Cruise TV

M-01345

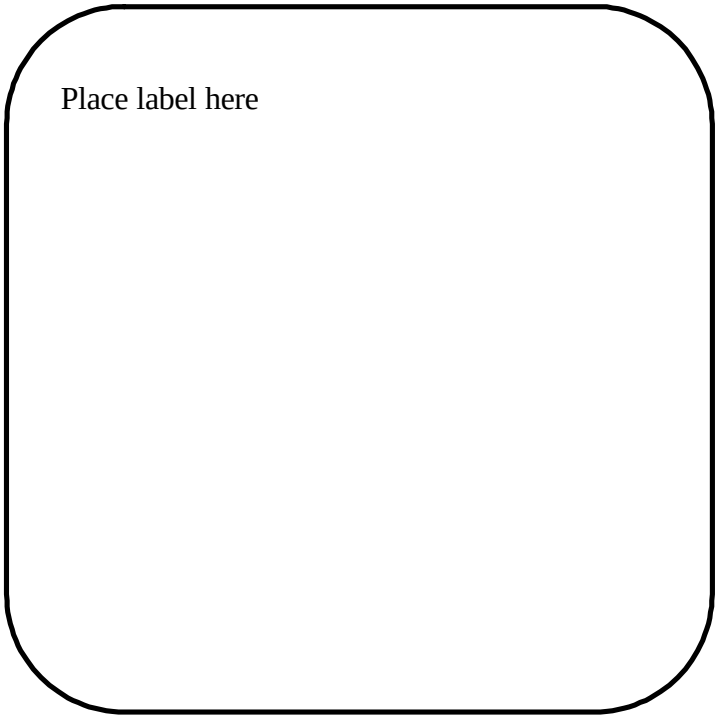
DBS-30500® *Mobile*

Mobile Satellite Television System

User's Guide

NOTICE!!
Important Warranty Information

Keep this User Guide with the Antenna System at all times.



For Customer Service, contact your Authorized ***Cruise TV*** Dealer or call ***Cruise TV*** Technical Support at 1-877-845-8750.

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1. Welcome

Thank you for purchasing ***Cruise TV***'s DBS-30500 Mobile Satellite Television System. You now own one of the most advanced automatic satellite systems available, providing access to over 200 channels of digital television and CD quality audio programming.

1.1 Features of your DBS-30500

- One touch antenna deployment and stowing
- Automatic signal acquisition from anywhere in the Continental United States with a clear view to the satellite
- Satellite location memory for redeployment
- Automatic antenna alignment and calibration
- Automatic power interruption recovery
- Power stow indicator
- On-screen error and status reporting
- Compatibility with most satellite receivers equipped with a wide band dataport
- Semi-automatic mode works with any receiver (no wideband dataport required)

This User's Guide describes the operation and use of the DBS-30500 Mobile Satellite Television System. Operation of your satellite receiver is covered in your receiver's operating instructions.

Please take the time to read this booklet completely, as well as the instructions for your satellite receiver before you begin operation.

2. System Overview

Your ***Cruise TV*** DBS-30500 is an automatic limited-motion satellite television system specifically designed for use with the new high-power DBS television satellites. These satellites have revolutionized television in the United States and have made DBS television receiving systems the fastest selling consumer electronics product in history.

The DBS-30500 has been designed for simplicity of operation. It incorporates the latest solid state satellite tracking technology with advanced computer software to give you, our customer, true value and years of entertainment enjoyment.

The ***Cruise TV*** DBS-30500 was designed and has been manufactured from the same technology as found in satellite-tracking systems for military and commercial customers worldwide, since 1969**.** This experience has created this revolutionary new satellite television receiving system.

The DBS-30500 has three main parts, the Antenna-Pedestal Assembly, the Antenna Control Unit (ACU) and the Satellite Receiver. Since your DBS-30500 was probably installed by a ***Cruise TV*** dealer, we will give you some background on each part of the system.

2.1 Antenna-Pedestal Assembly

The DBS-30500 antenna uses a powder coated 18" parabolic reflector (dish) and a LNBF to receive the DBS satellite's signals. The antenna's drive motors are covered by a low-profile protective cover to keep out the elements. The antenna is automatically pointed at the satellite by the antenna control unit (ACU) while the vehicle is at rest. The antenna assembly can be permanently mounted to your vehicle or installed by your dealer so that it is removable.

2.2 Antenna Control Unit (ACU)

The ACU is located below deck, close to your satellite receiver. The ACU contains the computer and control electronics that permit the antenna to accurately locate and point at the satellite.

The ACU has small cooling slots in its case. You should know where the ACU has been installed so you can make sure no items have been stacked on it or packed around it that would prevent it from self-cooling.

2.3 Satellite Receiver

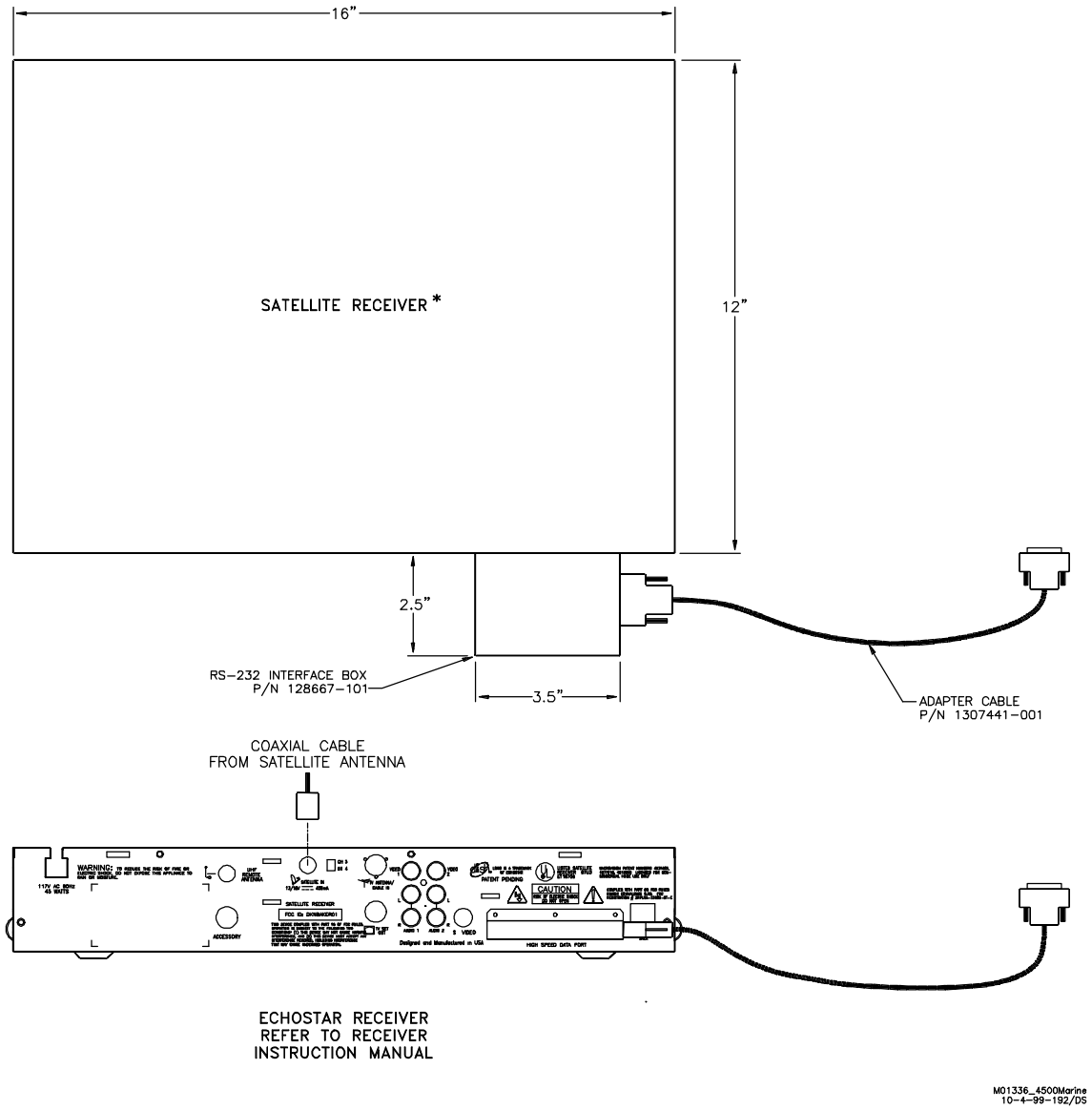
The last main part of the system, other than your TV, is the satellite receiver. The receiver is the same type of unit you would use to view DBS television in your home. Take care to ensure that your receiver is not covered by any item that could prevent it from cooling. The DBS-30500 will work with DISH Network™ or DIRECTV®. A list of compatible satellite receivers can be found at the end of this guide.

2.4 Connecting the Antenna to the Identified Receiver and Antenna Control Unit

- Turn off all power to system.
- Unplug the satellite receiver AC power cord from the power source.
- Connect the coaxial cable from the satellite antenna to the SATELLITE IN jack on the back of the receiver.

2.5 Optional EchoStar™ Upgrade

To use the DBS-30500 with an EchoStar™ Receiver you must order EchoStar™ Upgrade Kit, P/N 130742-102.



***NOTE**: Satellite receiver not included in upgrade kit.

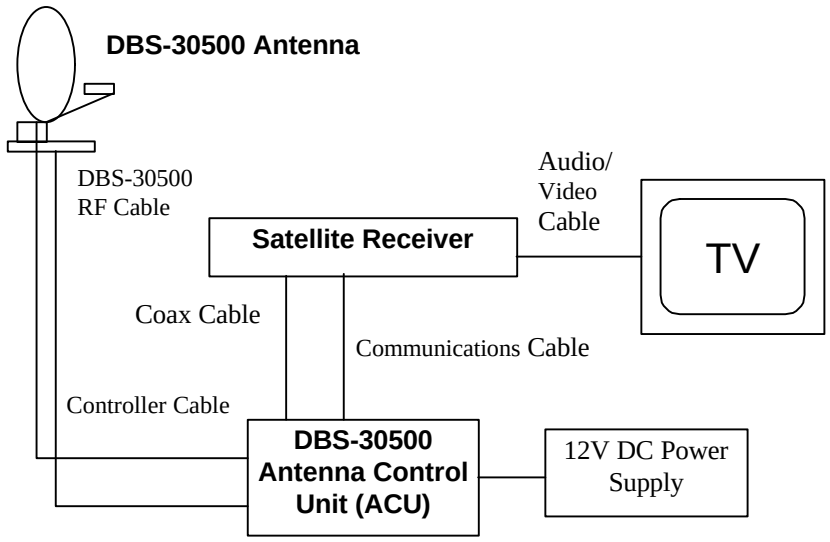


Figure 1. Diagram of DBS-30500 Antenna System Connections

3. Specifications

3.1 Mechanical

Reflector Diameter	18”
Roof Hole Size (cable)	.5/8”
Frequency Range	12.2-12.7 GHz
Material	Steel
Finish	White Powdercoat
Operating Temperature	-15°F - +140°F
Operating Wind Level	45 MPH in power-off fixed mode
Height Stowed	9”
Height Raised	28.4”
LNBF	ALPS or equivalent
Antenna Movement	365° Azimuth, 140° Elevation
Weight	25.5 lbs.
Mounting Footprint	15” Diameter

3.2 Electrical

Operating Voltage	12VDC nominal
Operating Current	3 Amps DC nominal
	4 Amps DC maximum

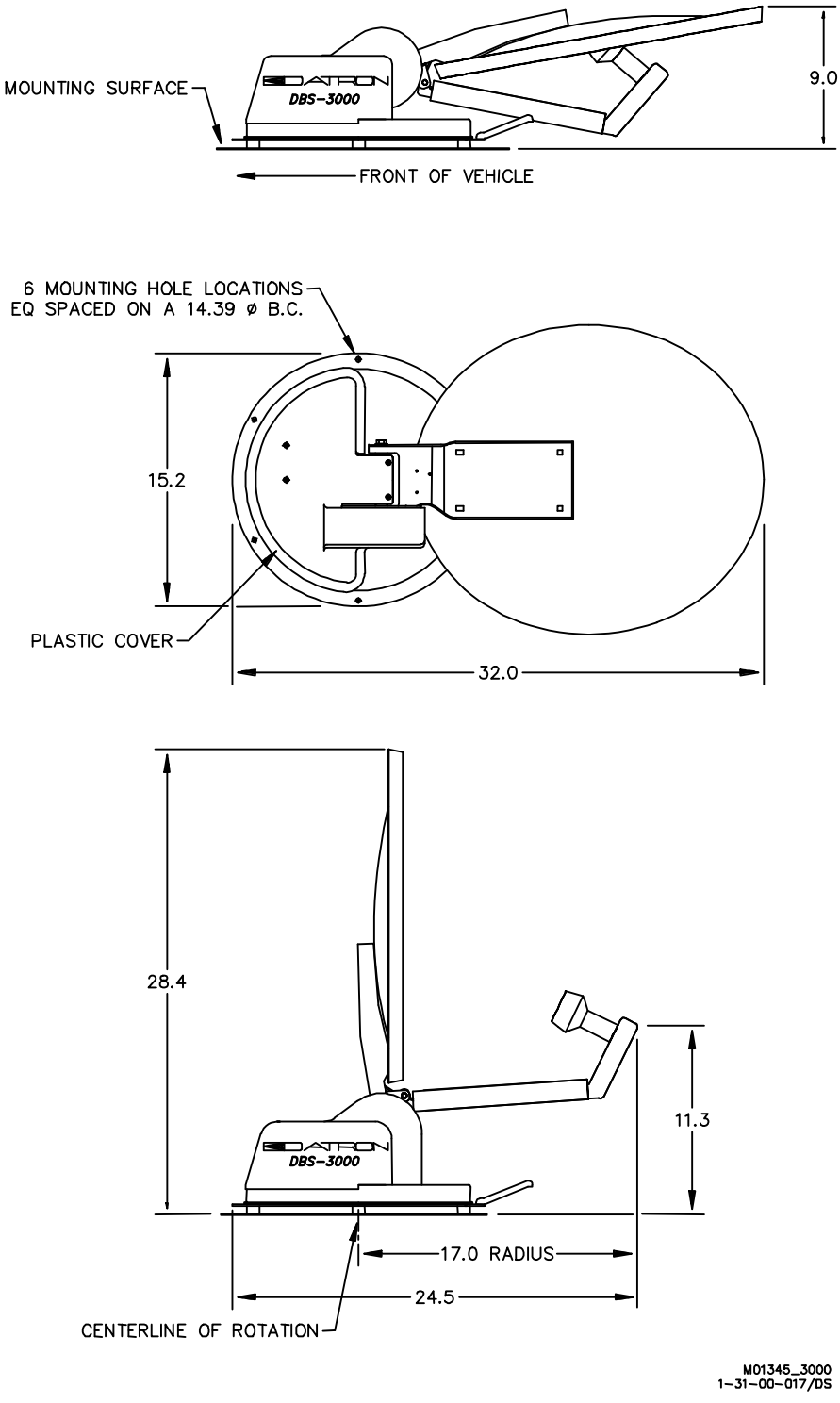

MOUNTING SURFACE
DBS-3000
9.0
FRONT OF VEHICLE
6 MOUNTING HOLE LOCATIONS
EQ SPACED ON A 14.39 ø B.C.
15.2
PLASTIC COVER
32.0
28.4
DBS-3000
11.3
17.0 RADIUS
24.5
CENTERLINE OF ROTATION
M01345_3000
1-31-00-017/DS

Figure 2

4. System Operation

This section describes the operation of the DBS-30500 satellite system. It does not focus on the operation of the receiver, except where it pertains directly to the operation of the DBS-30500 satellite system. For questions about your satellite receiver, please refer to the receiver's operating instructions.

4.1 Choosing a Location

It is important that your vehicle have an unobstructed view of the southern sky. Trees, mountains, buildings and other objects can prevent the satellite's signal from reaching the DBS-30500.

Also, please note that when the DBS-30500 is searching for the satellite signal, the angle at which the antenna seems to be pointing (perpendicular to the dish) is 23° lower than the actual angle to the satellite. This is due to the offset of the feed (or LNBF) from the center of the dish, as shown in Figure 3.

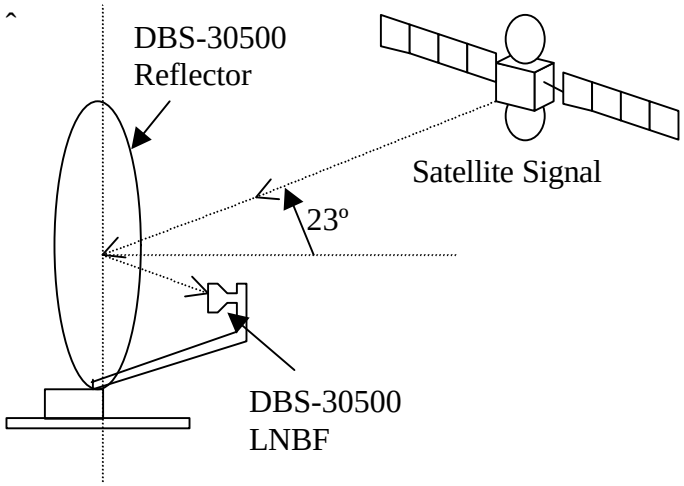


Figure 3. Signal Path Relative to Dish

4.2 Indicators and Controls

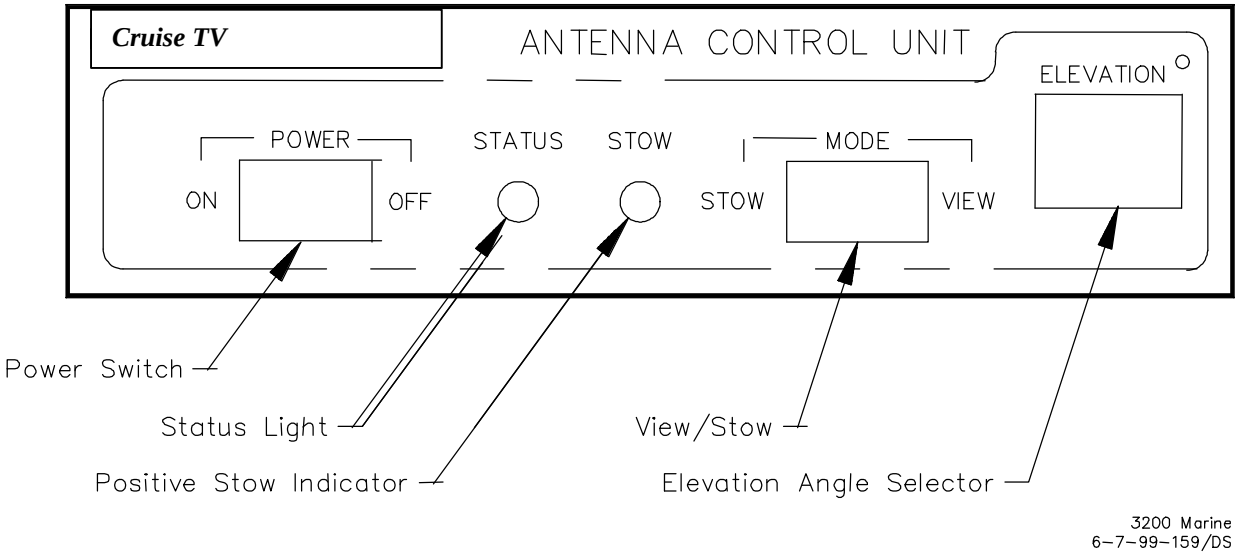


Figure 4. Antenna Control Unit (ACU) Front Panel

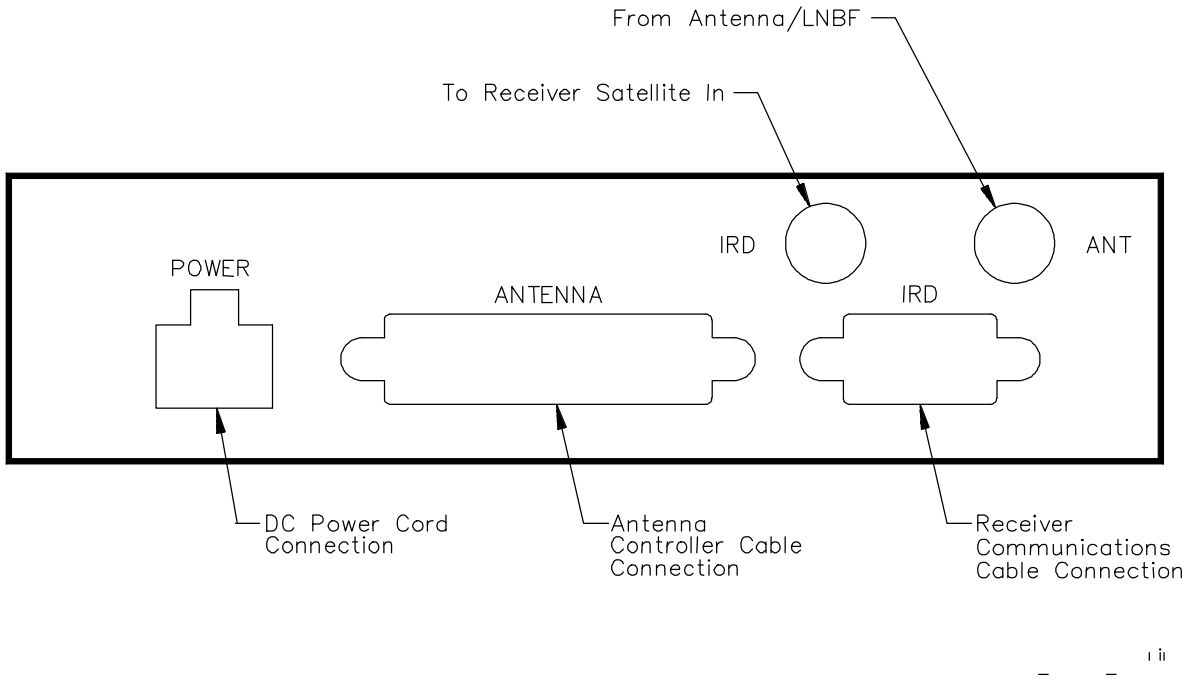


Figure 5. Antenna Control Unit (ACU) Rear Panel Connections

4.3 Turning on the System

Before powering on the system check to see that all of the cables on the rear of the antenna control unit (ACU) are engaged and secure. To apply power to the system, toggle the power switch to the ON position. The Status light will begin to blink slowly (approximately once per second). This indicates the system has power applied and is in idle mode.

To turn off power, return the power switch to the **OFF** position. The ACU status light will turn off.

4.4 Determining Satellite Elevation

Entering an angle to the satellite allows your system to acquire the signal very quickly. Acquisition will usually occur in less than two (2) minutes if you enter your elevation correctly. There are two ways of determining the elevation value to enter on the Elevation Angle Selector of the ACU's front panel. For DIRECTV at 101° West, use the map of the United States located on the back cover of this guide. Locate your position on the map and determine the elevation line closest to your location. Read the elevation value of the elevation line. This is the number to be entered on the front panel.

Alternatively, for DISH Network™ or DIRECTV®, if you know your ZIP code or your current latitude and longitude, your receiver has a menu selection that calculates the elevation angle. See your receiver's operating instructions for details.

4.5 Entering Satellite Elevation

Enter the elevation angle into the Elevation Angle Selector by pressing the buttons located directly above and below each digit of the Selector. Pressing the button below increases the digit and pressing the button above decreases the digit.

Elevation values less than 10 or greater than 65 are not valid. The automatic acquisition feature will not operate without a valid elevation angle. Even if you are a few degrees off in your entry of the elevation angle, the antenna will still locate the satellite signal. An accurate angle will allow faster acquisition. See the section "Automatic Satellite Signal Acquisition and Peaking" for more details.

The advantage of entering the correct elevation angle is that the system will generally locate the satellite signal on its first azimuth sweep. Altogether, the DBS-30500 will make 8 complete passes spanning twelve degrees while searching for the satellite's signal when in the set elevation mode.

4.6 Automatic Elevation Determination

An alternative to entering the elevation angle is to set the front panel elevation switches to “00”. This enables a search mode that sweeps the entire sky to find the satellite. While this is the simplest acquisition method, several additional minutes may be required to find the satellite. When in the “00” automatic mode the system will search the entire viewable sky until the signal is found.

4.7 Deploying and Stowing the Antenna

The antenna has two primary positions, deployed (Figure 6) or stowed (Figure 7) for traveling.

After entering a valid elevation angle, or setting “00”, you are ready to deploy the antenna. Place the View/Stow Switch into the view position by pressing the side of the switch marked **VIEW**. The satellite receiver will automatically turn on and the antenna will begin moving. The antenna will self-calibrate the first time the system is placed into View mode after power has been applied. The antenna will move to its maximum elevation (vertical) pointing angle and its minimum azimuth (horizontal) pointing angle. After calibration, the system automatically begins locating the satellite signal.

This is a good time to make sure your TV set is turned on and set for Video or Auxiliary input (whichever your receiver is plugged into). You may have to switch your TV to a particular channel if the receiver is connected to the RF input of your TV. See your receiver’s operating manual for more details.

To stow the antenna at any time, move the View/Stow Switch to the stow position by pressing the side of the switch marked **STOW**.

When the dish is fully stowed, the **STOW** indicator is continuously lit. See the section “The Stow LIGHT” later in this guide.

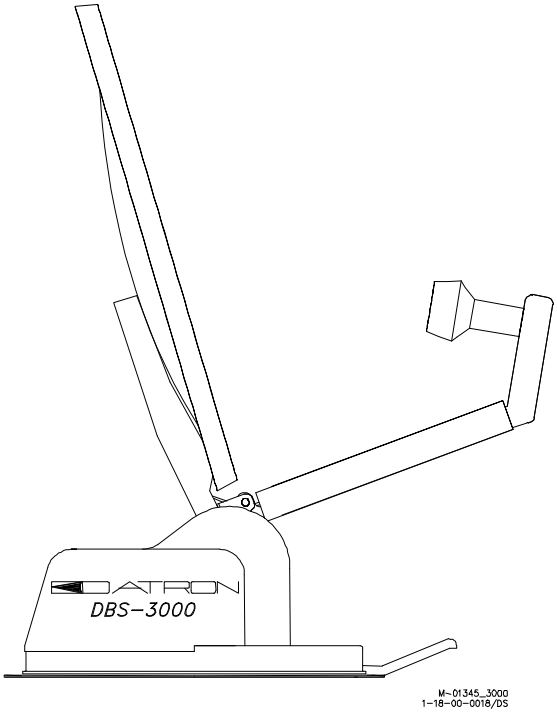


Figure 6. DBS-30500 Deployed

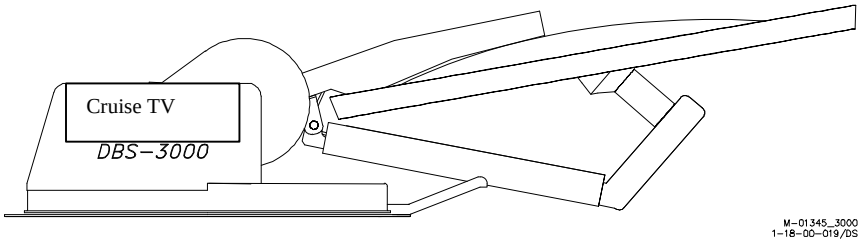


Figure 7. DBS-30500 Stowed

4.8 Automatic Receiver On/Off

The DBS-30500 Antenna Control Unit will automatically switch your satellite receiver on when the antenna is deployed and switch it off when your antenna is fully stowed. You just choose the channel you want to watch!

4.9 What is "Peaking?"

Your DBS-30500 Satellite Television System has the unique ability to precisely locate the strongest part of a satellite's signal, as it is beamed to Earth from space. The strongest part of the satellite signal

is called the signal's "peak." The process of locating the exact azimuth and elevation angle at which the maximum signal strength can be found is called "peaking."

It is similar to looking at a lighted lamp through a straw. The lamp represents the satellite and the straw is your satellite dish. As the straw points closer to the lamp, more light is visible through the straw. When the straw points directly at the center of the lamp, the most light is visible through the straw, and you have found the peak of the lamp's "signal."

Pointing at the signal's peak gives you the best possible reception in all weather conditions.

4.10 Automatic Satellite Signal Acquisition and Peaking

Satellite signal location and peaking is fully automatic. No action on your part is necessary. The rest of this section describes what to expect during the acquisition and peaking process.

Your receiver is tuned to a channel, a message, "Searching for satellite signal," appears. The status light on the antenna control unit will blink on and off evenly about once per second.

When a signal has been located, your receiver will begin displaying the programming for the selected channel and the DBS-30500 will automatically begin finding the exact center of the satellite signal, or peak.

When the system has located the signal peak, the status light will be on solidly, not flashing. The peaking process will usually take less than one minute. More time may be required during adverse weather conditions or if the signal is partially obstructed.

After a picture appears on your TV screen, an attention message may appear indicating that optimum reception was located at an elevation angle different than the one entered on the Elevation Angle Selector of the ACU. This message is an instruction to set the Elevation Angle Selector on the ACU to the specified value. This message will not be displayed if the proper angle has already been entered on the Antenna Control Unit.

You may find that even though you have entered the correct number on the Elevation Angle Selector, the attention message still appears. This may be because your vehicle is not level or the antenna is not mounted level to the vehicle. This is not a problem, and the displayed angle value is simply a correction for the misleveling.

The advantage of entering the correct elevation angle is that the system is virtually guaranteed to locate the satellite signal on its first azimuth sweep and to peak up on the signal more quickly. However, even with elevation angles several degrees from the correct value, the system will still

eventually locate and peak on the DBS signal. Altogether, the DBS-30500 will make eight complete passes spanning twelve degrees searching for the satellite's signal when in the set elevation mode. When in the "00" automatic mode the system will search the entire sky until the signal is found.

The azimuth (horizontal) movement of the antenna may not be perfectly smooth and may pause briefly from time to time during acquisition. **This is normal while locating the satellite signal.**

Helpful Hint: *After the antenna is peaked, the status light on the ACU will glow solidly. If the red light annoys you, turn the ACU power "off." This also saves your vehicle's battery power.*

4.11 Re-Peaking the Satellite Signal

Occasionally, you might find that you want to re-peak the signal manually because your signal level is low. To do this, move the **View/Stow Switch** to the **Stow** position and then back to the **View** position within three seconds. The antenna will not move during the three second wait period. After waiting, if the switch is back in the **View** position, the antenna will begin peaking up on the signal again. The status light will indicate that peaking is in progress by blinking once per second, and be lit longer than unlit. Also, the receiver will be set back to the signal strength screen and will drop back into view mode automatically when peaking is completed. Using this technique in very strong winds may help the quality of your reception.

4.12 Automatic Power Interruption Recovery

You may experience external power interruptions or failures during your use of the DBS-30500 system due to power outages at your campground or a dead battery. When power is restored, the antenna will automatically re-peak on the signal if it is still pointing at the satellite. No user action is required. If you have switched the power off, but left the antenna in view mode, switching the power on again will also re-peak the antenna on the signal.

4.13 The Antenna Status Light

Table 1 defines the modes indicated by the ACU's Status light

Table 1. Status Light Indications		
Mode	**Blink Rate (per second)**	**Description**
Steady off	0	Power switch is off or ACU is not plugged in.
Flashing slowly and evenly	1	Power switch is on. System is stowed and idle.
Flashing slowly, on long/off short	1	Satellite signal has been acquired. System is in peaking/tracking mode.
Flashing medium and evenly	5	Antenna is moving to or from stow or is trying to acquire the satellite signal.
Flashing quickly and evenly	10	Error condition detected. See possible causes in Table 2.

4.14 The Stow Light

Important!

- The Stow light illuminates when the antenna is in the stow position.
- The light goes out when the antenna is no longer stowed.
- **This indicator should be used to ensure the antenna is properly positioned for travel. It is also a good idea to visually check that the antenna is stowed before driving. Driving with the antenna in an operational position may cause damage or destruction to the antenna. Damage from driving with the antenna in an operational position is NOT covered by your warranty.**

4.15 Auto Stow

The DBS-30500 will stow automatically if the satellite signal is lost for 30 seconds. **This is a safety feature only and should not be relied upon for everyday use. Additionally, this feature will not work if the ACU is in the OFF position.**

5. Semi-Automatic Operating Mode

It is now possible to use the DBS-30500 in the semi-automatic mode. This mode allows you to use a DBS or EchoStar receiver that does not support the low speed data port. It is important that you understand that semi-automatic operation requires some user interface during the antenna location and peaking process.

5.1 Locating the Satellite in Semi-Automatic Mode

Turn on your receiver and locate the satellite setup menu screen. Refer to your receiver manual to learn where this menu is located. Once the setup menu is displayed on your video monitor, set the zip code to your current location. The receiver will then display the elevation setting necessary to locate the satellite. Alternatively you may use either the EchoStar or DIRECTV map located at the end of this User's Guide to guide you in the selection of elevation for your area. As a third option you may use an elevation setting of "00" and the DBS-30500 will search the entire sky for the correct satellite. This option is not recommended because the search time in semi-automatic mode could be lengthy.

Load the elevation number into the DBS-30500 ACU front panel using the elevation display panel. Turn on the ACU, and then toggle the Stow/View switch to the **View** position. The status light will begin to flash and the stow light will turn off. The satellite antenna is now searching for a satellite signal. Once a satellite has been found the Status light will stop flashing. Check the video monitor and verify that the correct programming is now displayed on the screen. If the programming is not correct, or there is no picture on the screen, the antenna is likely pointing at the wrong satellite. Toggle the **View/Stow** switch to the **Stow** position then quickly back to the **View** position. The antenna dish will now move away from the current satellite and search for a new satellite signal. Once the correct satellite is found you may leave the ACU on or toggle the power switch to the off position. If the satellite location is incorrect toggle the **View/Stow** switch again until the correct satellite is found.

5.2 Stowing the Antenna

Stowing the antenna in semi-automatic mode is the same as that in automatic mode, simply toggle the **View/Stow** switch to the stow position. Be sure the power switch is on or the antenna will not stow. When the **Stow** light is on the antenna is in stow position ready and secure for travel.

6. Troubleshooting

Error conditions are indicated by a fast flashing Status light on the ACU's front panel. Table 2 describes these error conditions and possible solutions for each.

Table 2. Errors and Possible Solutions

Symptom	Cause	Possible Solution
Status light flashing fast and the receiver is off or is not displaying a message. The antenna is not moving.	The satellite receiver is not responding correctly, if at all, to the ACU's command and status requests.	Make sure the satellite receiver is plugged in to a working outlet. Make sure the communications cable is plugged into the ACU and the satellite receiver.
Status light flashing fast and the receiver's on-screen display shows "Cal Error" *. The antenna is not moving.	Unable to calibrate either the azimuth or elevation axis. Unable to reach the limit switch or the limit switch did not make contact.	Make sure there is nothing preventing the antenna from moving through its full range of motion, such as ropes, structures or stowed objects.
Status light flashing fast and the receiver's on-screen display shows "Acquire Error" *. The antenna is not moving.	Unable to locate a satellite signal within ±5 degrees of the specified elevation.	Make sure the correct elevation angle has been entered into the ACU's Elevation Angle Selector.
Status light flashing fast and the receiver's on-screen display shows "Stow Error" *. The antenna is not moving.	Unable to place the antenna into the stow position. Either the azimuth or elevation limit switch did not engage.	Turn off the power at the ACU, then turn it back on. Place the DBS-3200 into stow. If the problem persists, contact your dealer for service information.
Status light flashing fast and the receiver's on-screen display shows "Bad EL Angle" *. The antenna is not moving.	The value entered on the Elevation Angle Selector is invalid.	Enter a correct elevation angle on the Elevation Angle Selector (10° to 65°). Toggle the Stow/View switch to the Stow position and then back to the View position. The antenna will deploy normally and locate the satellite signal. See "Entering Satellite Elevation" for more details.

***NOTE:** No error messages will be displayed if antenna is used in semi-automatic mode.

All error conditions except the "Stow Error" can be canceled by placing the DBS-30500 into stow. If you have a problem or question about your system, contact your Authorized ***Cruise TV*** Dealer or contact ***Cruise TV*** Technical Support directly by calling 1-877-845-8750.

7. Glossary

The following is a glossary of terms used both within this User Guide and when talking about digital satellite television systems and DIRECTV®.

Azimuth – refers to the azimuth axis, indicating the rotating movement of the antenna about an axis perpendicular to the surface. Looking down on the antenna from above, the azimuth movement is either clockwise or counterclockwise.

Azimuth Angle – the angle from true north or from the vessel's fore and aft center line, in a plane parallel with the surface, to which the antenna is pointing. In general, the angle increases as the antenna turns clockwise, as viewed from above.

DBS – Direct Broadcast Satellite. A special high power TV satellite that broadcasts directly to the consumers.

Satellite Receiver – an electronic device which decodes and processes the data. Usually, this data produces a viewable picture that can be displayed on a television set.

Elevation – usually refers to the elevation axis, indicating a rotating movement of the antenna about an axis parallel to the surface.

Elevation Angle – the angle between the surface and the antenna's pointing angle. The values can range from 0º (parallel with the surface) to 90º (straight up in the sky) to 180º (parallel with the surface again, but in the opposite direction from 0º.)

LNBF – low noise block converter-feed.

Latitude – the angular distance north or south of the equator.

Longitude – the angular distance east or west of the prime meridian at Greenwich, England.

Peak – see *signal peak.*

Peaking – the process of locating the peak signal strength.

Signal Peak – in referencing the DBS-30500 system, it is the position of the antenna at which the signal received by the receiver is strongest.

8. Precautions

- **To avoid injury, keep away from the dish when it is in motion and while it is plugged into the ACU.**
- **Do not open or remove any part of the ACU or the antenna.** There are no user serviceable parts inside.
- **Do not attempt to move the antenna by hand.** Contact your Authorized ***Cruise TV*** Dealer or contact ***Cruise TV*** directly by calling 1-877-845-8750.
- **If you spill or drop anything into the antenna control unit, unplug it and have it checked by qualified personnel at your Authorized *Cruise TV* Dealer before operating it any further.**
- Operate the ACU **only** on 12V DC. Observe polarity on the power connection.
- If you are not going to use the receiver for a long time, be sure to disconnect the receiver from its power source. This will save your batteries if you are operating on an inverter.
- Place the antenna control unit in a location with adequate ventilation to prevent heat build-up.
- **Do not place the antenna control unit in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.**
- Do not place anything on top of the antenna control unit that might block the ventilation holes and cause malfunctions.
- Before connecting other components, be sure to turn off the antenna control unit.
- Clean the antenna control unit, front panel and switches with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzene.

9. Warranty

Cruise TV LLC warrants this product to be free from defects in material and workmanship for two (2) years' parts and one (1) year labor. Proof of purchase in the form of a bill of sale or invoice indicating the product installation date must be presented to obtain warranty service.

Cruise TV liability hereunder is limited to cost of parts for two (2) years and labor costs for one (1) year to replace or repair, at its discretion, any part or parts determined to be defective in material or workmanship. Parts manufactured other than by ***Cruise TV*** are warranted separately by the applicable parts manufacturer.

This warranty does not cover cosmetic damage of a non-functional nature or damage due to acts of God (including but not limited to lightning, windstorm, hail). This warranty also does not cover damage caused by improper voltage regulation. This warranty does not apply if the product has been improperly installed or subjected to misuse, neglect, or accidental damage.

This warranty is invalid if the factory applied serial number has been altered or removed from the product.

Repair or replacement as provided under this warranty is the exclusive remedy of the consumer. ***Cruise TV*** shall not be liable for any incidental or consequential damages for breach of any expressed or implied warranty of this product. In no event will ***Cruise TV*** liability, if any, exceed the purchase price paid (by the direct customer of Cruise TV/ASA, LLC) for the product. **THERE ARE NO WARRANTIES EXPRESSED OR IMPLIED EXCEPT AS STATED HEREIN.**

To locate the authorized dealer nearest you, contact ***Cruise TV*** Technical Service Department at: 1-877-845-8750**.**

10. Cruise TV Satellite System Receiver Compatibility Matrix

Cruise TV Satellite System Receiver Compatibility Matrix

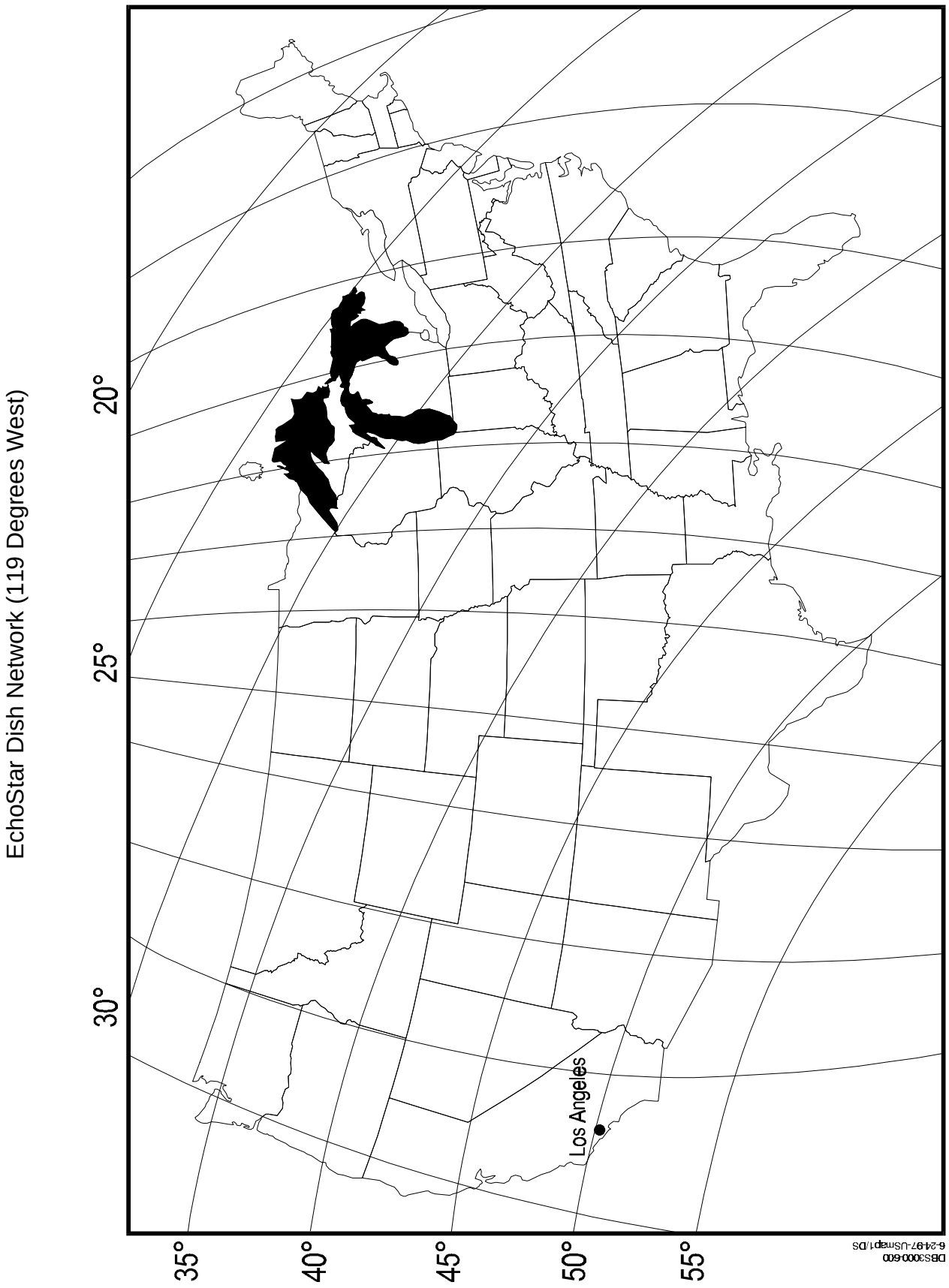
Brand Receiver	DBS-3000 Series DIRECTV/DISH Compatible
SONY	
SAT-B1	Not Compatible
SAT-B2	Not Compatible
SAT-B3	OK - DIRECTV
SAT-A1	OK - DIRECTV
SAT-A2	OK - DIRECTV
SAT-A3	OK - DIRECTV (1)
SAT-A4	OK - DIRECTV (1)
SAT-A50 V7.4	OK - DIRECTV (1) (8)
SAT B50 V7.5	OK - DIRECTV (1) (8)
SAT-A50 V7.68	OK - DIRECTV (1) (8)
SAT B50 V7.68	OK - DIRECTV (1) (8)
SAT-A55 V8.14	OK - DIRECTV (1) (8)
RCA (6)	
DRD122RW	Not Compatible
DRD102RW	Not Compatible
DRD203RW	Not Compatible
DRD203RB	OK - DIRECTV
DRD222RD	OK - DIRECTV (8) (9)
DRD303RA	OK - DIRECTV (10)
DRD403RA	OK - DIRECTV
DRD480RE	OK - DIRECTV (8) (9)
DRD505RB	OK - DIRECTV (10)
DRD523RB	OK - DIRECTV
DRD515RB	OK - DIRECTV (10)
DRD703RA	OK - DIRECTV (10)
HUGHES	
HIRD-A33	OK - DIRECTV (3)
HIRD-D45	OK - DIRECTV
ECHOSTAR	
ISD2350	Not Compatible
ISD4000	OK - DISH (4) (10)
ISD5000	OK - DISH (4) (10)
ISD3350	Not Compatible

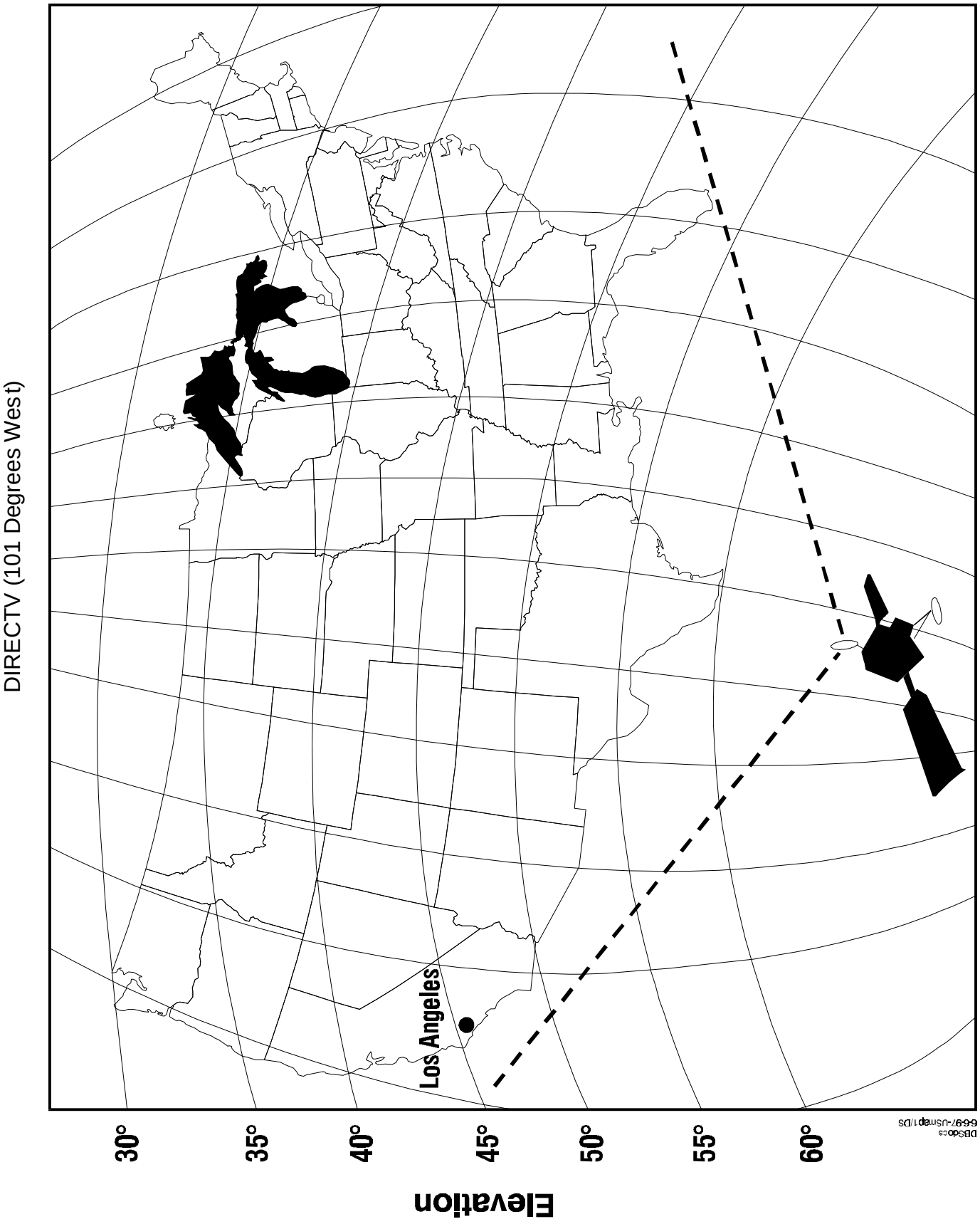
Cruise TV Satellite System Receiver Compatibility Matrix (cont'd)

***Cruise TV* Satellite System**
Receiver Compatibility Matrix

Brand Receiver	DBS-3000 Series DIRECTV/DISH Compatible
SONY	
SAT-B1	Not Compatible
SAT-B2	Not Compatible
SAT-B3	OK - DIRECTV
SAT-A1	OK - DIRECTV
SAT-A2	OK - DIRECTV
SAT-A3	OK - DIRECTV (1)
SAT-A4	OK - DIRECTV (1)
SAT-A50 V7.4	OK - DIRECTV (1) (8)
SAT B50 V7.5	OK - DIRECTV (1) (8)
SAT-A50 V7.68	OK - DIRECTV (1) (8)
SAT B50 V7.68	OK - DIRECTV (1) (8)
SAT-A55 V8.14	OK - DIRECTV (1) (8)
RCA (6)	
DRD122RW	Not Compatible
DRD102RW	Not Compatible
DRD203RW	Not Compatible
DRD203RB	OK - DIRECTV
DRD2122RD	OK - DIRECTV (8) (9)
DRD303RA	OK - DIRECTV (10)
DRD403RA	OK - DIRECTV
DRD480RE	OK - DIRECTV (8) (9)
DRD505RB	OK - DIRECTV (10)

11. Satellite Elevation Maps




DIRECTV (101 Degrees West)
Los Angeles
30°
35°
40°
45°
50°
55°
60°
Elevation
DBSdocs
6-6-97-USmap1/DS