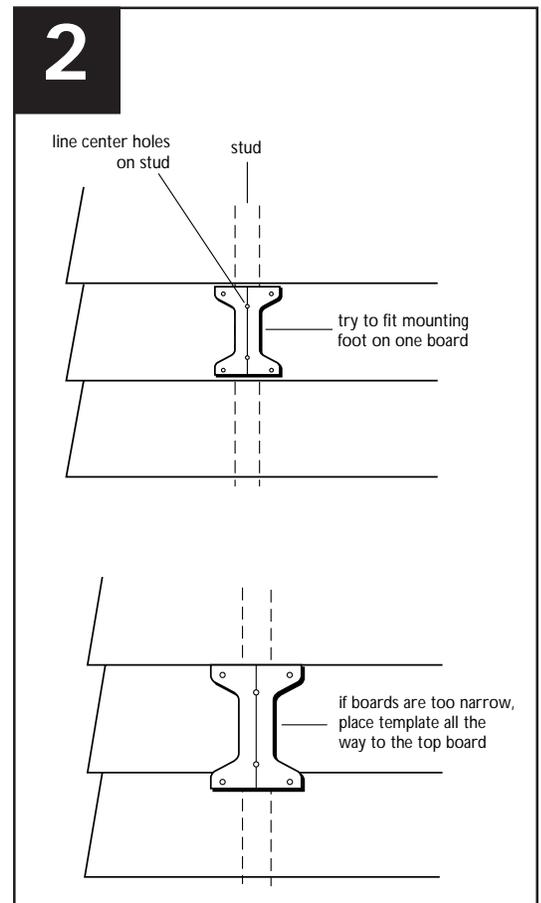
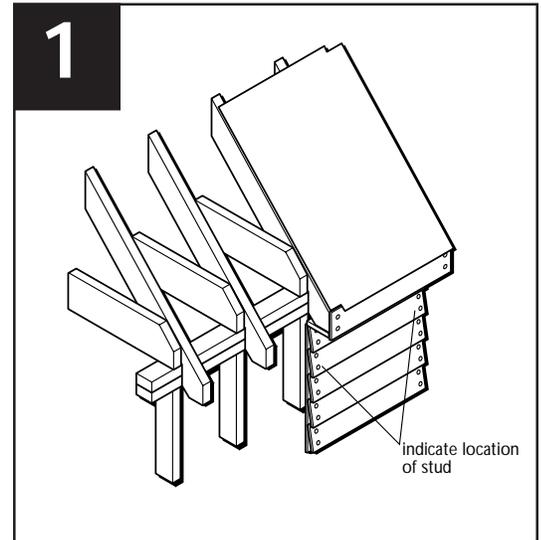
1. Locate the center of a stud where you want to mount the mast foot.

If possible, choose a position where the mounting foot fits on one siding board. When the mounting foot spans two pieces of siding, it should be positioned so that most of the foot is on the top board.

Make sure you locate and secure the mounting foot to the center of a wall stud. **Do not mount the dish near the edge of a stud.**

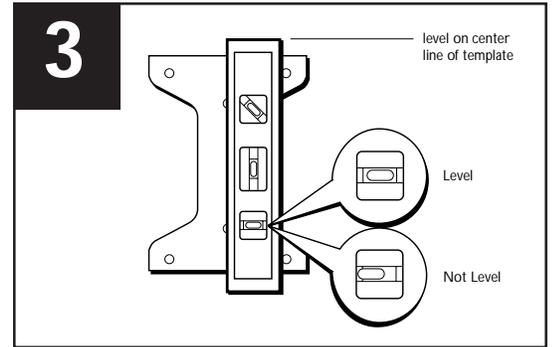
**Hint:** To locate a stud underneath panel siding, locate the nails securing the panel to the wall. The nails usually align with the center of the stud and provide an easy guide to the location of the studs.

2. Hold the mounting foot in a position so the center line is centered on a stud.

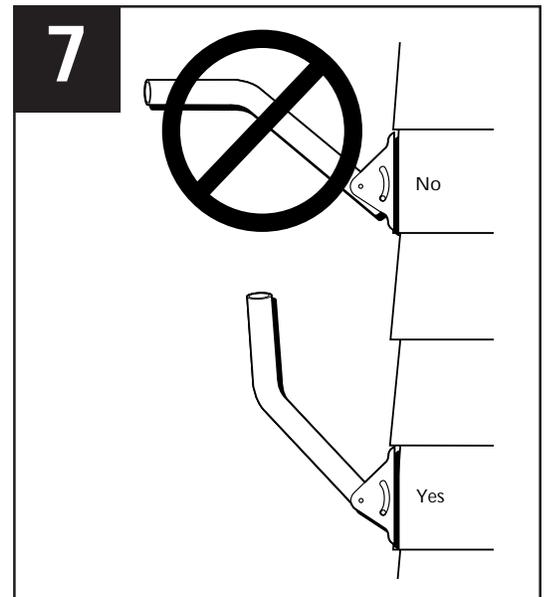


# MOUNTING THE MAST

3. Use a level to verify that the center line is perfectly vertical.



4. Use a pencil to mark the two center holes and the four outside corner holes of the mounting foot.
5. Remove the foot and drill two 1/8" holes in the two center hole locations and four 3/16" holes in the four outside corner locations.
6. Use a 7/16" wrench to loosen the nuts on the mounting foot so that you can rotate the mast to access both of the center mounting holes.
7. Hold the mounting foot over the holes so that the top part of the mast will rotate and point straight up.



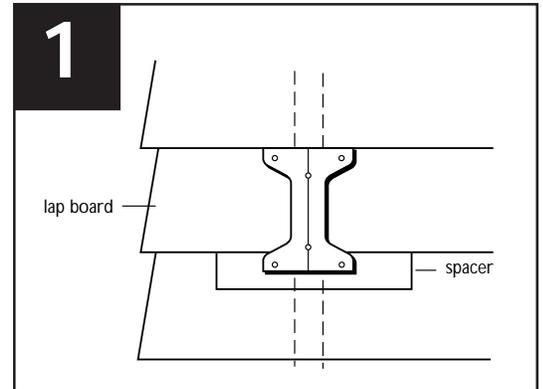
8. Install two 5/16" x 3" lag screws into the two center holes on the mounting foot. Lightly tighten the screws.
9. Does the mounting foot fit on a single siding board?  
**YES** Proceed to step 10.  
**NO** Skip to the section titled "Installing a Spacer" on page 50.
10. Put washers on the 5/16" x 2" lag screws, insert the screws into the four outside holes and securely tighten all screws.
11. Turn to *Final Approach* on page 63 for instructions on leveling the mast.

# MOUNTING THE MAST

## INSTALLING A SPACER

When the mounting foot spans two pieces of siding, it should be positioned so most of the foot is on the top board. A spacer should be installed to help hold the bottom of mounting foot in place. The spacer can be made of either solid wood or plastic.

1. Measure the area under the mounting foot that needs to be filled.
2. Trim a wood or plastic spacer to fit the area that needs to be filled.
3. Loosen the lag screw in the lower center hole of the mounting foot.
4. Insert the spacer under the mounting foot.
5. Use a pencil to mark the location of the two lower outside holes on the spacer.
6. Remove the spacer and use a 3/16" bit to drill the two holes you marked on the spacer.
7. Slide the spacer under the mounting foot and align the holes in the spacer with the holes in the lap siding.
8. Put washers on the 5/16" x 2" lag screws, insert the screws into the four outside holes and securely tighten all screws.
9. Go to "Final Approach" on page 63 for instructions on leveling the mast.



# MOUNTING THE MAST

## MOUNTING ON BRICK OR POURED CONCRETE

### **DANGER! AVOID Power Lines!**

When following these instructions, take extreme care to avoid contact with overhead power lines, electric lights, and power circuits. Contact with power lines, electric lights, or power circuits may be fatal. It is recommended that the dish be located more than 20 feet from overhead power lines.

### **Materials Needed to Mount the Mast on Brick or Poured Concrete:**

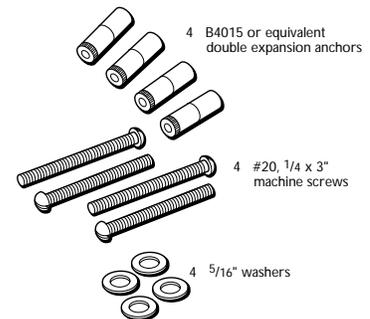
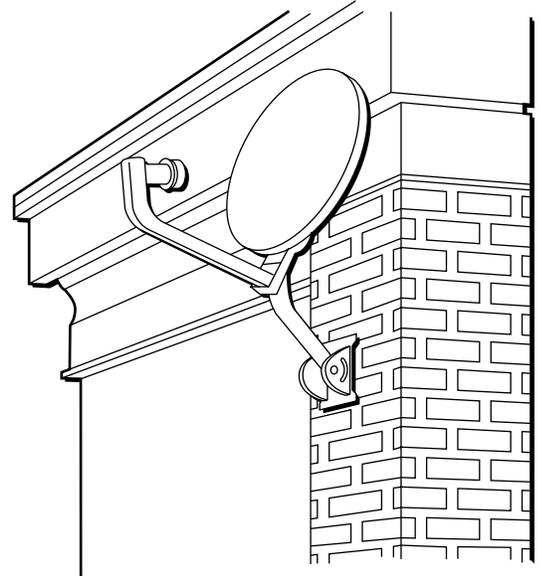
- (4) B4015 or equivalent double-expansion anchors
- (4) #20, 1/4" x 3" machine screws
- (4) 5/16" flat washers

### **Tools Needed to Mount the Mast on Brick or Poured Concrete:**

- electric drill with 1/2" masonry bit
- bubble level
- screwdriver
- hammer
- 7/16" wrench
- pencil

### **Important Considerations:**

- Do NOT mount the dish under an eave or overhang that may block or partially shadow the dish.



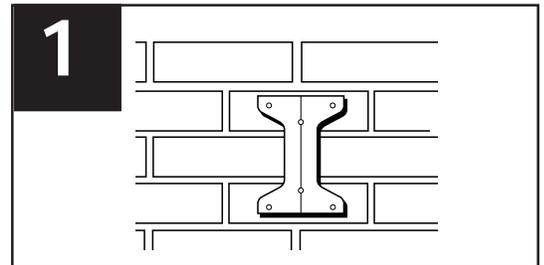
### **IMPORTANT**

The wall anchors used must have a strength of at least 300 pounds of pull-out pressure. B4015 or equivalent double-expansion anchors are recommended.

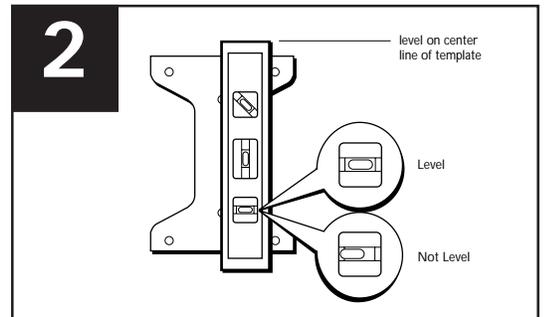
# MOUNTING THE MAST

## STEP-BY-STEP INSTRUCTIONS FOR MOUNTING ON BRICK OR POURED CONCRETE

1. Hold the mounting foot in position on the mounting surface.



2. If you are mounting on a vertical or sloped surface, use a level to ensure that the center line is vertical.



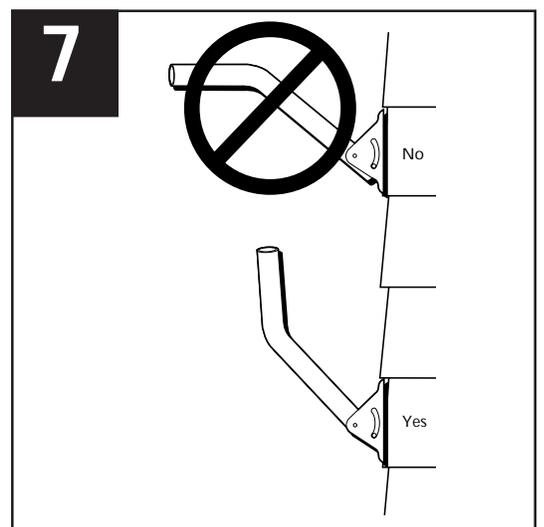
3. Mark the four outside holes on the mounting foot.

4. Remove the foot and drill (4) 1/2" holes in the locations you marked.

5. Insert (4) B4015 or equivalent double-expansion anchors.

6. Use a 7/16" wrench to loosen the nuts on the mounting foot so that you can rotate the mast to access both of the center mounting holes.

7. Hold the mounting foot over the holes so the top part of the mast will rotate and point straight up.



8. Insert and tighten the machine screws.

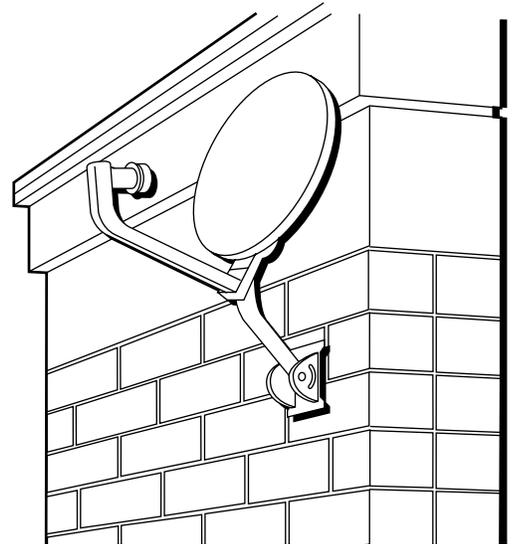
9. Go to "Final Approach" on page 63 for instructions on leveling the mast.

# MOUNTING THE MAST

## MOUNTING ON A HOLLOW OR CINDER

### **DANGER! AVOID Power Lines!**

When following these instructions, take extreme care to avoid contact with overhead power lines, electric lights, and power circuits. Contact with power lines, electric lights, or power circuits may be fatal. It is recommended that the dish be located more than 20 feet from overhead power lines.



## BLOCK WALL

### Materials Needed to Mount the Mast on a Hollow or Cinder Block Wall:

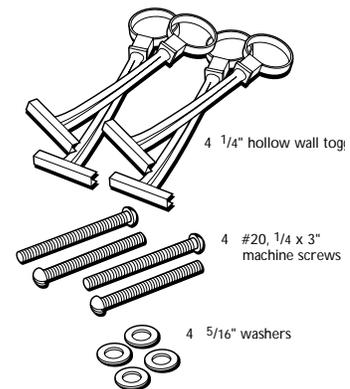
- (4) 1/4" hollow wall togglers
- (4) #20, 1/4" x 3" machine screws
- (4) 4/16" flat washers

### Tools Needed to Mount the Mast on a Hollow or Cinder Block Wall:

- electric drill with 1/2" masonry bit
- bubble level
- screwdriver
- 7/16" wrench
- pencil

### Important Considerations:

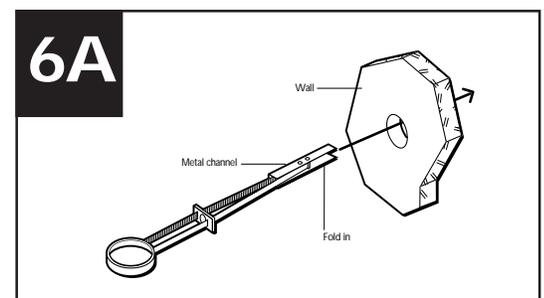
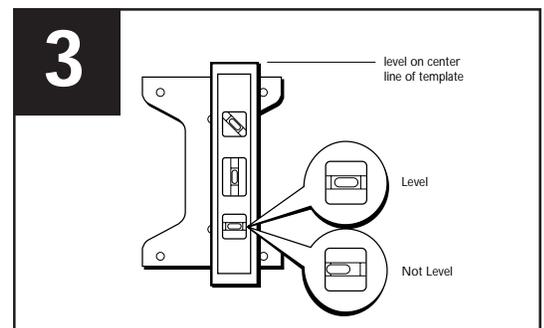
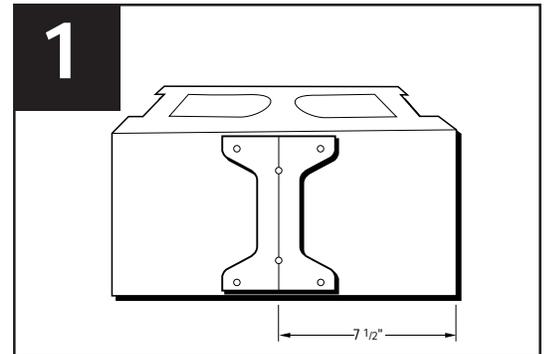
- Do NOT mount the dish under an eave or overhang that may block or partially shadow the dish.



# MOUNTING THE MAST

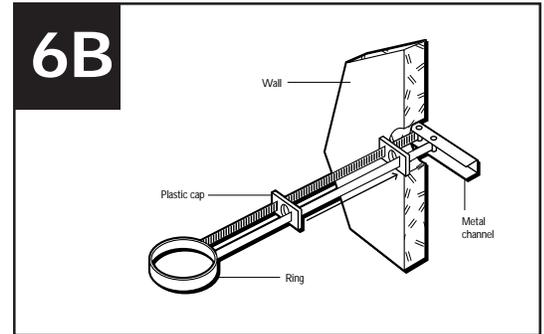
## STEP-BY-STEP INSTRUCTIONS FOR MOUNTING ON A HOLLOW OR CINDER BLOCK WALL

1. When installing togglers in cinder blocks, it is important to position them in the core of the block. To position the foot on the wall, measure 7-1/2" from one edge of the block and mark the center of the block.
2. Center the mounting foot on the mark you made.
3. Level the center line of the mounting foot using a bubble level.
4. Mark the four outside corner holes.
5. Remove the mounting foot. Drill a 1/2" hole at the locations you marked.
6. Install the togglers:
  - a. Carefully fold one end of the metal channel along the plastic straps. Hold the metal channel flat against the plastic straps and slide it through the hole.

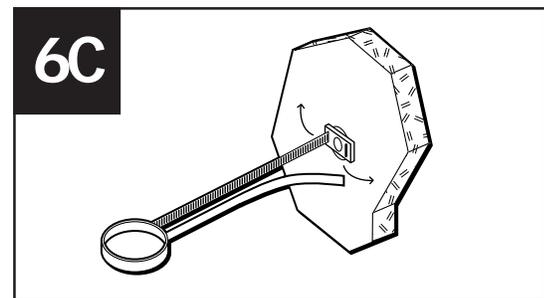


# MOUNTING THE MAST

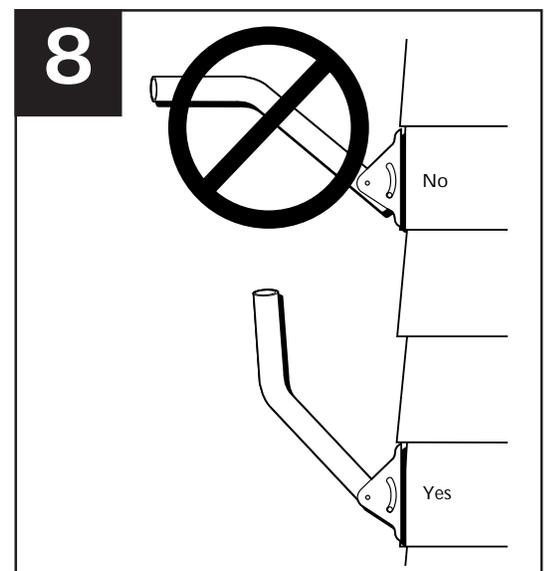
- b. Pull the ring so the metal channel rests flush behind the wall. Hold the ring tight and slide the plastic cap along the straps until the cap is flush with the wall.



- c. Push the straps side-to-side to snap them off flush with the wall.
- d. Repeat for all four holes.



7. Use a 7/16" wrench to loosen the nuts on the mounting foot so you can rotate the mast to access both of the center mounting holes.
8. Hold the mounting foot over the holes so the top part of the mast will rotate and point straight up.



9. Place washers on each of four #20, 1/4" x 3" machine screws and attach the mounting foot to the wall. Securely tighten the screws.
10. Go to "Final Approach" on page 63 for instructions on leveling the mast.

# MOUNTING THE MAST

## MOUNTING THE DISH ON A POLE

### **DANGER! AVOID Power Lines!**

When following these instructions, take extreme care to avoid contact with overhead power lines, electric lights, and power circuits. Contact with power lines, electric lights, or power circuits may be fatal. It is recommended that the dish be located more than 20 feet from overhead power lines.

### **Materials Needed to Mount the Dish on a Pole:**

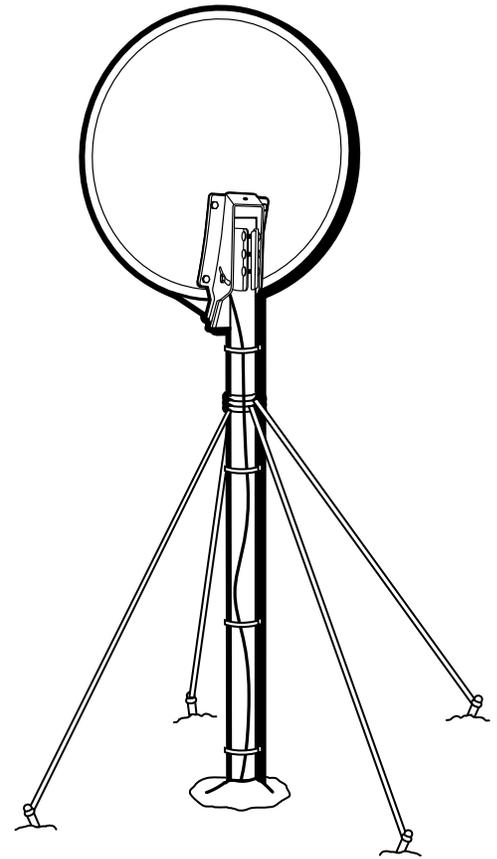
- (1) 1-1/4" inner diameter Schedule 40 galvanized steel pipe with a measured outer diameter of 1.6"
- (3) bags quick-setting concrete

### **Tools Needed to Mount the Dish on a Pole:**

bubble level  
screwdriver  
hammer  
hacksaw  
shovel or post hole digger  
pencil

### **Important Considerations:**

- Do not install the pole in wet or marshy areas.
- The pole must go at least 3 feet below the surface.
- If the length of pipe above ground is too long, guy wires may be needed to increase the stability of the mount in windy conditions.
- You will need to ground the pole in addition to grounding the dish and coaxial cable.



### **IMPORTANT**

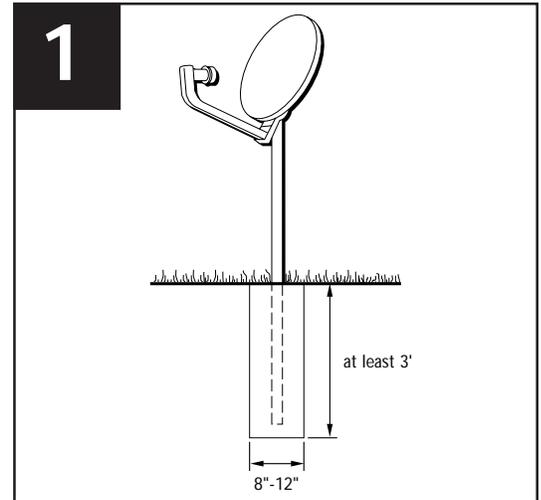
In this mounting method, a pole that has been secured in the ground with concrete replaces the mounting foot and mast assembly that was supplied with the DSS® dish. The dish is held on the pole by the sleeve of the LNB support arm.

# MOUNTING THE MAST

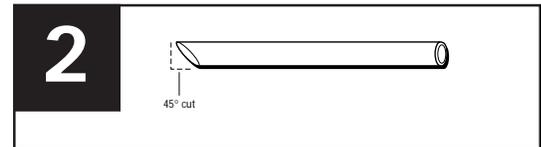
## STEP-BY-STEP INSTRUCTIONS FOR MOUNTING THE DISH ON A POLE

1. Dig a hole 36" deep and 8" to 12" wide at the mounting location.

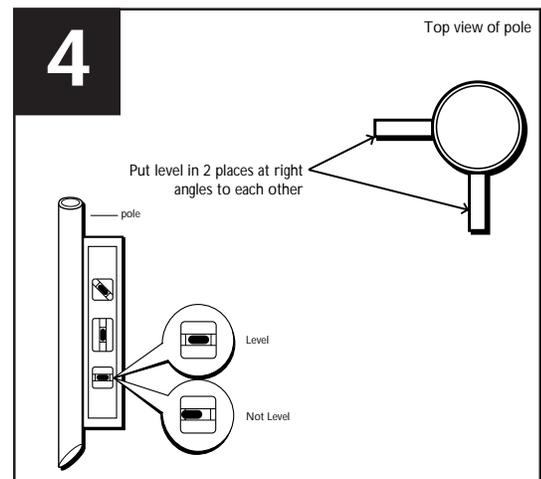
The depth of the hole must extend at least 6" below the frost line. For most installations, a pole 6' long is sufficient, since this allows 3' of the pole to be below the ground and 3' above ground.



2. Use a hacksaw to cut a 45° angle at the bottom of the pole. This will prevent the pole from rotating in the concrete over time.



3. Place the pole in the hole and use a small amount of dirt or stones to hold the pole upright. You need to attach guy wires to help keep the pole upright.
4. Level the pole using the bubble level. Level the pole at two different locations that are at right angles to each other.



5. Fill the hole with quick drying cement. Stop when the cement is about two inches from the top of the hole.
6. Let the cement completely dry before you mount the dish on the pole.
7. Go to "Final Approach" on page 63.

# MOUNTING THE MAST

## MOUNTING THE MAST ON A CHIMNEY

### **DANGER! AVOID Power Lines!**

When following these instructions, take extreme care to avoid contact with overhead power lines, electric lights, and power circuits. Contact with power lines, electric lights, or power circuits may be fatal. It is recommended that the dish be located more than 20 feet from overhead power lines.

### **Materials Needed to Mount the Mast on a Chimney:**

(1) RCA D915 Chimney Mount Kit

### **Tools Needed to Mount the Mast on a Chimney:**

bubble level

7/16" wrench

screwdriver

tin snips

pliers

ladder

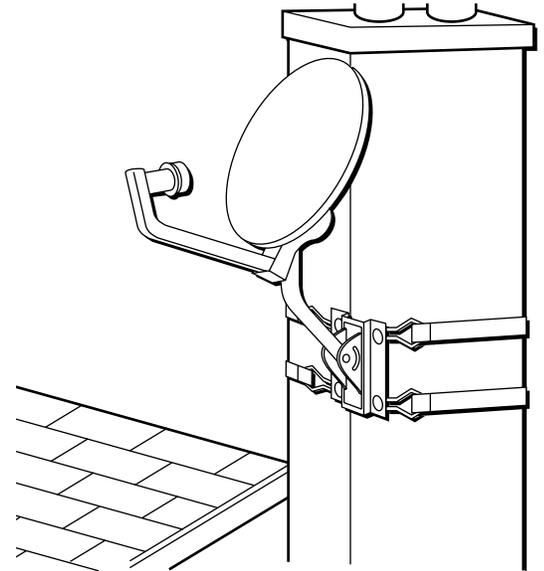
pencil

### **Important Considerations:**

- Make sure the chimney is sturdy and in good condition.
- There should be enough room for the dish to be mounted without extending above the top of the chimney. This will prevent the dish from being damaged by heat and soot.
- If possible, position the dish on the side of the chimney that faces the prevailing wind.

## TO MOUNT THE MAST ON A CHIMNEY

1. Follow the instructions in the RCA D915 Chimney Mount Kit to install the mast on your chimney.
2. Go to "Final Approach" on page 63.



### **IMPORTANT**

Use the chimney only if you cannot locate a good mounting site on the side of your house, on your deck or patio, or on a pole in your yard. High winds can put great strain on the mounting and the chimney if the dish is not mounted properly.

# MOUNTING THE MAST

## MOUNTING THE MAST ON A ROOF

### **DANGER! AVOID Power Lines!**

When following these instructions, take extreme care to avoid contact with overhead power lines, electric lights, and power circuits. Contact with power lines, electric lights, or power circuits may be fatal. It is recommended that the dish be located more than 20 feet from overhead power lines.

### **Materials Needed to Mount the Mast on a Roof:**

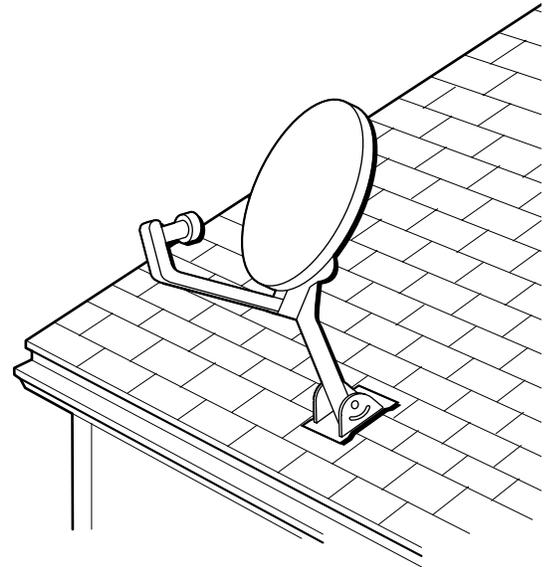
- (2) 5/16" x 3" lag screws
- (4) 5/16" x 2" lag screws
- (4) 5/16" washers
- roof sealant

### **Tools Needed to Mount the Mast on a Roof:**

- electric drill with 1/8" and 3/16" wood bits
- bubble level
- 1/2" wrench
- 3/8" wrench
- 7/16" wrench
- ladder
- pencil

### **Important Considerations:**

- Do not mount the dish on slate or shake shingles.
- Do not mount the dish on an overhang.
- On a flat roof, do not mount the dish on a low place where water collects.



Two (2) 5/16" x 3" lag screws



Four (4) 5/16" x 2" lag screws



Four (4) 5/16" washers

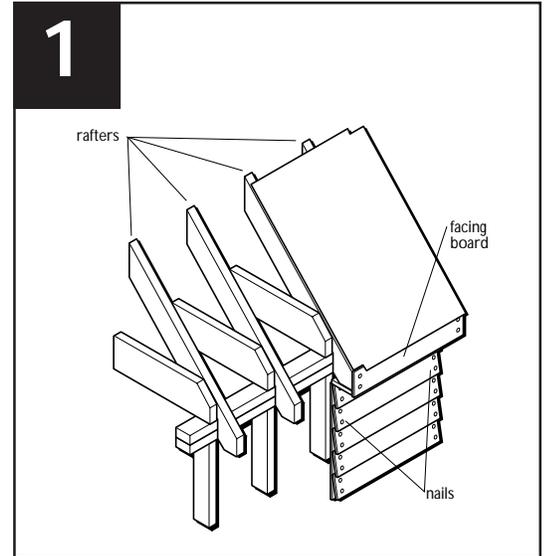
### **IMPORTANT**

Use the roof mount *only* as a last resort. You can easily damage the roof by walking on it or cause leaks by not properly sealing the mounting holes. Problems with roof installations increase with the age of the roof and the type of roofing materials.

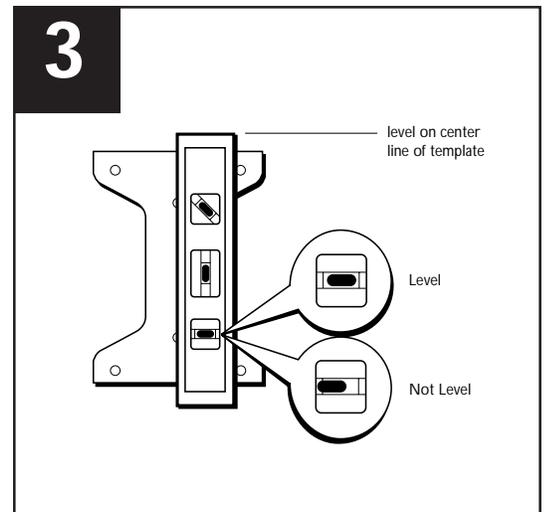
# MOUNTING THE MAST

## STEP-BY-STEP INSTRUCTIONS FOR MOUNTING THE MAST ON A ROOF

1. Locate the center of a rafter where you want the mounting foot to be located.



2. Hold the mounting foot in a position so the center line is centered on a rafter.
3. Use a bubble level to make sure the center line is perfectly vertical.



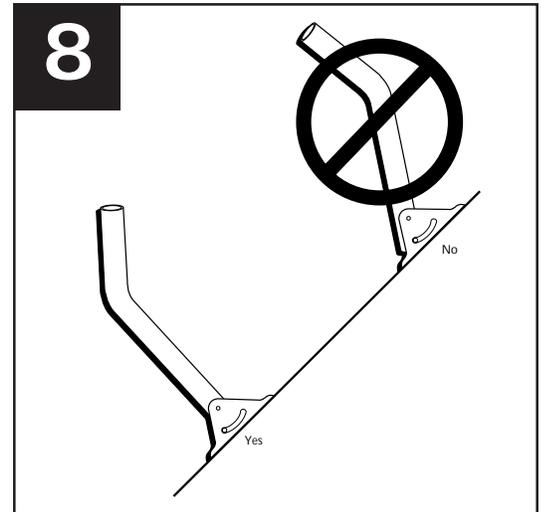
4. Use a pencil to mark the six holes in the mounting foot.
5. Remove the mounting foot and drill a 1/8" hole in the two center line locations you marked.
6. Drill four 3/16" holes in the four outside corner locations you marked.

### Hint

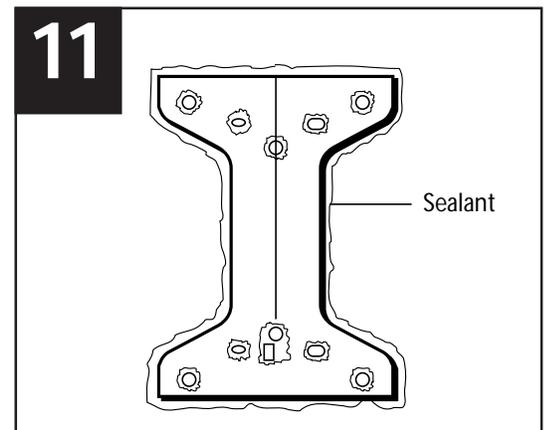
Use the nails in the facing board to locate the rafters.

# MOUNTING THE MAST

7. Fill all six holes with a small amount of roof sealant.
8. Use a 7/16" wrench to loosen the nuts on the mounting foot so you can rotate the mast to access both of the center mounting holes.



9. Hold the mounting foot over the holes so the top part of the mast will rotate and point straight up.
10. Use two 5/16" x 3" lag screws in each of the centerline holes to attach the mounting foot to the roof. Secure the four outside corner holes with four 1/4" x 2" lag screws. Securely tighten all six screws.
11. Seal the mounting foot with roof sealant. When applying the sealant, make sure you seal the areas shown.



12. Go to "Final Approach" on page 63.



# FINAL APPROACH

## Here's the stuff you'll do to finish up the DSS® Installation:

- Route coaxial cable from the LNB to a ground block and from the ground block to the receiver.
- Ground both the satellite dish and the coaxial cables.
- Position the satellite dish to receive the best possible signal for your location.

## Materials Needed in this Section:

- (2) RG-6 coaxial cables (lengths as estimated previously)
- (2) grounding wires (#10 copper or #8 aluminum wire, lengths as estimated previously)
- (2) grounding rod clamps
- (1) grounding clamp adjustable to 1-1/2" (for pole mount only)
- (1) grounding block
- cable ties
- cable clips
- silicone grease
- phone cord

## Tools Needed in this Section:

- compass
- 7/16" wrench
- Phillips-head screwdriver
- bubble level
- drill with 1/2" wood drill bit

## 1 FIRST THINGS FIRST



## 2 SOME INDOOR STUFF



## 3 SOME OUTDOOR STUFF



## 4 TESTING THE SYSTEM



## 5 MOUNTING THE MAST



## 6 FINAL APPROACH

### CAUTION

Use caution when installing, adjusting or dismantling the dish and mast. The weight of the dish may cause the dish and mast to swing down and strike you, a bystander or nearby objects. This could cause personal injury or damage to the dish. Never insert your fingers inside the mast. Always grip the mast around its outside circumference.

# FINAL APPROACH

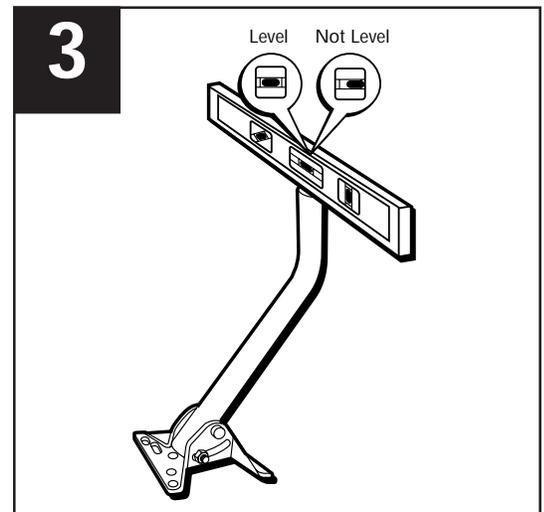
## LEVELING THE MAST

**Leveling the mast is one of the most important steps in installation.** If the mast is not level, the elevation and azimuth settings will not be accurate. This will make it difficult to obtain the satellite signal.

The mast must be level in both the side-to-side and the front-to-back directions. The side-to-side leveling determines whether the mounting foot is level. The front-to-back leveling determines whether the mast is level.

## LEVELING SIDE-TO-SIDE

1. If you have used a pole mount, you should have already leveled the pole. Skip to "Final Dish Assembly" on page 66.
2. If you mounted the mast on a vertical surface, such as a wall, you leveled the mast side-to-side when you mounted the mast foot. Skip to "Leveling Front-to-Back" on the next page.
3. To check whether the mast is level side-to-side, place a bubble level on the mast as shown in the figure.



# FINAL APPROACH

4. Is the bubble centered in the level's window?

**YES**

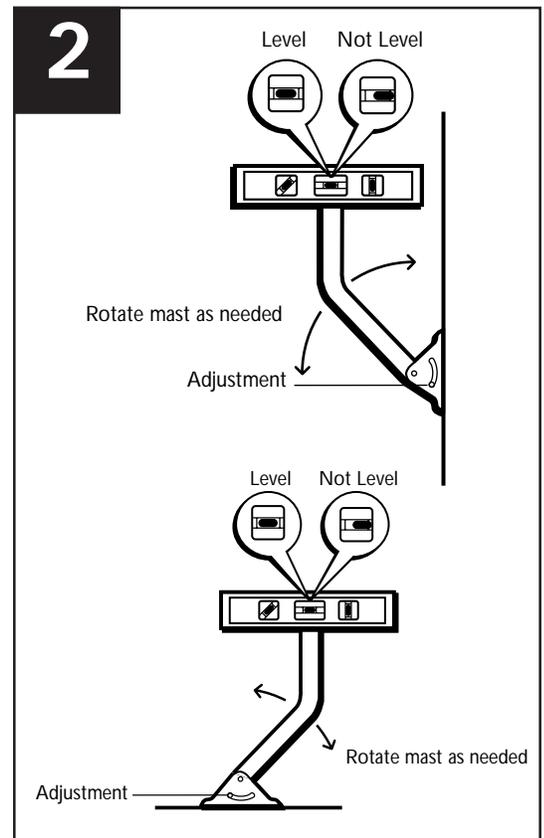
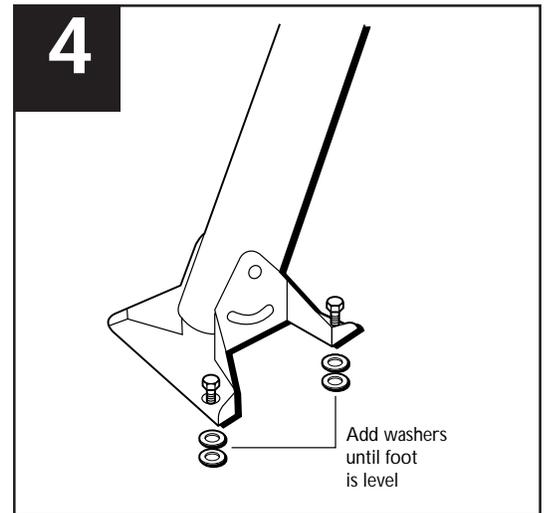
Continue to "Leveling Front-to-Back".

**NO**

- If the bubble is not centered, determine which side of the mounting foot needs to be raised.
- Unscrew the lag or machine screws from that side of the mounting foot.
- Place 5/16" washers between the mounting foot and the mounting surface. Use enough washers to level the mounting foot.
- Secure the mounting foot with the lag or machine screws.

## LEVELING FRONT-TO-BACK

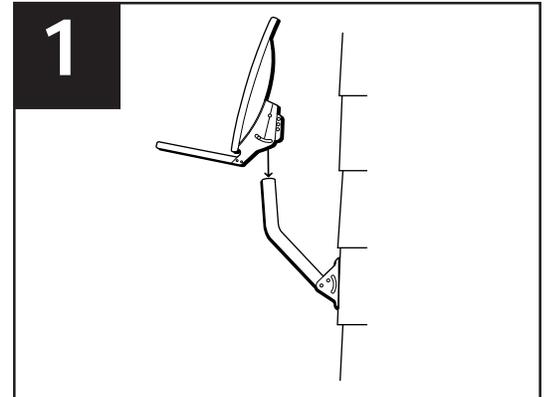
- Loosen the two bolts securing the mast to the mounting foot so the mast moves freely.
- Place a bubble level on the mast as shown in the figure. Move the mast so the bubble is centered in the level's window.
- Tighten the two bolts securing the mast to the mounting foot.



# FINAL APPROACH

## FINAL DISH ASSEMBLY

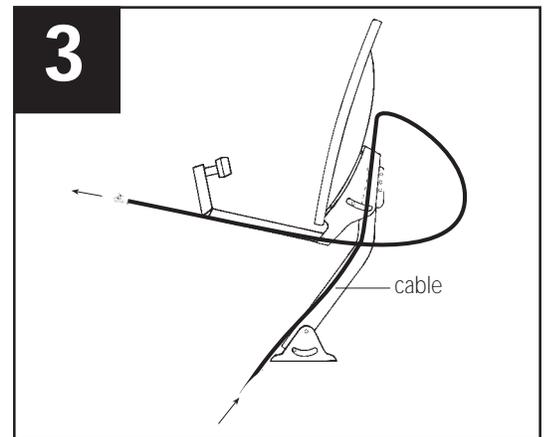
1. Place the dish-LNB arm assembly on top of the mast.



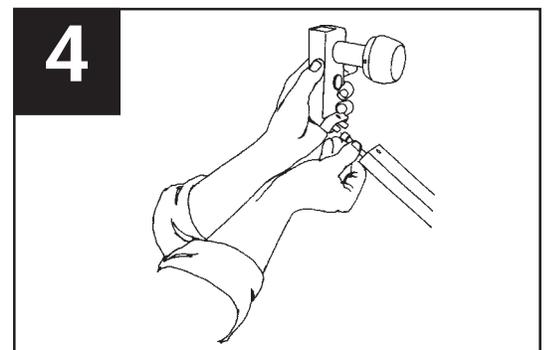
2. Find the length of RG-6 coaxial cable that will extend from the satellite dish to the cable's point of entry into the house.

If the distance of the RG-6 coaxial cable is greater than 112 feet you may need to break up the lengths of cable and connect them with a in-line amplifier to ensure a high signal strength. The in-line amplifier must be attached at a location inside the house.

3. Push the coaxial cable through the bottom of the mast and out the top. Pull about 2 feet of cable out of the top. Loop the cable and push it through the LNB support arm as shown.

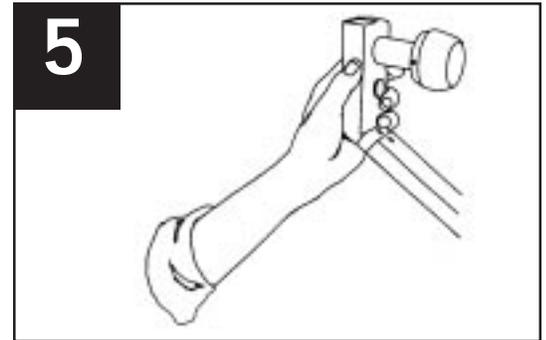


4. Place some silicone grease on the LNB connector and connect the end of the coaxial cable to the LNB.



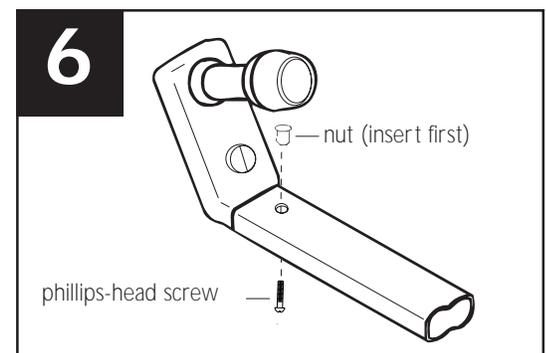
# FINAL APPROACH

5. Insert the end of the LNB into the end of the LNB support arm (push any extra coaxial cable back through the support arm).



6. Find the special hex retainer nut and insert it into the LNB mounting hole on top of the LNB support arm.

**Hint:** The hex retainer nut must be inserted into the top of LNB before the phillips head screw is inserted into the bottom of the LNB, otherwise it is very difficult to thread the screw to the nut.



7. Find the phillips head screw and insert it into the LNB mounting hole from the bottom of the LNB support arm. Tighten the screw with a screwdriver

8. Find the length of ground wire that will reach from the satellite dish to the central building ground.

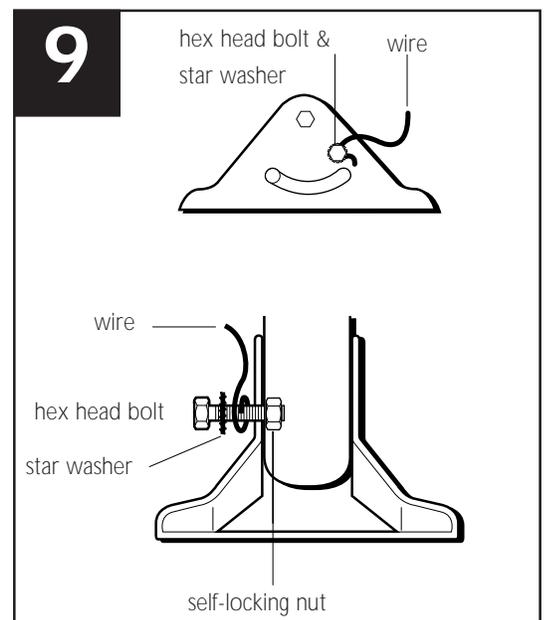
9. Do you have a pole mount?

## YES

Attach the grounding wire to the metal pole using a 1-1/2" grounding clamp.

## NO

- Find the 1/4" hex head bolt, the 1/4" self-locking nut, and the star washer that came in the hardware packet.
- Place the washer on the bolt, place the bolt in the hole in the foot of the mast and loosely attach the nut to the bolt.
- Wrap the ground wire around the bolt between the star washer and the surface of the mounting foot and tighten the nut.

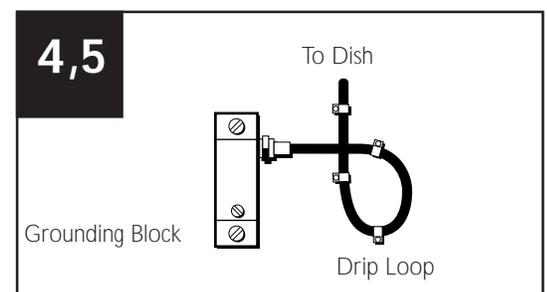
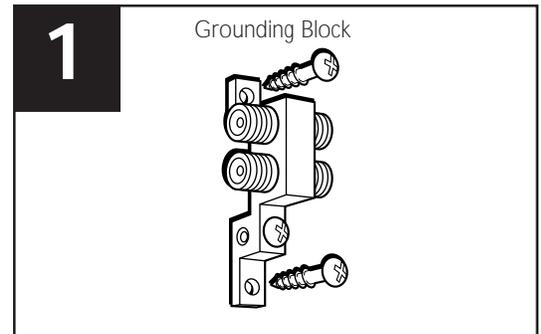


**IMPORTANT** The National Electrical Code specifies that coaxial cable that is exposed to lightning shall be connected to the grounding system of the building as close to the point of cable entry as possible.

# FINAL APPROACH

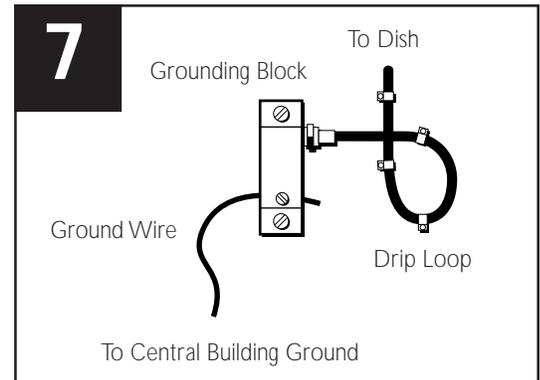
## ROUTING CABLE AND GROUNDING AT THE HOUSE ENTRY POINT

1. Locate a grounding block.
2. Attach the grounding block to the side of your house close to the point you have chosen as the coaxial cable entry point. You may have to use anchors, togglers, or wood screws depending on the surface on which you are mounting the grounding block.
3. Route the coaxial cable extending from the bottom of the mast to the grounding block. A few important reminders:
  - If you are routing the coaxial cable along the ground, make sure the cable is buried deep enough so that it will not be damaged or uncovered.
  - If you are routing the coaxial cable above the ground, use cable clips to secure it to a wall or surface.
  - Make sure you route the coaxial cable in an area where people or animals are not likely to come in contact with the cable.
4. Make a 3" - 5" drip loop using cable clips at the grounding block as shown. This will prevent water from running into the connection at the grounding block.
5. Connect the end of the coaxial cable to the grounding block.
6. Locate the central building ground.



# FINAL APPROACH

7. Locate the grounding wire that will extend from the grounding block to the central building ground. Attach the grounding wire to the grounding block by placing it through the wire hole in the grounding block and tightening the screw.



8. Route the grounding wire from the grounding block to the central building ground.
9. Route the grounding wire you previously attached to the foot of the mast (or to your metal pole) to the central building ground.
10. Ensure that the routing of both grounding wires are secure. Here are a few important reminders:
  - If you are routing the grounding wire along the ground, make sure the wire is buried deep enough so that it will not be damaged or uncovered.
  - If you are routing the grounding wire above the ground, the wire and the coaxial cable should be tied together with cable ties every 3 to 6 feet. Then use cable clips to secure the two to a wall or surface.
  - Make sure you route the grounding wire in an area where people or animals are not likely to come in contact with the cable.

# FINAL APPROACH

## RUNNING CABLE INTO THE HOUSE AND CONNECTING TO THE RECEIVER

1. Drill a 1/2" hole in the location you want the coaxial cable to enter your house.

**CAUTION** Make sure there are no wires or pipes behind the wall in the area of the hole.

2. Locate the RG-6 coaxial cable that will extend from the grounding block to the receiver. Connect one end of the coaxial cable to the grounding block.
3. Make a 3" - 5" drip loop using cable clips at the grounding block as shown.

4. Route the coaxial cable through your house to the back of the receiver. You may route the coaxial cable through a floor or wall or directly to the back of the receiver.

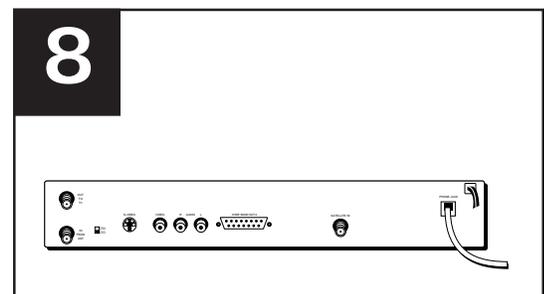
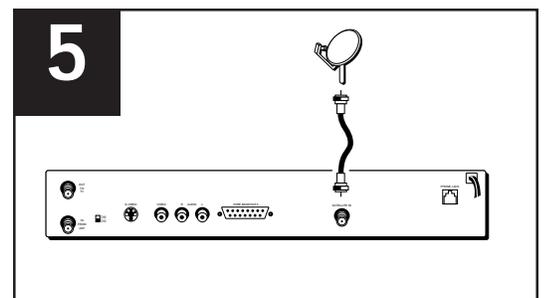
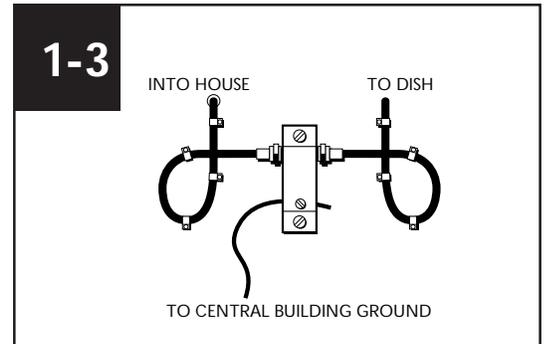
If you are routing through a wall, you may choose to install a wall plate at the point the coaxial cable enters the inside of the house and use a third RG-6 coaxial cable.

5. Connect the RG-6 coaxial cable to the SATELLITE IN jack at the back of the receiver as shown.

DO NOT connect the coaxial cable to the IN FROM ANTENNA jack!

6. Use silicone sealant to seal all outside connections and the hole you drilled for the coaxial cable to enter your house.
7. Take a phone off the hook to prevent electric shock from incoming calls.
8. Connect a phone cord from the back of the receiver to a phone jack in your home (for instructions on connecting the receiver to a phone jack, refer to Appendix B).

**About the Phone Connection** The DSS® receiver calls a 1-800 toll-free telephone number once a month or so to update your access card. It is also used to order pay-per-view events. These calls only take a few seconds.



# FINAL APPROACH

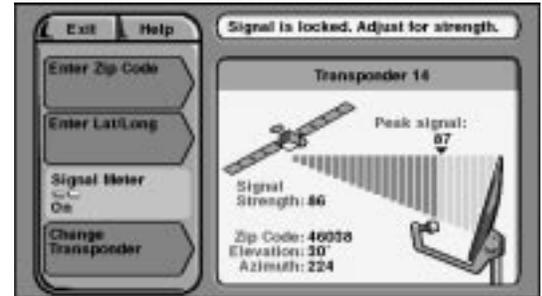
## ACQUIRING AND FINE TUNING THE SATELLITE SIGNAL

The signal strength meter is used to determine whether you are receiving the satellite signal. It also indicates the strength of the satellite signal. (Refer to your User's Manual for information on using the on-screen menus and other features on your DSS® system.)

The signal strength meter produces short, low-pitched tones when you are not locked onto the satellite signal. When you have locked onto the signal, the tones become a continuous, higher-pitched tone.

The meter on the screen displays the strength of the signal you are receiving. The signal strength is also displayed by digits on the screen.

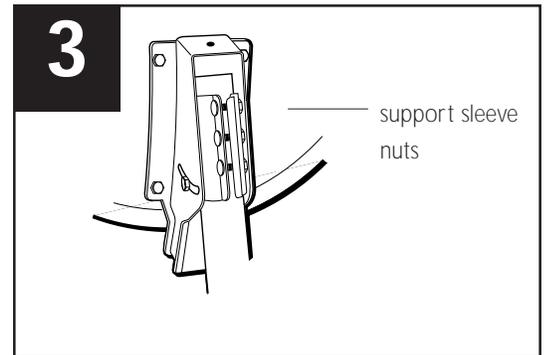
1. Bring up the on-screen signal meter:
  - Turn on your TV and the DSS® receiver.
  - Press DSS on the remote, then press CLEAR.
  - Press MENU•SELECT on the remote to bring up the DSS® Main menu.
  - Point to and select *Dish Pointing*.
  - Point to and select *Signal Meter*.
2. Adjust your TV's volume so that you can hear the signal meter from the dish location. You may want a friend to watch the signal meter and relay the signal strength to you. (I call this the "two-person-point-and-shout" method.)



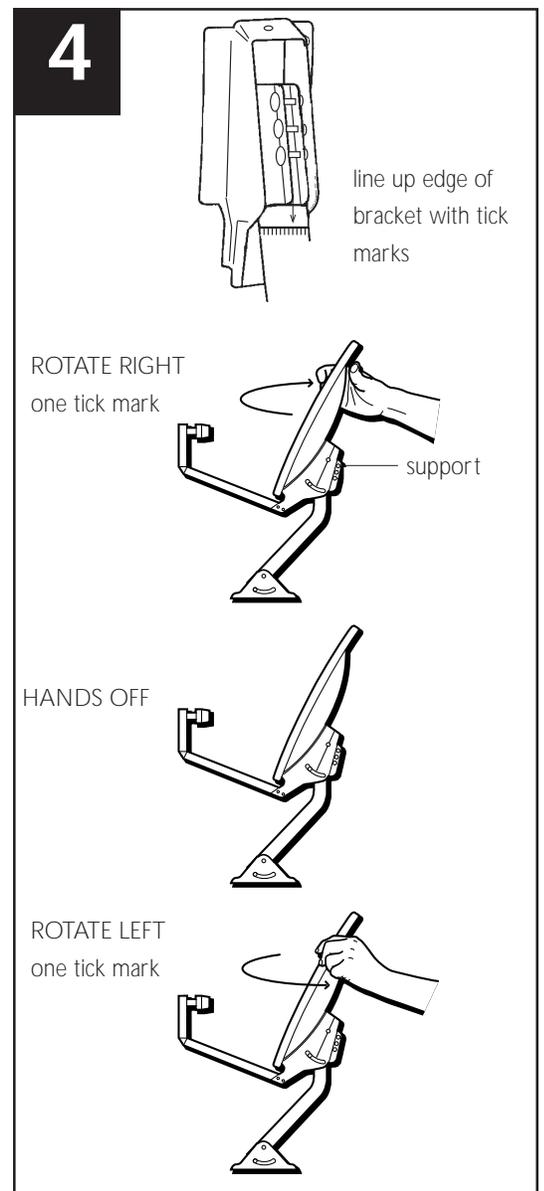
While the maximum signal strength is 100, the signal strength you achieve will probably be less. Although there is no difference in picture quality between a signal strength of 60 and 85, the higher the signal, the less likely you are to experience negative effects in degraded conditions such as rain or snow (called "rain fade").

# FINAL APPROACH

- Using a compass, rotate the dish so that the LNB arm points in the azimuth direction. Loosen the support sleeve nuts as needed.



- If you do not hear a continuous tone, use the following procedure to adjust the dish until you hear one continuous tone:
  - At the top of the mast is a piece of tape with evenly spaced tick marks. Carefully rotate the dish one tick mark to the right and pause for 5 seconds.
  - If you still do not hear a continuous tone, rotate the dish back to the original position and then one tick mark to the left and pause for 5 seconds.
  - Continue rotating the dish one tick mark at a time further right and left from center (making sure to pause for 5 seconds at each position) until you hear the continuous tone.

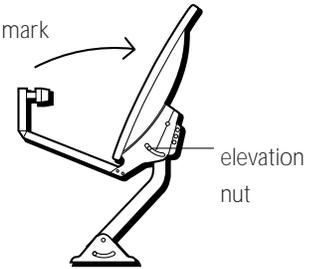


# FINAL APPROACH

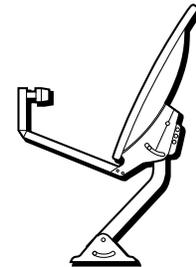
5. AFTER YOU GET A SIGNAL, continue adjusting the azimuth (compass direction) by rotating the dish in small increments left and right until you achieve the highest possible signal strength.
6. Tighten the support sleeve nuts so the dish will not rotate left and right.
7. Slightly loosen the elevation nuts on the LNB support arm so you can adjust the dish up and down.
8. Restart the signal meter.
9. Adjust the elevation of the dish upward and downward until you achieve the highest possible signal strength.
  - Move the dish upward one tick mark, pause for 5 seconds, and check the signal strength.
  - Move the dish downward (back to the original position) and then down one tick mark, pause for 5 seconds, and check the signal strength.
  - When the dish is pointed so the highest signal strength is displayed on the signal meter, tighten the elevation nuts on the LNB support arm.

5-9

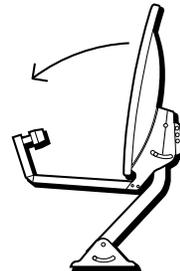
TILT UP  
one tick mark



HANDS OFF



TILT DOWN  
one tick mark



## ORDERING DSS® PROGRAMMING

### Congratulations!

You have successfully completed the installation of your DSS® Satellite Dish Antenna. There is only one step left for you to do before you sit down and start watching TV: Contact the service providers, DIRECTV and USSB, to receive DSS® programming.

**Programming with DIRECTV:** Call 1-800-347-3288.

**Programming with USSB:** Call 1-800-204-USSB.

When you order programming, you need to know your Access Card number. To get the number, select Options from the Main menu, and then select System Test. Wait for the system to run all of it's tests. The Access Card number is displayed at the end of the system test.

#### STILL NO SIGNAL?

If you are unable to achieve a signal, refer to **Appendix A, Troubleshooting**, page 74.

Write the Access Card number in the space below for easy reference:

\_\_\_\_\_

# APPENDIX A: TROUBLESHOOTING

## EVERY INSTRUCTION MANUAL NEEDS A TROUBLESHOOTING SECTION...

...And this is it. Most times, problems experienced with the DSS® system can be corrected quickly and simply.

### DSS® RECEIVER WON'T TURN ON

1. Make sure the problem is not with the receiver — turn on the receiver from the front panel and see if the green light comes on. If the light does NOT come on, continue with step 2. (Make sure the DSS® receiver is plugged in.)
2. Try plugging the receiver into a different electrical outlet.
3. Check the fuse box or circuit breaker of your home.

If there is still no power to the DSS® receiver, turn to Appendix C, *Warranty Information*, for further information on identifying the problem or replacing your DSS® receiver.

### CAN'T BRING UP THE ON-SCREEN MENUS

1. Tune your TV to the correct channel. If during any of these steps you see the programming guide or a message stating “searching for a satellite signal,” then your receiver is connected and working properly. If not, go to Step 5.
  - If you connected the receiver using the S-video or audio/video cables (as shown on pages 12 and 14), tune the TV to the S-video input channel or the video input channel.
  - If you connected the receiver using the RF cable connection (as shown on pages 16 and 18), tune to channel 3 or 4 (depending on how you set the CH3/CH4 switch on the back of the receiver). Press the ANTENNA button on the receiver’s front panel.
2. Make sure that your DSS® receiver is receiving power.
3. Turn the receiver on using the front panel ON/OFF button.
4. Re-check the connections between the DSS® receiver and your television (pages 12-19).
5. If you still cannot access the DSS® system, turn to Appendix C, *Warranty Information*, for further information on identifying the problem or replacing your DSS® receiver.

#### Hint

You may want to try the minimum connection (Connection D on page 18) if you think you may have a problem with any of your cables or you think you may be connecting the system incorrectly.

# TROUBLESHOOTING

## REMOTE PROBLEMS

1. Verify that your DSS® receiver is receiving power.
2. Verify that your TV is set to the correct channel to receive the DSS® signal: the S-video channel, the video input channel, or channel 3 or 4 (depending on how you set the CH3/CH4 switch on the back of the receiver).
3. Verify that you can access the DSS® on-screen menus by pressing MENU/SELECT on the front panel.
4. Turn your receiver off using the ON/OFF button on the front panel.
5. Press DSS on the remote—this should turn the receiver on (the green light should come on) and set the TV to DSS® mode.
6. If you see DSS® programming, the program guide, or a message stating “searching for a satellite signal,” then your remote is working properly. If not, go to Step 7.
7. Make sure there are batteries in the remote. Check to see the batteries are working properly.
8. Verify that you have correctly programmed the remote to work with your TV (page 20).
9. Sometimes a remote control can lock up or behave erratically. To reset the remote, remove the batteries, press and hold the VOL DOWN button for 60 seconds, then replace the batteries.

If the DSS® receiver is working and the system still does not respond to your remote control, there may be a problem with the remote. (Remember, receiver functions can be controlled from the front panel.) Turn to *Appendix C, Warranty Information*, for further information on identifying the problem or replacing your receiver.

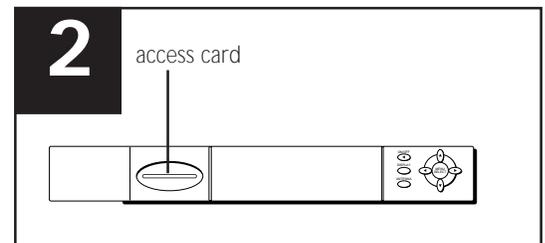
If you remove the batteries from the remote, you may have to reprogram the remote to control your TV. See programming the remote on page 20.

# TROUBLESHOOTING

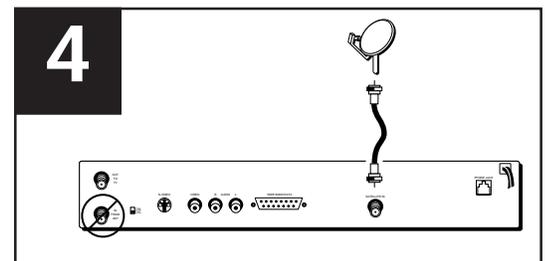
## CAN'T PICK UP THE SATELLITE SIGNAL

Most problems with signal acquisition can be traced to one of these points:

1. Make sure you're using RG-6 coaxial cable to connect the LNB to the grounding block and the grounding block to the DSS® receiver. Standard Cable TV cables (RG-59) will **NOT** transmit the DSS® satellite signal properly. **Important:** Do NOT connect the RG-6 cable from the dish or grounding block to any existing TV cable in your house.
2. Make sure the access card is fully inserted into the access card slot.



3. Check all cable connections to make sure they are securely fastened to the proper connectors, from the TV, to the DSS® receiver, all the way out to the dish LNB.
4. Make sure the cable from the dish to the receiver is connected to the SATELLITE IN jack on the back of the receiver (**NOT** the ANTENNA IN jack).

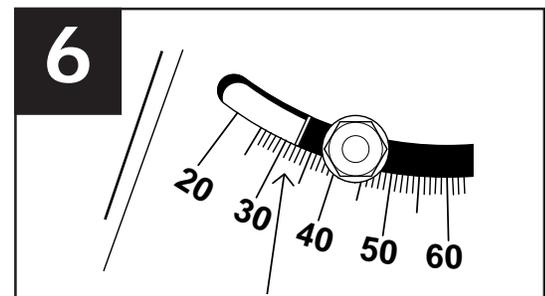


5. Verify that you are using the correct azimuth and elevation for your zip code:  
Choose *Point Dish Using Your Zip Code* and re-enter your zip code. Verify that the elevation and azimuth match those you recorded earlier.

6. Make sure the dish is set to the correct elevation.

Check the elevation setting on the LNB support arm. Make sure the elevation indicator (edge of metal painted white, NOT the washer or the bolt) is set at the elevation you recorded.

Make sure the dish mast is level (pages 64-65).



# TROUBLESHOOTING

7. Use a compass (page 26) to verify that the LNB support arm is pointed toward the azimuth number (compass direction) you recorded.
8. Make sure there are no obstructions (trees, buildings, windows, your body or hands, etc.) that might be interfering with the satellite signal.



9. Bring up the on-screen signal meter and try to acquire the signal again.

Rotate the dish left and right (one tick at a time) pausing at each location for 5 seconds until the signal meter produces one continuous tone.

10. If you can't acquire a signal by rotating the dish left and right, adjust the elevation of the dish.

Return the LNB support arm to the original azimuth (left-to-right compass direction) and tighten one nut on the support sleeve.

Loosen the elevation nuts on the LNB support arm and rotate the dish upward and downward (one tick mark at a time). Pause at each position for 5 seconds until the signal meter produces one continuous tone.

11. If you suspect you have a problem with your RG-6 coaxial cables, consider testing the cable by using it to connect the DSS® receiver to the TV. If you can access the on-screen menu system, the cable should be okay.

If you are still unable to achieve a signal, turn to Appendix C, *Warranty Information*, for more information.

# TROUBLESHOOTING

## TEMPORARY SATELLITE SIGNAL LOSS

If you lose the satellite signal temporarily, the problem can usually be traced to one of these points:

1. **Rain Fade.** Rain fade is a normal, temporary loss of a satellite signal due to the inability of the satellite signal to penetrate unusually heavy clouds, rainfall, or snowfall. Rain fade tends to be brief, lasting only as long as the heavy cloud condition persists.

To minimize rain fade effects, maximize your signal strength. Then, when rain fade occurs, you have the best chances of having a signal that is still strong enough to view.

Also, make sure the dish is mounted securely. The strong winds that accompany rainstorms can move the dish out of position if it is not mounted securely.

2. **Overheated Components.** The DSS® receiver must receive adequate ventilation to work safely and properly. If the receiver overheats, the satellite signal may deteriorate. Do not stack VCRs or other components on top of the DSS® receiver.

## YOU HEAR A DIALING SOUND WHILE TALKING ON THE PHONE

Your DSS® receiver is probably attempting to call the billing center. Under normal conditions, the receiver hangs up any time it detects a voice on the line. However, some phone companies have a dial tone that the receiver may mistakenly interpret as a human voice.

To address this possibility, the receiver is designed to go ahead and call the billing center after four unsuccessful attempts to get a dial tone. If you're using the phone when the receiver calls out, you'll hear a dialing sound. Don't worry: your phone connection will not be broken.

# APPENDIX B: CONNECTING TO A PHONE JACK

## WHY DO YOU NEED A PHONE JACK?

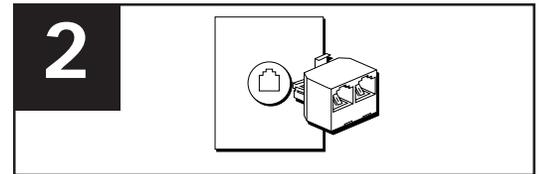
The DSS® receiver calls a 1-800, toll-free telephone number once a month to update your access card. In addition, to easily order pay-per-view events, you should have the DSS® receiver connected to a phone line. These calls only take a few seconds, and the system will usually hang up if you pick up the phone while the receiver is calling out.

There are two options available for connecting your DSS® receiver to a phone line. You may:

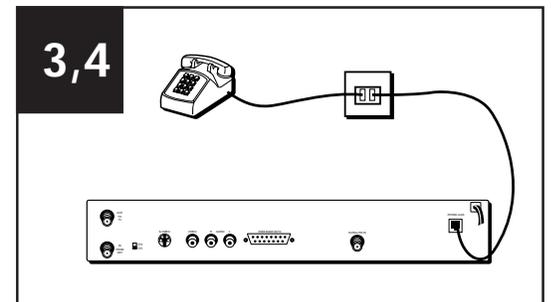
- use a phone jack near your DSS® receiver
- use a DSS® Wireless Phone Jack System

## CONNECTING DIRECTLY TO A PHONE JACK

1. Locate a phone jack near the DSS® receiver.
2. If a phone is already connected to the existing jack, plug in a t-connector.



3. Plug one end of the line cord that will run to the DSS® receiver into the existing jack or t-connector. You will hear a distinct “click” when the lever on the modular plug locks into the jack.
4. Plug the other end of the line cord into the connection on the back of the DSS® receiver labelled “Phone Jack”.



5. Plug any phone lines that were connected to the existing jack into one side of the t-connector.
6. Hang up any phones that you left off-hook.

To connect the DSS® receiver to the phone jack, you will need a telephone line cord that has modular plugs at both ends. The line cord should be long enough to reach from the phone jack to the DSS® receiver.

# CONNECTING TO A PHONE JACK

## USING A DSS® WIRELESS PHONE JACK SYSTEM

Since a phone jack may not be located near your DSS® receiver, the DSS® Wireless Phone Jack system allows you to easily put a phone jack right where you want it. The system consists of a base unit hooked to an existing phone jack and an extension unit that is placed near the DSS® receiver

For more detailed information on installing the DSS® Wireless Phone Jack System, refer to the instructions that come with the system.

### Run the System Test to Check the Phone Connection

The system test will check to ensure the phone line connection to the DSS® receiver is functioning correctly. The system test also performs a signal test, a tuning test, and an access card test.

During the phone test, the receiver checks for a dial tone and performs an internal test. If the phone test does not detect any problems, the message "OK" will be displayed on the screen. However, if the phone test detects a problem, the message "Check phone connections" will be displayed.

To run the system test, press MENU•SELECT on the remote to bring up the Main menu; select *Options*. Select *System Test*.

If the "OK" message is displayed, the wireless phone jack system is working correctly.

### If the phone test finds a problem, do the following:

- Make sure there are no phones off the hook.
- Make sure the phone line modular plugs are properly connected to the jacks. Remember, you will hear a distinct "click" when the lever on the modular plug locks into the jack.
- Make sure the phone jack is working correctly by connecting a working telephone to the phone jack.
- If you installed a new phone jack, make sure the wires at the telephone jack are connected to the correct color-coded screws.

# APPENDIX C: WARRANTY INFORMATION

## DIGITAL SATELLITE SYSTEM (DSS®) LIMITED WARRANTY

### What your warranty covers:

- Any defect in materials or workmanship.
- Basic installation, provided installation is performed by a Thomson Consumer Electronics Authorized Installer.

### For how long after your purchase:

- 90 days - Installation which includes parts and labor.
- 90 days - Unit exchange, which includes parts and labor.
- 91 days to 1 year – Unit exchange, which includes parts only; you pay the labor.

### What we will do:

- During the initial 90 days:  
Exchange the defective portion of your DSS® with a new or, at our option, refurbished unit and correct any basic installation defects at no cost to you.
- After the 90 days and within one year:  
Exchange the defective portion of your DSS® with a new or, at our option, refurbished unit. We will bill you a flat exchange charge to replace a defective receiver. This charge covers the labor cost for its repair. Labor costs for the removal and re-installation of any equipment are your responsibility.

### How you get service:

- Call 1-800-679-4776 and have your unit's date of purchase and model/serial number ready. The model/serial number information is on the back of your receiver.
- A representative will troubleshoot your problem over the phone.
- If the representative determines that you should receive a replacement receiver you will be provided with a Return Authorization (RA) number and the location of a nearby exchange point if one exists. No returns will be accepted without the RA number.
- If the representative determines that your antenna/dish is defective they will arrange for its repair or replacement.
- If the representative determines that installation is defective they will arrange for its repair.

### To receive a replacement receiver before you return yours:

#### If you are located near an exchange point:

1. We will send a replacement unit to our exchange point next business day delivery in the continental U.S.A.
2. The exchange location will notify you of its arrival.

# WARRANTY INFORMATION

3. Take your unit and your evidence of purchase date, such as a bill of sale, to the exchange location and you will be provided the new or refurbished unit. Please retain all accessories such as the remote control hand unit.
4. If the repairs are covered by your warranty, you will not be billed.

## **If you are *not* located near an exchange point:**

1. Provide your Discover, Mastercard, or Visa account number and expiration date to your phone representative. This is for security purposes only and your account will not be charged at this time.
2. We will send you a replacement unit next business day delivery in the continental U.S.A.
3. If you return the unit to us within 14 days from the date you were provided an RA number, only items not covered by warranty will be charged to your account. If your unit is not received within 14 days, the suggested retail value of the receiver will be charged to your credit card. This amount will be credited if the unit is subsequently received.
4. Ship your defective unit back to us using the replacement unit's carton. Shipping instructions will be included on the carton along with your RA number which will allow you to easily ship the unit back to us. Make sure you insure your shipment in case of damage or loss. Include with the shipment:
  - Evidence of purchase date such as a bill of sale.
  - A brief note describing the receiver's problem.
  - Your name, address, and phone number.

Thomson assumes no responsibility of warranty shipments from the customer to the factory if not shipped in the manner prescribed by Thomson.

## **To receive a replacement receiver after we have received your unit:**

- Write the RA number on the outside of the carton used to return the unit. Make sure you insure your shipment in case of damage or loss.
- Carefully pack the unit using the original box and packing material if possible. Please retain all accessories that were included with your unit such as the remote control hand unit.
- Include with the shipment:
  - Evidence of purchase date such as a bill of sale.
  - A brief note describing the receiver's problem.
  - Your name, address, and phone number.
- Include a cashier's check or money order for payment if there are any out of warranty labor or parts charges which were indicated by the representative, and you elect not to use your credit card.
- After we receive your product, a new or refurbished unit will be shipped to you next business day delivery in the continental U.S.A.

# WARRANTY INFORMATION

## What your warranty *does not* cover:

- Acts of God, such as but not limited to lightning damage.
- Adjustment of customer controls.
- Damage from misuse or neglect.
- A unit that has been modified or incorporated into other products or is used for institutional or other commercial purposes.
- Batteries.
- Units purchased, serviced, or operated outside the USA. Only the DSS® receiver is covered by this warranty if the system is purchased in the state of Alaska.
- Loss of programming.
- Shipping damage if the unit was not packed and shipped in the manner prescribed by Thomson.
- Storage fees may be charged by the exchange point if you fail to pick up the replacement unit in a timely manner.
- Any installation other than a basic installation. A basic installation consists of:
  - Antenna mounted to a single family dwelling using 100 ft. or less of cable.
  - Antenna grounded to meet National Electrical Code (NEC).
  - Routing of the cabling through a normal frame structure or only one layer of masonry.
  - One TV connected to the antenna.
  - A telephone cable and connection installed at the connected TV.
- Installations performed by anyone other than Thomson Consumer Electronics Authorized Installers.

## Product Registration:

- Please complete and mail the Product Registration Card packed with your DSS® product. It will make it easier to contact you should it ever be necessary. The return of the card is not required for warranty coverage.

## How state law relates to this warranty:

- This warranty gives you specific legal rights, and you may have other rights that vary from state to state.

## If you purchased your product outside the USA:

- This warranty does not apply. Contact your dealer for warranty information.

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**THOMSON CONSUMER ELECTRONICS**

## CREATING A GREENER FUTURE

At **Thomson Consumer Electronics** we are dedicated to the preservation of our natural heritage and to a healthy and safe way of life for current and future generations. This is a global effort which encompasses every THOMSON facility throughout the world.

We believe that clean air, clean water, a protected earth, and healthy people are not only practical and desirable goals, but achievable ones as well. Our Corporate Environmental, Health and Safety Charter acknowledges our commitment to protect these precious assets and provides a challenging vision and guideline for conducting our business.

Below are a few examples of Thomson's achievements in our efforts to preserve our natural resources.

### The Earth

Thomson reclaims millions of pounds of hazardous waste annually, diverting it from landfills.

Thomson treats millions of pounds of hazardous waste annually and renders it nonhazardous.

Thomson recycles over 50 million pounds of nonhazardous material annually that otherwise would have been treated as trash, an overall recovery rate of 50%.

Thomson globally recycles millions of pounds of broken television picture tube glass annually through both internal and external reclaim processes.

### The Air

Thomson has replaced solvent based paints at many locations resulting in an 80% reduction in toxic air emissions for equivalent material used.

Thomson has eliminated the use of ozone depleting substances at television manufacturing facilities around the world.

Thomson collects and returns over 1.5 million pounds of air pollution control dust to the glass making process annually.

Thomson has launched worldwide energy savings programs which contribute to efforts to reduce air emissions from electrical generating facilities.

### The Water

Thomson recovers over 2 million pounds of fine glass particles from process water each year and recycles them back into its glass furnaces.

Thomson's state-of-the-art waste water treatment plants filter out over 26 million pounds of solids from process water each year.

Thomson U.S. glass factory recycles 2,500 gallons of water per minute and cleans 2.6 million gallons of water per day.

Thomson is researching new processes and is developing new manufacturing equipment and technologies to further reduce large volume water use.

**Thomson** has also increased its usage of recycled materials for packaging of our products. For example, in the U.S. and Mexico our television plants use recycled content in our television cartons and instruction booklet. The inks used for the print on cartons and instruction booklets is soy based and nontoxic. For a free brochure regarding Thomson's Environmental Health and Safety Programs, write to Thomson Consumer Electronics' address below, attention Environmental Programs: INH340.

Please do not send any products to the Indianapolis address listed in this manual or on the carton. This will only add delays in service for your product.

**THOMSON CONSUMER ELECTRONICS**

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