



SV360



SV360 INSTALLATION & OPERATIONS MANUAL



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DVB[®]
Digital Video
Broadcasting



This manual contains important product information on the use and maintenance of your SV360 In-Motion satellite system. Refer to this manual for operation, maintenance, troubleshooting and contact information. Prior to contacting the manufacturer or dealer, have the manual and serial number available for reference.

Technical bulletins and software updates are available on our web site at www.tracstar.net.

<p>ELECTRICAL HAZARD WARNING</p> <p>THE COAXIAL CABLE THAT CONNECTS THE OUTDOOR ANTENNA TO THE TSS CONVERTER CARRIES A 30 VOLT ELECTRICAL CURRENT. EXERCISE EXTREME CAUTION WHEN HANDLING THIS CABLE. DO NOT CUT, BREAK OR SPLICE THIS LINE. DO NOT INSERT OR CONNECT ANY DEVICES SUCH AS SPLITTERS OR ANY OTHER DEVICE FOR ANY REASON. THIS LINE IS NOT COMPATIBLE WITH ANY OTHER EQUIPMENT. DAMAGE WILL OCCUR TO ANY DEVICE OTHER THAN THE SV200 OUTDOOR ANTENNA IF CONNECTED TO THE ANTENNA PORT ON THE SV200/TSS CONVERTER.</p>	
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TRADEMARK OF THE DVB DIGITAL VIDEO BROADCAST PROJECT (1991-1996)

TABLE OF CONTENTS

1 Introduction 5

1.1 Direct Broadcast Satellite Overview 5

1.2 SV360 Theory of Operation 7

1.3 Loss of Satellite Signal Due to Blockage or Rain-Fade 7

1.4 System Components 8

1.5 System Block Diagrams 9

2 Installation 12

2.1 Unpacking the SV360 13

2.2 Preparing for Installation 14

2.2.1 Preparing the SV360 Antenna for Installation 14

2.2.2 Installation Tools 15

2.2.3 Installation Materials 15

2.3 Antenna Installation 16

2.3.1 Site Selection 16

2.3.2 Install Antenna 17

2.4 Indoor Component Installation 19

2.4.1 Selecting a Location 19

2.4.2 Installing the Indoor Display 20

2.4.3 SV360 Configurations and Wiring Diagram 20

2.4.4 SV-360 Single Configuration 25

2.4.5 SV-360 Single or Dual Configuration Using a 110 Adapter 26

2.4.6 SV360 DUAL Configuration 27

2.5 Initial Power-Up and Checkout 28

3 Operation 29

3.1 Operating the SV360 29

- 3.2 The Satellite Acquisition Process 29
- 3.3 Using the Display Unit (IDD) 30
 - 3.3.1 The Display Unit Messages During Operation 31
 - 3.3.2 Top Level Display Unit Menu..... 32
 - 3.3.3 Main Page 33
 - 3.3.4 User Setup..... 33
 - 3.3.5 Setting the Region 34
 - 3.3.6 Selecting the Satellite Service..... 36
 - 3.3.7 Auto Start Mode..... 37
 - 3.3.8 Setting the Sleep Option..... 38
 - 3.3.9 HDTV Settings..... 39
- 3.4 Dealer Setup Options..... 43
- 3.5 Diagnostic Display..... 44
- 4 Troubleshooting 45**
 - 4.1 No TV Picture/Programming Present..... 46
 - 4.2 Remote Control is Unresponsive 47
 - 4.3 TV Is Set Correctly and Receiver Is On, But "Searching for Satellite Signal" Message Is Not Present..... 48
 - 4.4 Problems with the Display Unit 49
 - 4.5 Error Messages On The Display Unit..... 50
 - 4.6 Excessive Lock-on Time or Multiple Scan Tries 54
 - 4.7 The Antenna will not acquire the satellite..... 54
 - 4.8 Not Receiving All Programming 54
 - 4.9 Intermittent or Freeze Frame of Picture 55
 - 4.10 Miscellaneous Problems Related to High Definition Antennas using the optional 110 adapter 57
- 5 SYSTEM TESTS 60**

5.1	Magnetic Calibration	61
5.2	O-Recalibrate	62
5.3	Show Motion	63
5.4	Temperature Calibration	64
5.5	Option 21 Reset	65

TABLE OF FIGURES

Figure 1.1-1	Typical DBS System	5
Figure 1.1-2	DBS Satellite Longitude Positions	7
Figure 1.4-1	SV360 Outdoor Unit Without Dome	8
Figure 1.4-2	SV360 Power Supply, Indoor Box and Display Unit	9
Figure 1.5-1	SV360 Single HD Simple Block Diagram—Single Satellite Receiver	10
Figure 1.5-2	SV360 Dual HD Simplified Block Diagram—Dual Satellite Receiver	11
Figure 2.2.1-1	Preparing the SV360 Antenna for Installation—Remove Shipping Hardware	14
Figure 2.3.1-1	Site Selection	17
Figure 2.3.2-1	Install Antenna—Mount and Secure	18
Figure 2.4.4-1	SV360 Single HD(0) w/o 110 Adapter	20
Figure 2.4.4-2	SV360 Single HD (1A) w/Single 110 Adapter	21
Figure 2.4.4-3	SV360 Dual HD w/o 110 Adapter	22
Figure 2.4.4-4	SV360 Dual HD (1A) w/Single 110 Adapter	23
Figure 2.4.4-5	SV360 Dual HD (2A) w/Dual 110 Adapters	24
Figure 3.3-1	Display Unit (IDD)	30
Figure 3.3.2-1	SV360 IDD Top Level Layout	32
Figure 3.3.4-1	SV360 Display Unit User Setup Options	34
Figure 3.4-1	Dealer Setup Options	43
Figure 3.5-1	SV360 IDD Diagnostics Page	44

1 INTRODUCTION

The SV360 In-Motion satellite system by TracStar is a technologically advanced in-motion satellite system. TracStar has blended a unique combination of state of the art components with the most sophisticated satellite acquisition and tracking programs to provide the following features:



- **Built-in Digital Video Broadcast Receiver (DVB)**
- **Compatible with all Direct Broadcast Satellites (DBS)**
- **Compatible with any Satellite Receiver**
- **High signal availability**
- **Fast satellite acquisition while stationary or in-motion**
- **High dynamic in-motion tracking**
- **Tracking during signal blockage**
- **No cable wrap—unlimited azimuth travel**
- **High Definition Capable**

1.1 DIRECT BROADCAST SATELLITE OVERVIEW

Direct Broadcast Satellites (DBS) broadcast audio, video and data information from satellites in stationary orbit 22,300 miles above the earth's equator. A typical DBS audio and video signal originates at an uplink facility that beams programming and other signals to satellites at fixed positions above the equator. The satellite then receives the signals and transmits them back to earth. A receiving station, such as the SV360, includes a dish and satellite receiver to receive the signals and process them for use by the consumer audio and video equipment.

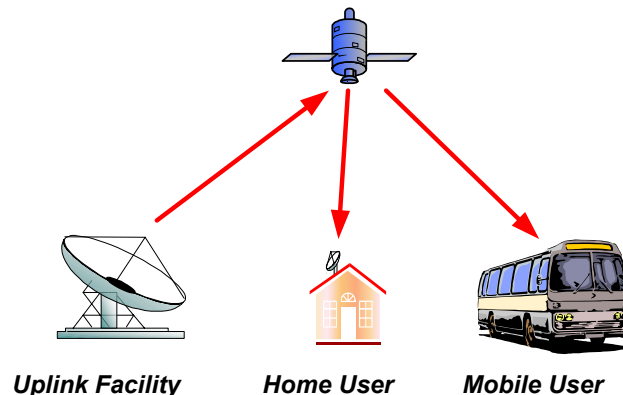


Figure 1.1-1 Typical DBS System

At present, there are six Direct Broadcast Satellite positions over North America. Each position has one or more satellites that are broadcasting multiple channels. Most of these satellites are broadcasting in a standardized digital format known as **Digital Video Broadcast or DVB**. The digital data stream that contains the audio and video information also has imbedded the satellite identification. The satellite ID information is decoded by the SV360 built-in DVB receiver and is used by the antenna to positively identify and lock onto the correct satellite.

The SV360 is user programmable and capable of identifying and locking onto the following North American satellites and service providers:

ORBITAL POSITION	SERVICE PROVIDER
61.5°	Dish Network
82°	Bell Express Vu
91°	Bell ExpressVu
101°	DirecTV
110°	Dish Network/DirecTV
119°	Dish Network/DirecTV
148°	Dish Network

The following figure illustrates the relative position of the North American Direct Broadcast Satellites.

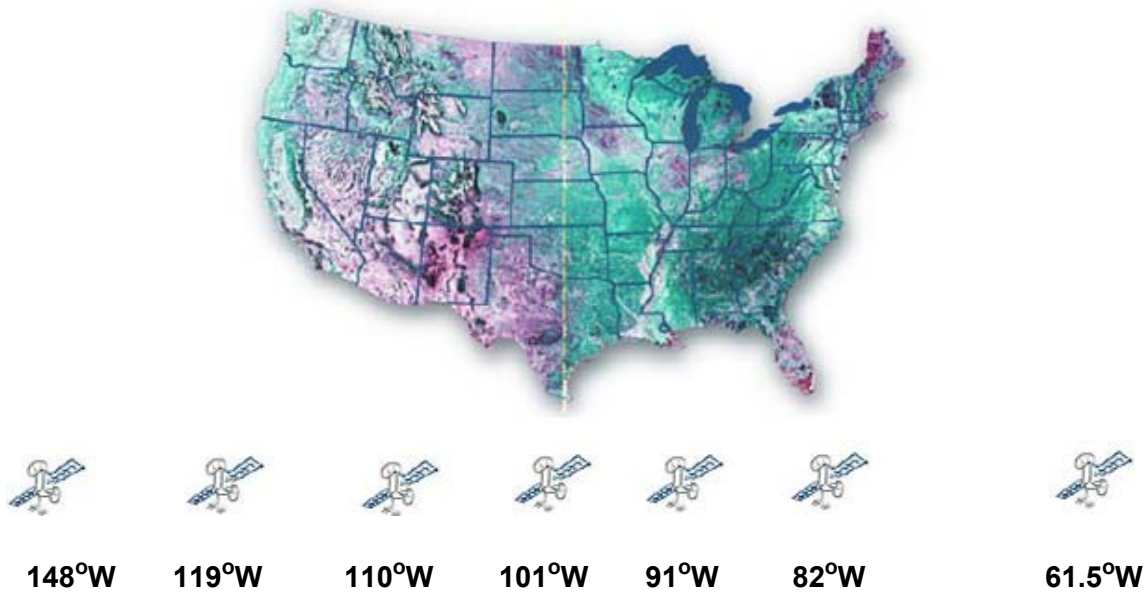


Figure 1.1-2 DBS Satellite Longitude Positions

1.2 SV360 THEORY OF OPERATION

The TracStar SV360 combines the use of a compass and motion sensors to identify the heading of the vehicle relative to the satellite and to accurately maintain pointing of the dish to the satellite signal while stationary or in motion.

Upon power-up, the vehicle can be stationary or moving. The SV360 will perform a quick scan of the southern sky to locate the correct satellite. If the satellite is found during the quick scan the system will remain locked onto that satellite. If the quick scan is unsuccessful, the SV360 will perform a wider scan until the system locks onto the correct satellite.

The SV360 can make unlimited turns without affecting the tracking of the satellite since there are no cables in the antenna base to wind up.

1.3 LOSS OF SATELLITE SIGNAL DUE TO BLOCKAGE OR RAIN-FADE

In order for the SV360 antenna to receive satellite signals, there must be a clear, unobstructed line of sight to the satellite. Bridges, buildings, trees, etc., will block the satellite signal and degrade or prevent operation of the system.

While in motion and tracking, the system will remain pointed at the satellite even during periods of temporary signal blockage due to obstructions. During periods of blockage the picture and sound will be lost. When the obstruction is cleared, the satellite signal will be restored and the picture and sound will resume.

Heavy rain and cloud cover can also adversely affect reception of the satellite signal. The Ku band frequency used by the satellite is susceptible to rain attenuation. This condition is present with all small Ku band DBS antennas.

If the satellite signal is lost due to blockage or rain fade, services from the receiver will be lost (picture will freeze frame and may disappear). The antenna will continue to search until an adequate level of satellite signal is present for tracking to resume. When the satellite signal is again high enough the receiver will resume providing desired programming services.

1.4 SYSTEM COMPONENTS

The standard TracStar SV360 antenna system consists of the Outdoor Unit (ODU, roof top antenna), the Indoor Box (IDB), the Indoor Display Unit (IDD) and the Power Supply. Optional components include a dual output down converter when more than one receiver is required and a 110 adapter for high definition reception for DirecTV customers.

SV360 Outdoor Unit (ODU):

The Outdoor Unit contains the control electronics, pedestal, dish, LNB, and radome.

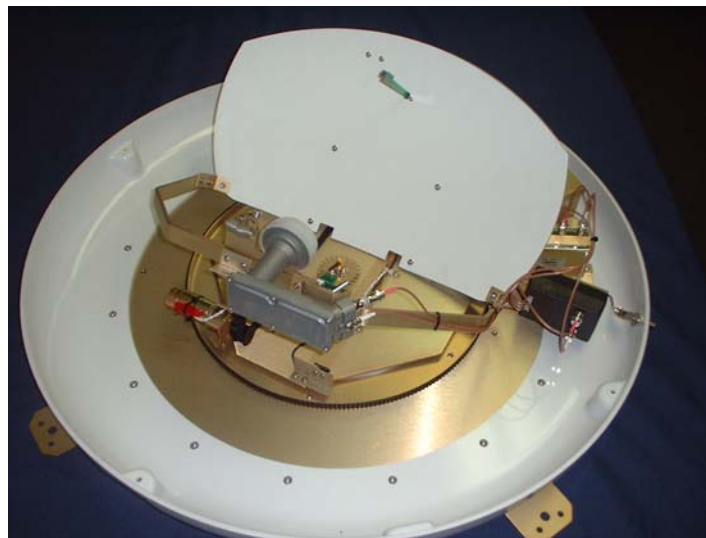


Figure 1.4-1 SV360 Outdoor Unit Without Dome

SV360 Power Supply, Indoor Box and Display Unit:



Figure 1.4-2 SV360 Power Supply, Indoor Box and Display Unit

SV360 Indoor Display Unit (IDD):

The Display Unit provides the user with feedback on the antenna system and allows the user to make changes to the antenna settings. It also has the power on/off functions. Antenna diagnostic information is also available with the IDD.

SV360 Power Supply and Indoor Box (IDB)

The power supply provides 24 Volts DC to the Indoor box (IDB) and the outdoor unit (ODU). The Indoor box contains the tuner and connections to the ODU, Indoor display and the satellite receiver.



To complete the system, a Satellite Receiver is required along with the audio/video electronics. The Satellite Receiver is not supplied with the SV360 but is available from the TracStar dealer. The Satellite Receiver receives the signals from the antenna via the indoor box. It then converts the satellite signal into audio, video and data streams that pass on to the audio/video electronics.

1.5 SYSTEM BLOCK DIAGRAMS

The SV360 is available in a variety of configurations, allowing the customer to choose from single or multiple receiver systems as well as the ability to

receive high definition programming on Satellite 110 for DirecTV users. The dual receiver configuration implements a dual (stacked) LNB on the antenna. In either case, a single coaxial cable is installed between the antenna (ODU) and the Indoor Unit.

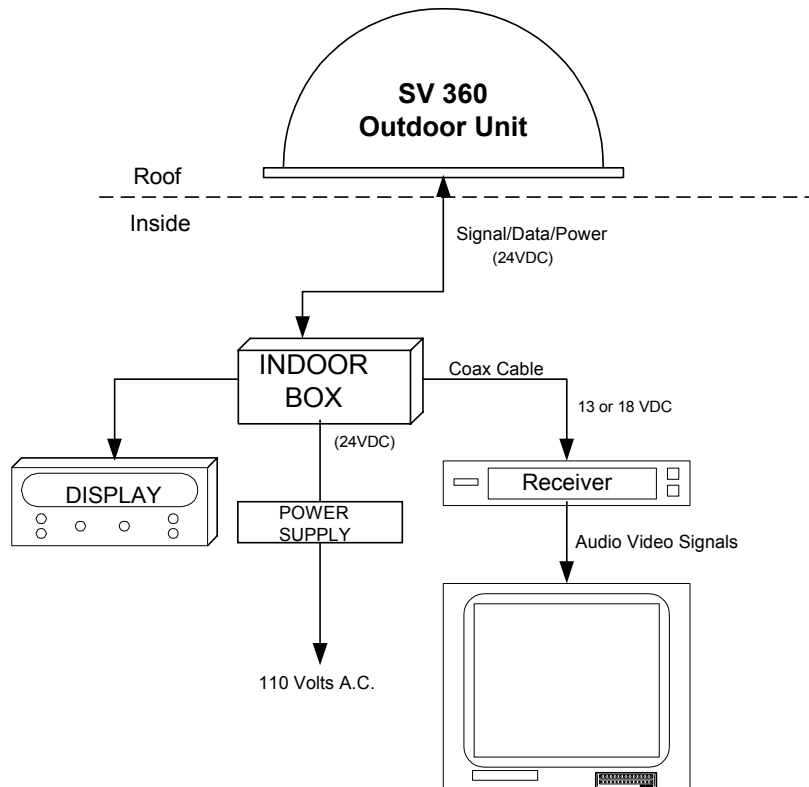


Figure 1.5-1 SV360 Single HD Simple Block Diagram—Single Satellite Receiver

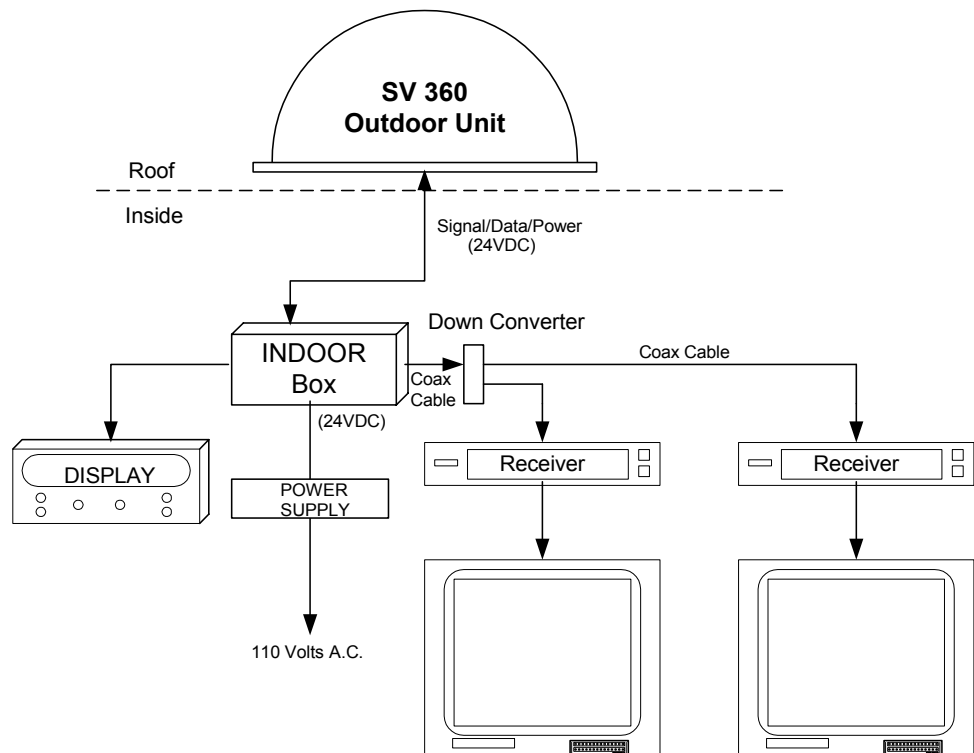


Figure 1.5-2 SV360 Dual HD Simplified Block Diagram—Dual Satellite Receiver

2 INSTALLATION

Installation of the SV360 must be accomplished by or under the supervision of an authorized TracStar dealer for the TracStar Limited Warranty to be valid and in force. Good planning of the installation will provide the best results. Below is some guidance on issues that are important to consider when planning the installation. The major steps in the installation and setup process are as follows:

1. Prepare for the installation.
2. Site selection.
3. Equipment and cable installation.
4. Initial power-up and checkout.

The SV360 is designed for ease of installation and operation. The major steps in the installation and setup process are as follows:

1. Mount the antenna (ODU) on top of the vehicle.
2. Install the Indoor Box (IDB), Display Unit (IDD), Power Supply, optional dual down converter and 110 adapter near the Satellite Receiver and TV electronics.
3. Connect the cables.
4. Run the magnetic calibration
5. Set the region.
6. Select the satellite.

2.1 UNPACKING THE SV360

The following items are included in the packaging of the SV360:

ITEM	DESCRIPTION	QUANTITY
1	Antenna Assembly (ODU)	1 each
2	Indoor Box	1 each
3	Display Module	1 each
4	Power Supply	1 each
5	Display Module Cable (Phone Cable)	1 each
6	Documentation	1 kit
7	Dual Down Converter (optional)	1 kit
8*	110 Adapter (optional)	1 each
9	Gel filled sleeve	1 each



*** NOTE: The 110 adapter is required for each High Definition receiver used with DirecTV channels on Satellite 110.**

2.2 PREPARING FOR INSTALLATION

2.2.1 PREPARING THE SV360 ANTENNA FOR INSTALLATION

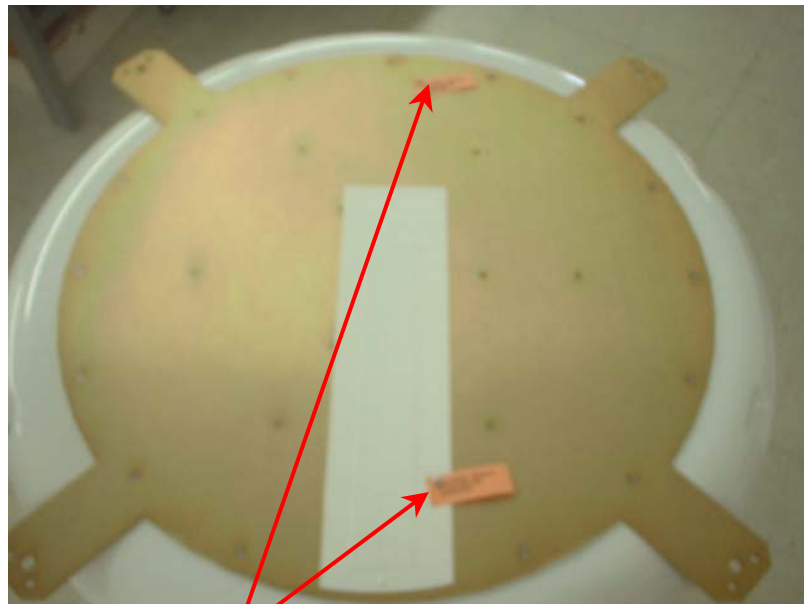
The following steps are necessary to prepare the SV360 Antenna for installation:

1. Upon opening the shipping container remove the items listed in the table above.



*** NOTE: It is not necessary to remove the dome during the installation process.**

2. Remove the 2 shipping screws that secure the antenna while in shipment. These two screws secure the azimuth and elevation mechanism inside the dome while in shipment. ***The antenna will not operate, and damage may occur, unless these screws are removed before installation.***



Remove shipping hardware

Figure 2.2.1-1 Preparing the SV360 Antenna for Installation—Remove Shipping Hardware

3. The two holes created by removing the shipping hardware should not be plugged. If the antenna is to be shipped, the shipping screws should be re-inserted to prevent damage. An antenna shipped without shipping screws could void the manufacturer's warranty. The screws are No. 8 by 2 inches long.

2.2.2 INSTALLATION TOOLS

The following list of equipment should be available during installation of the SV360:

- Phillips head screw driver
- Drill motor and driver
- Drill bit for #12 self tapping screws
- Open end 7/16 in. wrench
- Coax Crimping Tool (SPC Technology Part No. CTR-8752-01 CATV Connector Tool)*.

***Available from Newark Electronic Distributors (Phone: 800-463-9275)**

2.2.3 INSTALLATION MATERIALS

The installer will require the following list of materials during installation of the SV360:

- 8ea. No. 12 self-tapping stainless steel screws for mounting the antenna to a fiberglass roof. The screw length is dependent on the type of roof and should be determined by the dealer or by contacting the vehicle manufacturer. 1" to 1 1/4" long is common.
- 100% Silicon RTV or sealant.
- RG-6 coaxial cable rated for 2 GHz operation (Comscope 5730 or equivalent).
- Type F connectors (SPC Technology Part. No. 2766-SPC)*.
- Velcro

***Available from Newark Electronic Distributors (Phone: 800-463-9275)**

2.3 ANTENNA INSTALLATION

2.3.1 SITE SELECTION

The first step to installing the SV360 is to pick a site on the roof for the antenna to be mounted. The installer and owner have a certain amount of latitude here, however, the following criteria should be considered:

1. The antenna dish must have a clear view of the sky and horizon at all azimuth orientations to avoid blockage of the satellite signal.
2. The antenna should be on the longitudinal centerline of the vehicle.
3. The antenna should be mounted on as level a surface as possible.
4. Keep the antenna clear of any other equipment on the roof (i.e. fans, AC units, etc.). Two feet clearance is desirable.
5. When picking a location, consider the proximity of the indoor equipment to minimize cable length on the roof.

6. As shown in the illustration below, two mounting pads should be oriented toward the front of the vehicle and two towards the rear. **The antenna bulkhead (RF) connector should be facing the rear of the vehicle.**

Front of Vehicle



Antenna 2 ft. from other structures

Antenna on centerline of vehicle.

Two mounting pads towards front and two mounting pads towards rear of vehicle.

Coax bulkhead connector towards rear.

Figure 2.3.1-1 Site Selection

2.3.2 INSTALL ANTENNA

Now that the site has been determined, place the antenna in its final location, making sure that it is on the centerline of the vehicle and the external coax connection is facing the rear of the vehicle, two pads forward and two pads towards the rear.

Using the antenna pads as a template, pre-drill the 8 mounting holes (2 per mounting pad). Use caution not to penetrate the roof so far that the bit will cause damage to any infrastructure below. The installer should consult with the vehicle manufacturer to insure that the drill bit does not cause damage to wiring or other structure below. The drill bit size should match the corresponding mounting hardware screw sizes as specified by the screw manufacturer. Use a probe to make sure that there are no wires directly below the holes.

After drilling, move the antenna to the side and place a liberal amount of sealant over each hole and over the area where the pad contacts the surface to prevent any moisture intrusion.

Place the antenna over the mounting holes and insert the 8 screws. The antenna mounting is now complete.



Insert two screws in each mounting pad

Connect coax cable to bulkhead and seal connection with snap-on gel filled boot.

Figure 2.3.2-1 Install Antenna—Mount and Secure

There is just one cable connection to be made for the antenna to the Indoor Box. The picture above illustrates the location of the bulkhead coaxial connector. Connect the cable here. Place a service loop of at least 8 inches in diameter from the bulkhead connector for the cable run and secure the cable to the roof. This service loop prevents stress on the antennas RF connector. Seal the connector to the bulkhead with the supplied gel sleeve, silicon sealant or electrical sealant tape.



* NOTE: The antenna to coax cable connection is extremely important to the proper operation of the antenna system. The coax connectors must be installed properly to the cable and connector manufacturer's specifications and then sealed against moisture intrusion using the Gel filled sleeve. If the connection is not sealed properly, the connection will not last and will void the TracStar warranty.

2.4 INDOOR COMPONENT INSTALLATION

Installation of the Indoor Box, Power Supply, display module and optional down converter and 110 adapter(s) is simple, but it is important to follow the installation instructions and checkout procedures to insure the best performance and reliability of the SV360.

2.4.1 SELECTING A LOCATION

The single coaxial cable from the antenna should be run to the vicinity of the final IDB/Display Unit and Power Supply location. The following criteria should be considered when selecting a location for this equipment:

1. The equipment should be in the same general vicinity of the satellite receiver.
 2. The IDB, Display unit, Power Supply, Satellite Receiver, display module and optional down converter and 110 adapter(s) need to be accessible for operation and maintenance purposes.
 3. *The IDB should be in a **well ventilated area*** and not stacked directly on top of other electronics where it is directly exposed to the heat dissipated by other electronics.
 4. The IDB, Power Supply, and optional down converter and 110 adapter(s) should be secured so that they do not shift or bounce around during vehicle motion. This can be accomplished with sticky back Velcro, for example.
- Note: The most convenient location to install your indoor components is in an overhead cabinet in the front of the coach.

2.4.2 INSTALLING THE INDOOR DISPLAY

The Display Unit must be installed such that it is conveniently located to the user for access to the settings, diagnostic features and on-off function.



Note: Connecting the Display Unit to the Indoor Box will apply power to the antenna and it will begin the power up and satellite acquisition sequence. Do not connect the Display Unit until ready to begin the acquisition. If connected, the power can be turned off by pressing the ENTER and – button simultaneously for 3 seconds.

2.4.3 SV360 CONFIGURATIONS AND WIRING DIAGRAM

The following diagrams illustrate both the single and multiple satellite receivers wiring configurations.

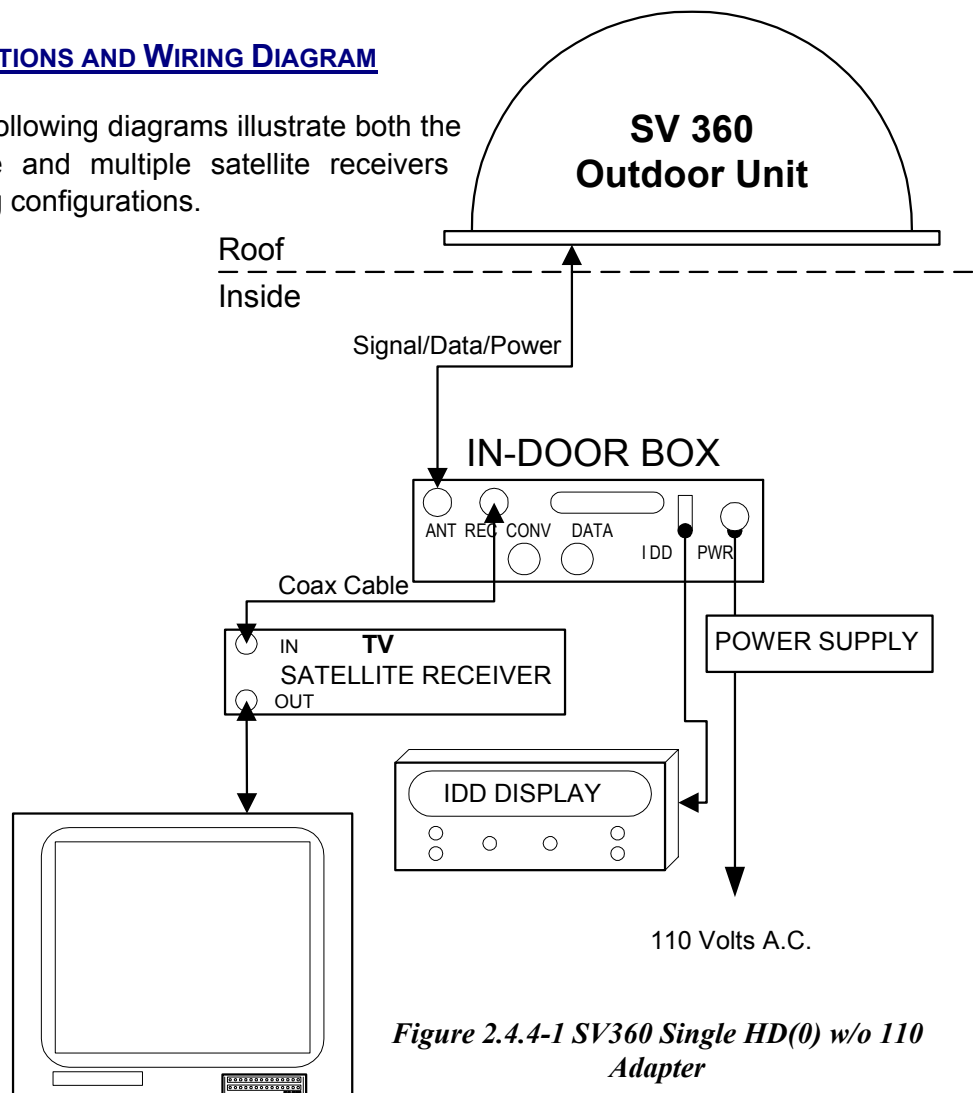


Figure 2.4.4-1 SV360 Single HD(0) w/o 110 Adapter

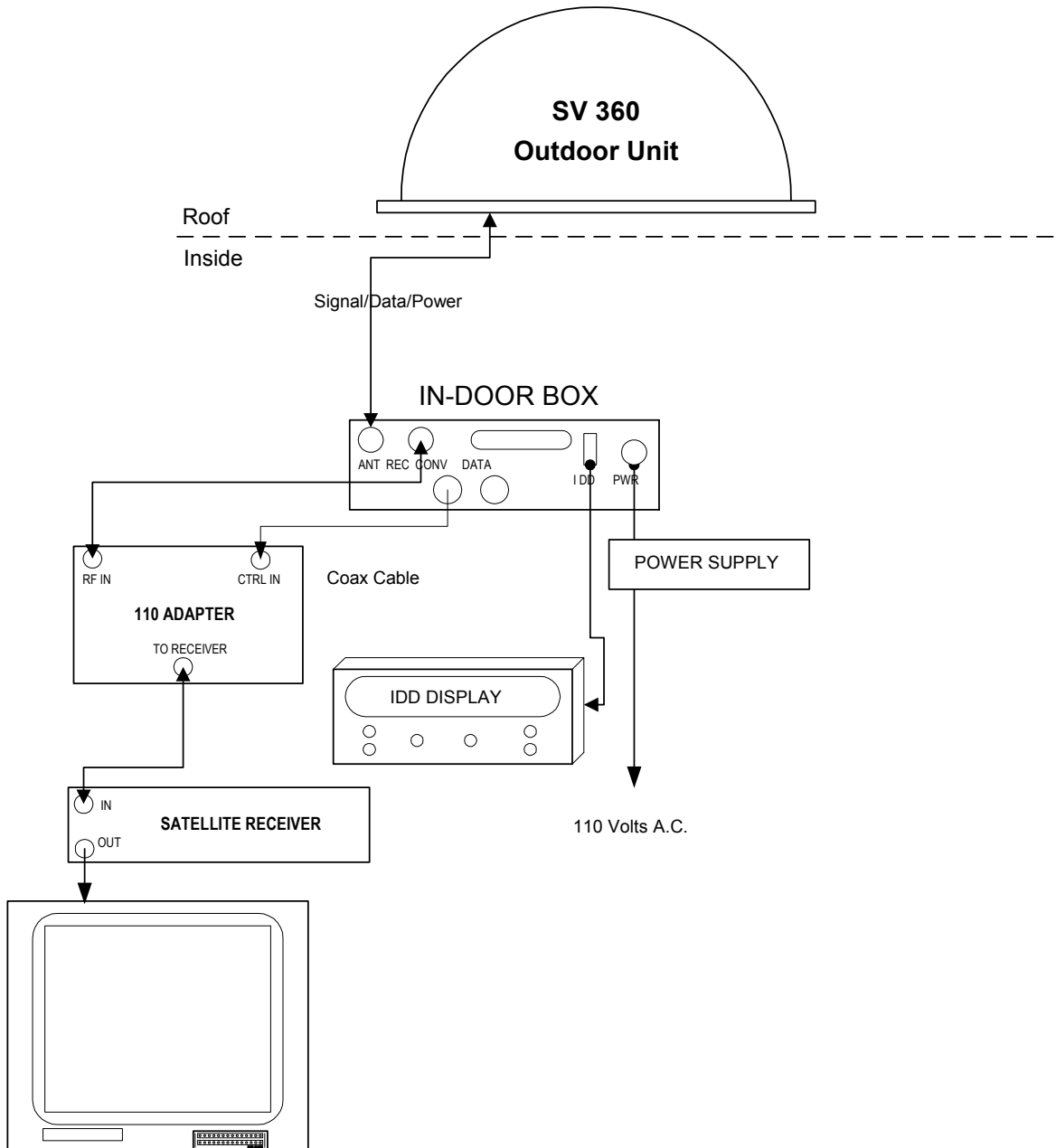


Figure 2.4.4-2 SV360 Single HD (1A) w/Single 110 Adapter

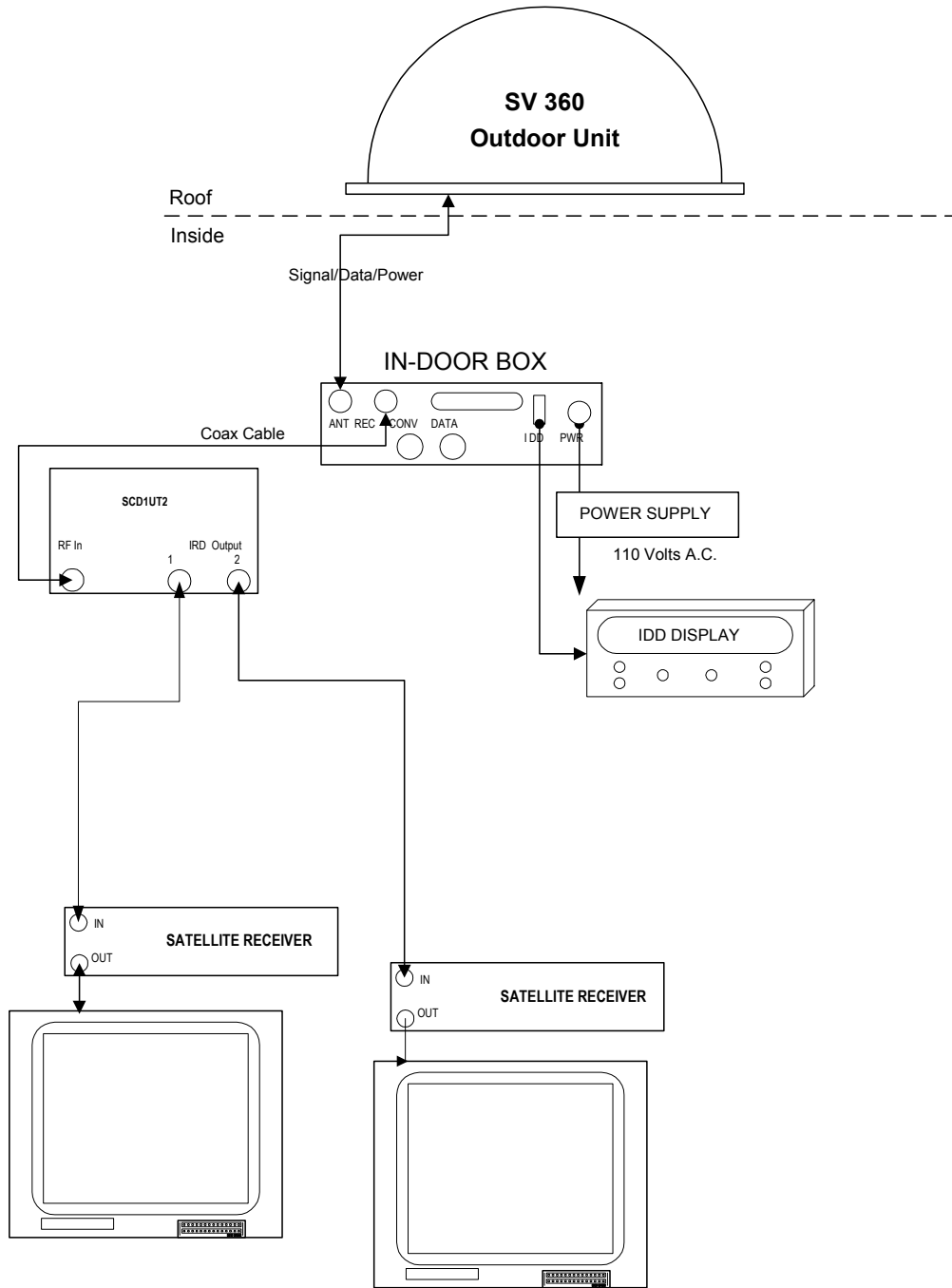


Figure 2.4.4-3 SV360 Dual HD w/o 110 Adapter

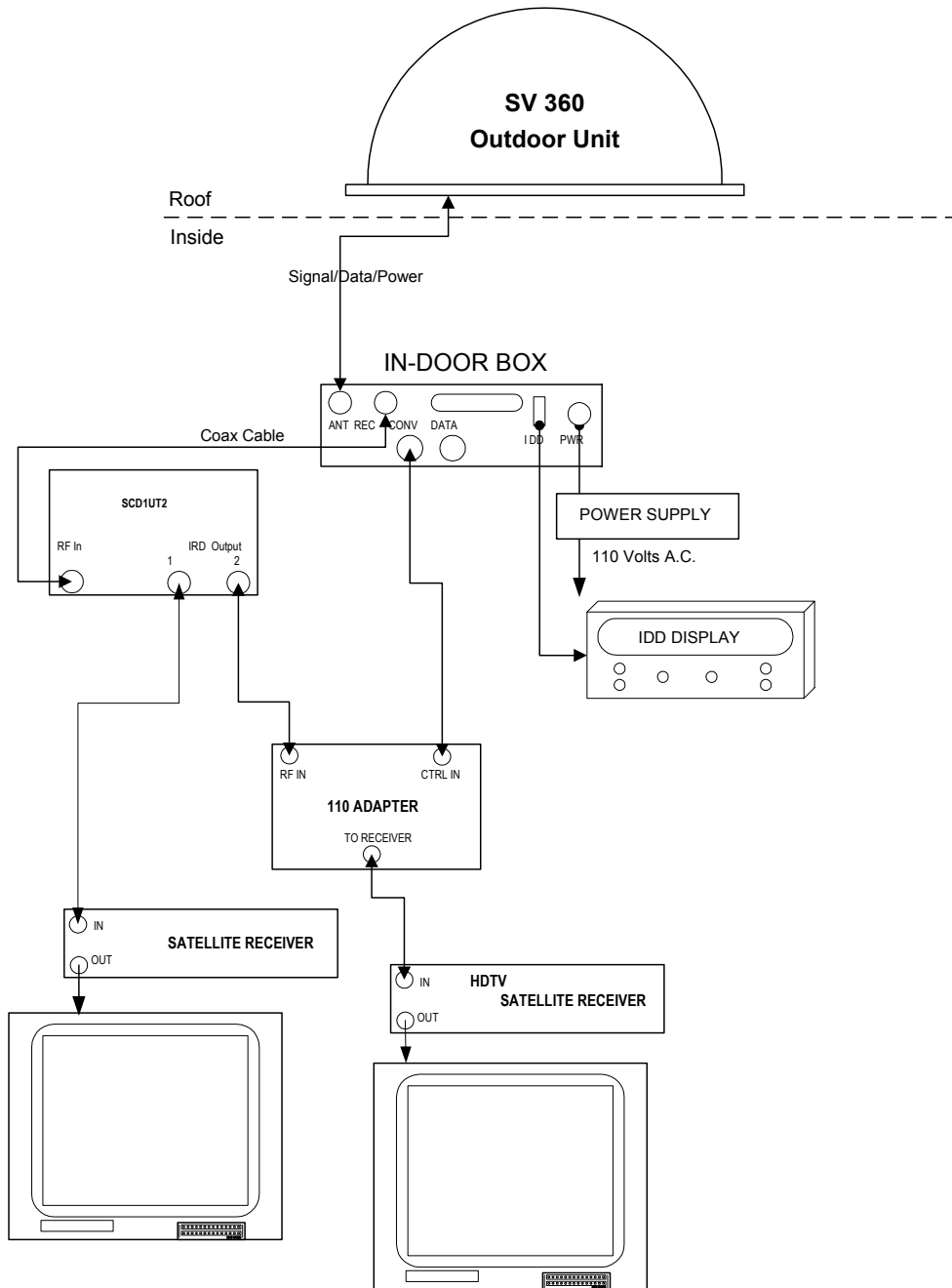


Figure 2.4.4-4 SV360 Dual HD (1A) w/Single 110 Adapter

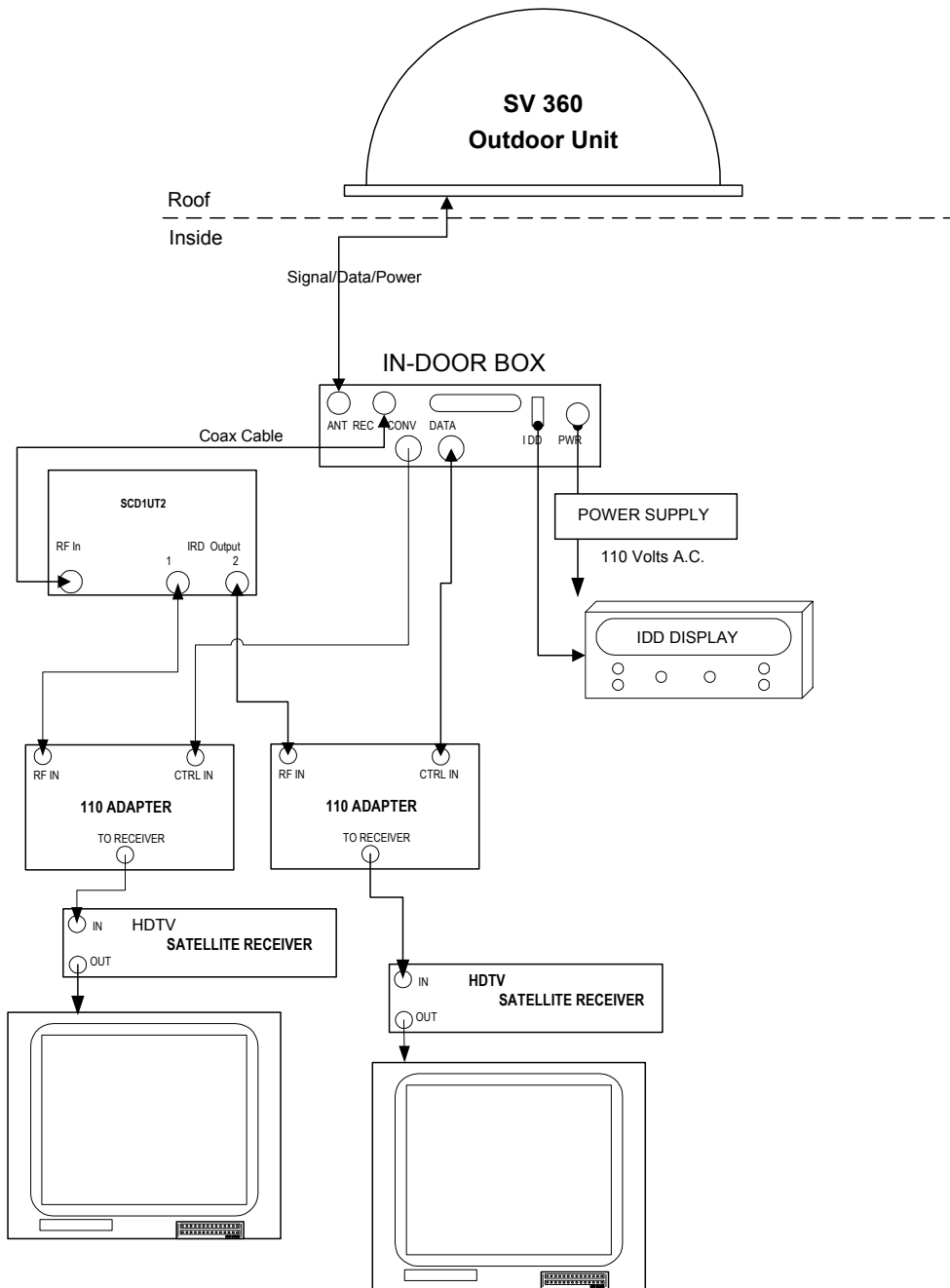


Figure 2.4.4-5 SV360 Dual HD (2A) w/Dual 110 Adapters

2.4.4 SV-360 SINGLE CONFIGURATION

1. Connect the RG-6 cable from the antenna to the back of the Indoor Box port labeled "ANT".
2. Connect another RG-6 cable to the Indoor Box port labeled "REC." and to the Satellite Receiver port labeled "SATELLITE IN".
3. Connect the Power Supply cable to the IDB port labeled "PWR" and to a 110 Volt/60Hz power source outlet.
4. Connect the Display Unit with the phone connector cable supplied to the port labeled "IDD" on the rear panel of the IDB. This step will apply power to the antenna and the antenna will begin a scan, once power is applied.



Figure 2.4.4-7 Indoor Box Back Panel Wiring



Note: The Data Port is not used in the installation and operation of the SV360. It is only used for future software updates. The two control line connections next to the data (HD1 and HD2) port are not available on older models.

2.4.5 SV-360 SINGLE OR DUAL CONFIGURATION USING A 110 ADAPTER**SV360 Single using a Single 110 Adapter**

1. Connect as described in SV360 Single Configuration

Do Not Plug Phone Cable into IDD

2. Connect the 110 Adapter as follows:
 - a. Control Input to the IDB Converter Jack
 - b. RF Input to the IDB Receiver Jack
 - c. Receiver Jack to the Satellite Receivers 'IN' jack.
3. Plug the phone jack into the IDD. Scanning and acquisition will begin immediately.

SV360 Dual using Single or Dual 110 Adapters

1. Connect as described in the SV360 Dual Configuration

Do Not Plug Phone Cable into IDD

2. Connect the 110 adapter(s) as follows:
 - a. Control Input to the IDB Converter Jack
 - b. RF Input to the down converter output (SCD1UT2)
 - c. Receiver Jack to the Satellite Receivers 'IN' jack.
3. Repeat steps A thru C when two 110 Adapters are used.
4. Plug the phone jack into the IDD. Scanning and acquisition will begin immediately.

2.4.6 SV360 DUAL CONFIGURATION



Note: The down converter (box with “NAS” printed on it) must be installed with the SV360D(dual configuration), even if the system is to be used with only one receiver(IRD).

1. Connect the RG-6 cable from the antenna to IDB ANT port.
2. Connect the IDB REC port to the multi-switch box port labeled “Input”.
3. Connect the port labeled “Output” on the down converter to receiver No. 1 port labeled “Satellite In” using RG-6 or equivalent.
4. Repeat step 3 for a second receiver. The down converter can be used to connect up to 2 receivers.
5. Connect the 110VAC power cords for the Indoor Box and the Satellite Receivers.
6. Connect the Display Unit with the phone connector cable supplied to the port labeled “IDD” on the rear panel of the IDB. Connecting the Display Unit applies power to the antenna and a satellite acquisition sequence will begin.
7. Refer to Section 2.4.5.
8. Connect the RG-6 cable from the antenna to IDB ANT port.
9. Connect the IDB REC port to the multi-switch box port labeled “Input”.
10. Connect the port labeled “Output” on the Multiswitch Box to receiver No. 1 port labeled “Satellite In” using RG-6 or equivalent.
11. Repeat step 3 for IRD No. 2. The multi-switch can be used to connect up to 2 receivers.
12. Connect the Display Unit with the phone connector cable supplied to the port labeled “IDD” on the rear panel of the IDB. Connecting the Display Unit applies power to the antenna and a satellite acquisition sequence will begin.

13. Connect the 110VAC power cords for the TSS Indoor Box and the Satellite Receivers.

2.5 INITIAL POWER-UP AND CHECKOUT

When the Power Supply and the Display Unit are connected to the IDB the antenna will have power applied and the Display will be active. Disconnecting the Display Unit from it's cable will remove power to the antenna. Power can also be turned off by pressing the ENTER and – button simultaneously for 3 seconds.

Make sure that the television is on and set for the correct video input source from the Satellite Receiver:

1. Turn on the power to the Satellite Receiver. A message "Searching for Satellite Signal" or similar should appear on the television.
2. Turn on power at the Display Unit by pressing the START/STOP button. The Display Unit should be displaying initial power up messages as the SV360 begins its acquisition process.
3. The next step is to set the region. This is the same procedure as detailed in Section 2.3.5 SETTING THE REGION.
4. The last step in the setup process is to perform a magnetic calibration. This procedure nulls the compass for any magnetic fields that may be inherent in the roof structure around the antenna. This procedure is optional on most vehicles and is only necessary if the magnetic field of the vehicle is sufficient to disturb the performance of the antenna's built in compass.

3 OPERATION

3.1 OPERATING THE SV360

The user should be familiar with the operation of the Satellite Receiver prior to using the SV360. Refer to the Satellite Receivers' operations manual for instructions on how to operate the Satellite Receiver.

The TracStar SV360 is designed to make operation as simple as possible for the user. Under normal conditions, operation of the SV360 requires no intervention from the user. Acquisition and tracking of the satellite is fully automatic.

The vehicle can be stationary or moving during start-up.

3.2 THE SATELLITE ACQUISITION PROCESS

POWER ON-OFF:

1. Turn on the power to the TV and satellite receiver. The message "Searching for Satellite Signal" or similar should appear on the television.
2. To turn on the SV360 press the START/STOP button on the Display Unit. To turn off the SV360 press and hold the ENTER and "-" button for 3 seconds. The Display Unit will read "off".
3. If the Display Unit reads "off" or "Scan Error", press the START/STOP button and tracking will resume.



Note: The DISPLAY UNIT must be connected to the INDOOR BOX for the SV360 to operate. Disconnecting the DISPLAY UNIT will remove power from the antenna.

What to Expect:

The SV360 has a self-calibration and start-up routine. There is no operator intervention during this process. Under normal conditions, the SV360 will acquire the correct satellite and produce television programming in less than 2 minutes.

3.3 USING THE DISPLAY UNIT (IDD)

The Display Unit provides the user the power on/off function, system status, feedback and the ability to adjust system settings. There are four major functions:



- **On-Off Function**
- **Feedback on the current status of the SV360.**
- **The opportunity to select and change the satellite.**
- **The ability to set the region.**
- **Setup options and calibration routines used by the installer during installation.**
- **Information on the performance and diagnostics for the SV360.**

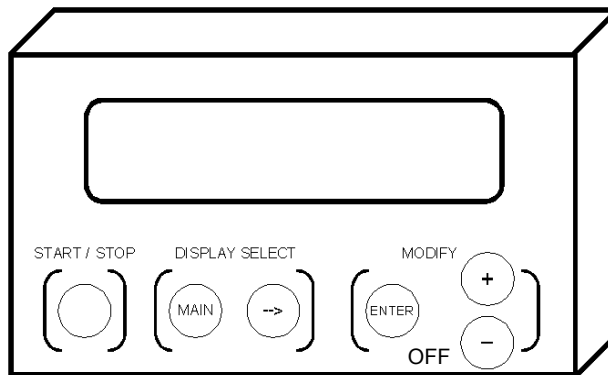


Figure 3.3-1 Display Unit (IDD)

START/STOP BUTTON

The START/STOP button will turn on the system. If the Display reads “off” simply press the START/STOP button and the system will begin the satellite acquisition sequence.

If the Display reads “Scan Error” or “Idle/Hold” press the START/STOP button to resume operation.

The START/STOP button also enables the user to place the system into the “Run” mode or an “Idle/Hold” mode. Pressing the START/STOP button will toggle between “Run” and “Idle/Hold”. For normal operation the system must be in the “Run” mode. The “Idle/Hold” mode can be used to stop the scanning/tracking motion of the antenna for example, if the vehicle is to be parked for longer than an hour. If the system is placed into the IDLE/HOLD mode, then it must be re-started by pressing the START/STOP button before

tracking will resume(vehicle moving). The START/STOP button does not turn off the system, you must press and hold the ENTER and “-“ button for three seconds to turn power off.

3.3.1 THE DISPLAY UNIT MESSAGES DURING OPERATION

The following messages will be displayed on the IDD after power up of the SV360:

MESSAGE DISPLAYED	DESCRIPTION
off	System is powered off; press the START/STOP button to activate.
POWER UP PLEASE WAIT	Power is being applied to the system.
LOADING PLEASE WAIT	The system is going through a momentary warm-up stage.
RUN: SCAN ALIGN	The antenna is performing a calibration of the internal sensors.
RUN: QUICKSCAN	The antenna is scanning a small portion of the southern sky.
LOCK VERIFY	The antenna has identified a satellite and is in the process of verifying the satellite identification.
RUN: LOCKED S75 DTV 101 (BLINKING) 9 SOUTHEAST (BLINKING) NOW ON DTV 101 (BLINKING)	The system has locked onto a satellite. The display also shows the selected satellite, region and the satellite that the antenna is locked onto. The “S” number indicates the signal strength as measured by the SV360.
RUN: SWITCHING	Indicates that the system has locked onto the wrong satellite and will switch to the selected satellite.
RUN: WIDESCAN	If the QUICKSCAN is unsuccessful the system will perform a wider scan.
RUN: SCANTRY 2	If the WIDESCAN is unsuccessful, the system will perform up to 4 successive Scan tries.
RUN: SCAN ERROR	After 4 unsuccessful scans this message will appear and the system will be automatically placed into SCAN ERROR. Pressing the START/STOP button will resume operation.

Messages that relate to errors present in your system, test or calibration functions and diagnostics information are explained in DEALER SETUP and Trouble Shooting section of this manual.

3.3.2 TOP LEVEL DISPLAY UNIT MENU

The following diagram illustrates a top-level view of the menu available in the IDD.

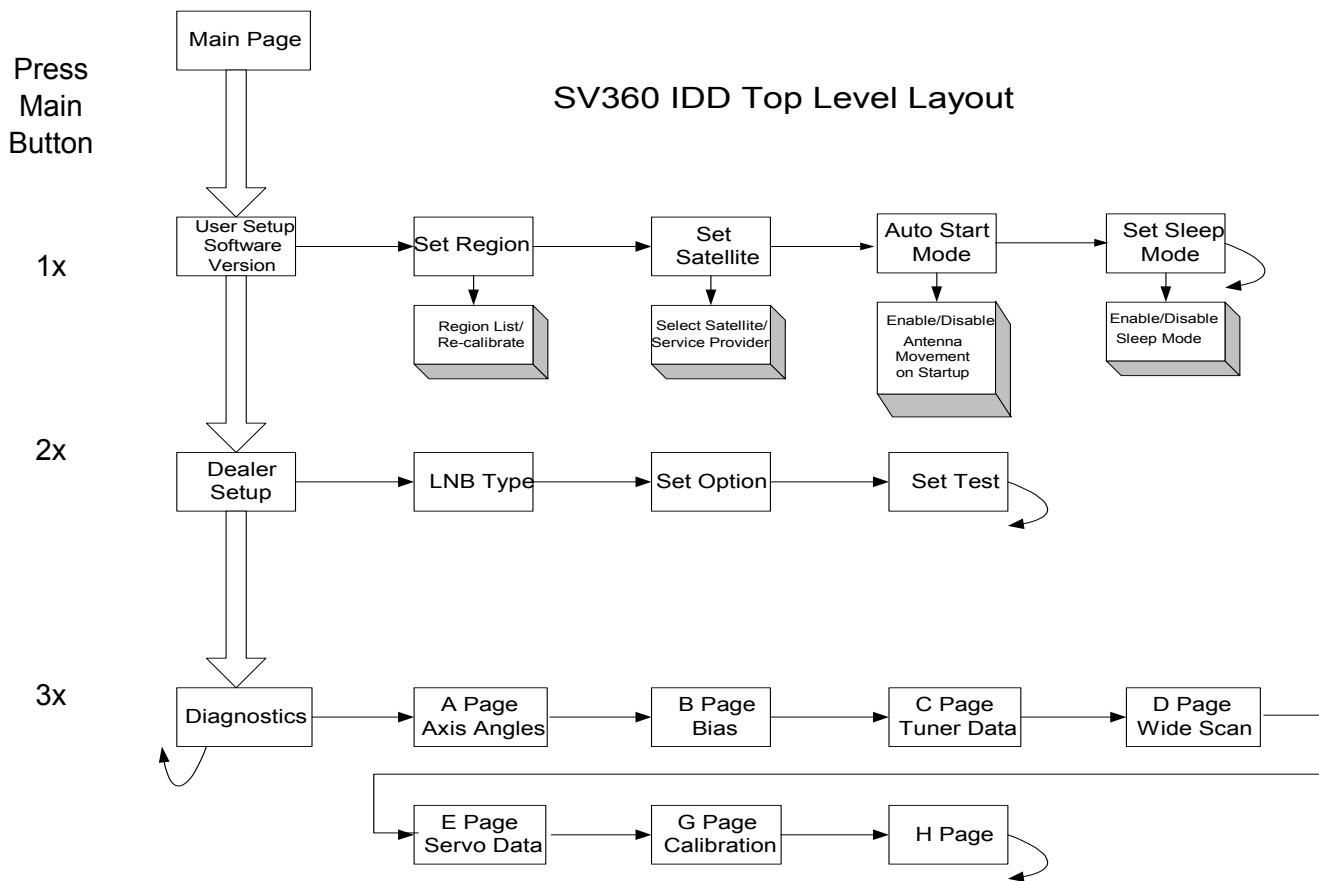


Figure 3.3.2-1 SV360 IDD Top Level Layout

3.3.3 MAIN PAGE

The IDD MAIN PAGE provides the user information about the current status of the system while it is in the initial satellite acquisition mode as shown above as well as when the system in operating. During normal operation the MAIN PAGE will display the antenna status:

RUN: LOCKED	S86	<p>The system has locked onto a satellite. The display also shows the selected satellite, region and the satellite that the antenna is locked onto. The “S” number displays the antenna signal strength as measured by the SV360. This number will not be the same as the satellite receiver’s transponder signal strength.</p>
DTV (BLINKING)	101	
9 (BLINKING)	SOUTHEAST	
NOW ON DTV (BLINKING)	101	

3.3.4 USER SETUP

There are a number of setup and informational features available with the SV360, which can be accessed with the Display Unit including:



- **SET REGION - *Setting the region.***
- **SET SATELLITE - *Selecting the satellite and service provider.***
- **SET SLEEP MODE - *Setting sleep mode.***
- **AUTOSTART MODE – *Prevents antenna from moving on startup***

To Access the USER SETUP Menu:

While in the Run mode, Press the MAIN button one time or just keep pressing the MAIN button until the display reads User Setup.

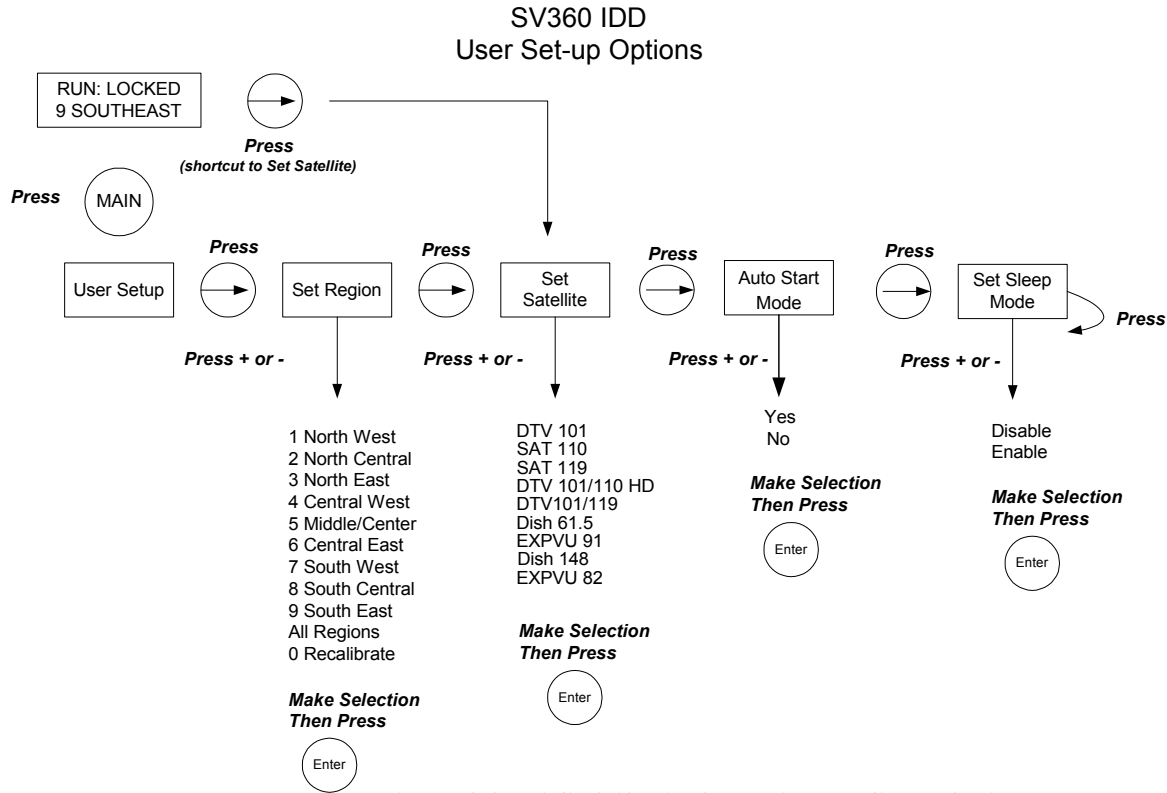


Figure 3.3.4-1 SV360 Display Unit User Setup Options

3.3.5 SETTING THE REGION

Setting the region calibrates the SV360 relative to its position between the desired satellite and the user’s present location. Setting the region to the corresponding vehicle location aids and expedites the satellite acquisition time. Alternatively, the user can select the ALL REGIONS setting if only acquiring one satellite and the antenna will acquire the satellite from any geographical position. **Note: If switching between satellites on a regular basis, particularly High Definition users, the appropriate region must be selected.** It is also advisable to set the region if the antenna is going to be used to change satellites on a regular basis, particularly for Dish Network subscribers.

To Access the SET REGION Menu from the USER SETUP display:

1. First, press the START/STOP button to put the antenna into Idle/Hold.
2. Press the MAIN button once to User Set Up.
3. Press the → button one time.
4. The Set Region display should appear with the current region setting blinking.
5. Using the + or - buttons, select the region corresponding to the vehicle location from the map below. Note that the region map is designed to reflect the number pad on a telephone over-laid onto a map of the United States. (For example, if the vehicle is presently located in Miami, FL, select region 9 SOUTHEAST as the region location.)
6. When you have selected the correct region, press the ENTER button to input the region change, then press the START/STOP button. The system will initiate a new scan for the desired satellite. If you do not press the ENTER button the region setting will remain at its previous selection.



Figure 3.3.5-1 Region Map

REGION OPTIONS:

- 1 — NORTH WEST
- 2 — NORTH CENTRAL
- 3 — NORTH EAST
- 4 — CENTRAL WEST
- 5 — MIDDLE/CENTER
- 6 — CENTRAL EAST
- 7 — SOUTH WEST
- 8 — SOUTH CENTRAL
- 9 — SOUTH EAST
- ALL REGIONS
- O - RECALIBRATE

3.3.6 SELECTING THE SATELLITE SERVICE

Note:

It is not recommended you use the IDLE HOLD function if you plan on switching between satellites.

The satellite setting allows the user to select the satellite and service provider of choice. For DirecTV subscribers, the SV360 can also track a secondary or alternative satellite.

Example: If you are a subscriber to the DirecTV service most of the programming that you will be watching will be transmitted from the satellite location at 101°. You may also subscribe to programming that is transmitted from another satellite located at 119°. In order to receive programming from both satellites you can either select an individual (DTV101) satellite manually from the display or you can select a multiple (DTV101/119) satellite setup. The multiple satellite selection will automatically switch between satellites (DTV101/119) based on the channel or programming that you select on the Satellite Receiver (Multi-Satellite capable Satellite Receiver is required). Please keep in mind that the programming may pause (freeze frame) or pixelize while the antenna acquires and locks onto the new satellite.



NOTE: The multiple satellite setting will work only if your satellite receiver is set up to work in oval dish mode. Consult your satellite receiver manual for instruction.

To access the SET SATELLITE Menu

1. Press the → button under Display Select.
2. The Set Satellite display will appear with current satellite service and location blinking.
3. Use the + or - button that corresponds to the service that you subscribe to (for example: DTV101 or DISH 119, and so on).
4. When you have selected the correct service, press the ENTER button to input your change. If you do not press the ENTER button, the satellite and service selection will remain at its previous selection.
5. To return to the Run page, press the MAIN button.

SET SATELLITE OPTIONS

DTV 101 — DirecTV at 101° West Longitude

DTV119 — DirecTV at 119°

DTV 101/119 — DirecTV at 101° and 119°

DTV 101/110hd — DirecTV at 101° and 110°

DISH 110 — Dish Network at 110°

DISH 119 — Dish Network at 119°

DISH 148 — Dish Network at 148°

DISH 61.5 — Dish Network at 61.5°

EXPVU 91 — Bell ExpressVu at 91°



Note: It is not recommended to use the DTV101/119 setting unless there is programming on the DTV119 satellite that you specifically subscribe to.

3.3.7 AUTO START MODE

The Auto Start mode allows the user to turn the antenna on and off without the antenna going through the acquisition process. This mode is used when the vehicle is stationary or parked and has already acquired the satellite.

1. On the TracStar controller, press the “MAIN” button. “User Setup” will appear in the display.
2. Press the → button 3 times. “Auto Start” will appear in the display.
3. Press the “ + ” button to select Auto Start mode Yes or No.

4. Press “Enter”.

Note: By selecting “NO”, the antenna will not go through the acquisition process when the power is turned on and off.

3.3.8 SETTING THE SLEEP OPTION

The antenna tracking function makes small movements of the antenna pointing angles to optimize the signal level from the satellite even when the vehicle is not moving. This is a normal function of the antenna system. If the antenna does not sense any vehicle motion after about 15 minutes, the antenna will automatically go into sleep mode. In sleep mode, the small peaking motion will decrease and the antenna will be in its lowest power consumption state, but power is still supplied to the LNB that provides the satellite signal and TV picture. When the vehicle moves, the antenna will sense the movement and automatically “wake-up” and start tracking.

Tracking may be turned OFF at any time by placing the antenna in the Idle/Hold mode by pressing the START/STOP button on the display module. To resume tracking, press the START/STOP button again.

To access the SET SLEEP Menu from the USER SETUP display:

1. Press the START/STOP button, the system will be in Idle/Hold.
2. Press the MAIN button to User Setup.
3. Press the → button.
4. The Set Region display will appear.
5. Press the → button again.
6. The Set Satellite display will appear.
7. Press the → button again.
8. The Set Sleep display will appear with the current sleep mode option blinking.
9. Using the + or – button select the Auto (Sleep Mode) or Disable.
10. Press ENTER to input your change.
11. Press the START/STOP button, the system will be in the Run mode.

SLEEP OPTIONS

AUTO — The system will detect the amount of movement the vehicle is experiencing and adjust the tracking movement of the antenna accordingly. If the vehicle is not moving the antenna will stop tracking (sleep), but if the vehicle moves tracking will “awaken” and re-optimize the pointing of the antenna for maximum satellite signal. When the antenna is in “sleep” mode the signal may vary if the vehicle makes small movements and the antenna does not “awaken” immediately. If this mode causes picture freeze framing or loss of programming it should be set to DISABLE.

3.3.9 HDTV SETTINGS

Your TracStar DSS System is capable of receiving virtually all HDTV channels as shipped from the factory.

DirecTV® users ONLY

To allow for the various methods DirecTV uses to arrange programming on the satellites, a flexible satellite selection method is needed. The flexibility is required as DirecTV frequently and without notification, may change the specific satellite that TV programs are available on. This note is important to remember, as your ‘at home’ digital satellite TV solution varies from the TracStar system in that your home system has a larger dish and subsequently, your home dish has three LNB’s for the various satellite signals. As the TracStar does NOT have the three LNB’s, for each channel change, you the TV viewer must be aware of the desired channel, and the current primary / secondary satellite pair selected in your TracStar controller. Understanding this simple basic operation will make your viewing pleasure all you hope it to be, and provide the full array of DirecTV HDTV channels to you with the simple touch of a few buttons.

DirecTV uses three satellites, one that we’ll call the PRIMARY satellite (always 101) and two, which become SECONDARY signal satellites (110hd and 119). The primary satellite (101) carries the bulk of the TV programming while the secondary satellites carry the HDTV programs and to a lesser extent, local channels and para todos programming.

Select Your Satellite Pair – *IMPORTANT to receive the desired programming.* The “primary” satellite is always “101”. The secondary is either “110hd” or “119”, the two satellites that DirecTV use for their HDTV programming. If your desired program does NOT appear in the main menu, you may need to switch secondary satellites. Using the TracStar IDD, press the “+” button to toggle between the “101/110hd” or the “101/119” satellite pair.

The TracStar SV-360HD system can easily switch between signals from the various satellites. Understanding how they are grouped and how to access them is important to your viewing pleasure. For simplicity sake, we'll state the TracStar system can switch between satellites "101" and "110hd" OR "101" and "119" automatically. However, the switch between the two satellite pair groups requires the operator to push a button on the TracStar hand held display unit (IDD).

Since the SV-360HD system can not tell which of the two secondary satellites, "110hd" OR "119", is the proper satellite for your desired programming, the operator may need to make the proper selection on the TracStar System In Door Display (IDD) unit keypad. Remember, the selection between the primary and currently active secondary satellite is automatic - if the channel is available on the secondary satellite, but the selection between secondary satellites, will have to be done by the user by selecting the appropriate satellite pair. This operation is done by the single press of the "+" button, which toggles between the two satellite pairs.

3.3.9.1.1 The "110 Adapter"

Satellite programming of standard and high definition channels will be received by the TracStar SV-360HD system. Viewing of all programs from the "101/119" satellite pair is accomplished with your existing SV-360 hardware. As stated, DirecTV has added High Definition programming to satellite "110hd" which requires additional hardware within the SV360 for viewing those specific high definition channels. This specific hardware is known as the "110 Adapter" and is available to upgrade your SV-360HD, hence, accommodating the full spectrum of DirecTV HDTV channels. The 110 Adapter unit is not required for HDTV reception from any other provider.

The SV-360 antenna comes in multiple HDTV configurations:

<u>Antenna</u>	<u>110 Adapter(s)</u>	<u>DISH Networks and DirecTV on Satellite 101 PLUS</u>	<u>Figure</u>
SV-360 Single HD	None	DirecTV 119	2.4.4-1
SV-360 Single HD (1A)	One	DirecTV 110/119	2.4.4-2
SV-360 Dual HD	None	DirecTV 119	2.4.4-3
SV-360 Dual HD (1A)	One	DirecTV 110/119	2.4.4-4
SV-360 Dual HD (2A)	Two	DirecTV 110/119	2.4.4-5

3.3.9.1.2 Changing Channels

Changing channels is a one or two step process for the user, but a multi-step process for the controller. When the user changes the channel on the remote control, the tuner in the satellite receiver immediately changes channels. The immediate effect on the TV is that channels may appear then disappear and

messages stating, “The channel is not available” or “Contact your local provider,” may appear on the TV momentarily. The messages appear between the time you change channels on the remote control and the time it takes the antenna to switch positions to the new satellite, as required. Like an automatic door opener operation, the door has to open before you can walk through it – the receiver has to change channels before you can receive the new signal – and the antenna may also have to change positions. Hence, a short delay later, the antenna locks onto the desired satellite (delay is longer if the Region is not set correctly). Then the proper programming and messages will appear.

The MENU on your satellite TV receiver may take between 1 – 20 minutes to update. Should you need the menu to update faster, reset your satellite TV receiver once the alternate satellite pair has been selected on the TracStar controller and the satellite TV receiver will create a new menu based on data from the newly selected satellite pair after the reset.

To access the HDTV satellite pair options from the USER SETUP display:

1. Press the START/STOP button, the system will be in Idle/Hold.
2. Press the → button.
3. The Select Satellite display will appear.
4. Press the + button to select the desired satellite / satellite pair.

3.4 DEALER SETUP OPTIONS

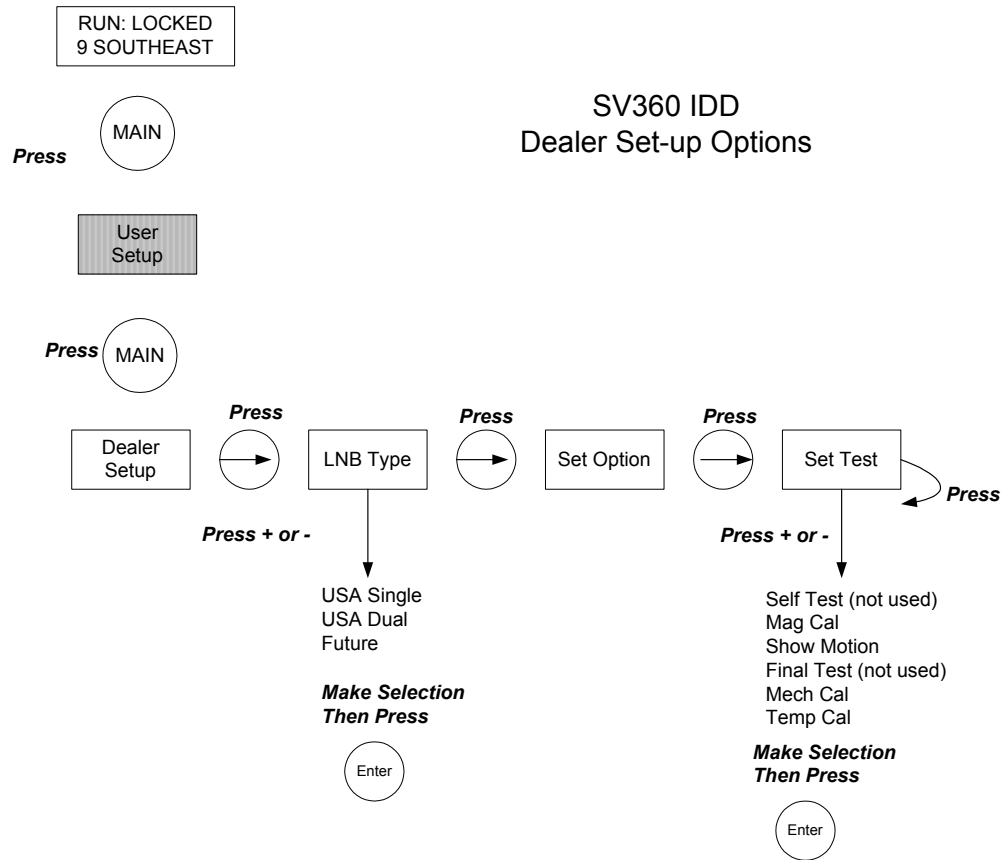


Figure 3.4-1 Dealer Setup Options

The Dealer Setup allows the dealer/installer to access optional settings and calibrations for your system. These option settings are normally accessed only during installation. It is not necessary for the user to access the dealer setup options. The Dealer Setup display is password protected and may only be accessed by your dealer/installer.

3.5 DIAGNOSTIC DISPLAY

The diagnostics display provides current information about the status and performance of the antenna system. It is also useful during diagnostic evaluation by TracStar or by the dealer/installer. There are no settings or adjustments here.

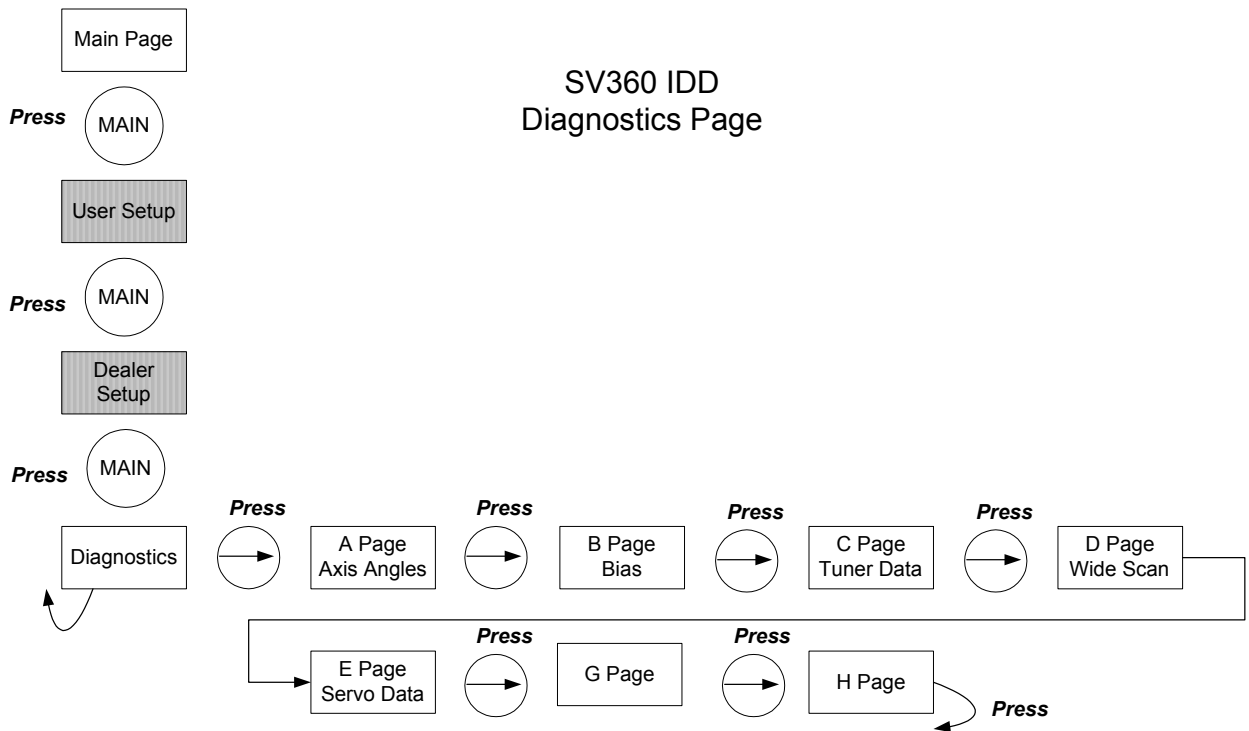


Figure 3.5-1 SV360 IDD Diagnostics Page

4 TROUBLESHOOTING

If satellite acquisition is not successful or if there are other problems with the operation of the antenna refer to the following table to isolate and troubleshoot the problems.

SECTION	SYMPTOM
4.1	Nothing is on the TV.
4.2	Remote control is unresponsive.
4.3	TV is working but no "Searching for Satellite Signal" message is present.
4.4	The display unit (IDD) doesn't power up.
4.5	Error Messages on the Display (IDD):
4.5.1	Power Up – Please Wait
4.5.2	Load Error
4.5.3	Scan Error
4.5.4	Wont' go into wide scan
4.5.5	EL Fault
4.5.6	AZ Fault
4.5.7	Lock Verify
4.6	Excessive lock-on time or multiple scan tries are necessary to acquire the satellite.
4.7	Display says locked but no programming is on the TV
4.8	The user is not receiving all subscribed television programming channels
4.9	Intermittent freeze frame or TV pixalates
4.10	Miscellaneous Problems related to High Definition Antennas using the optional 110 Adapter.

4.1 No TV PICTURE/PROGRAMMING PRESENT

ITEM	SYMPTOM	COMMENTS
4.1.1	No picture or power to the television.	Refer to the television owner's manual to make sure that the television is operating properly.
4.1.2	The television is on, but the picture is black.	<p>A. Make sure that the source and destination of the video multi-switch (if present) is set correctly.</p> <p>B. Make sure the television is set to the correct video input source. Many televisions have the following Video Input Channel Variations:</p> <p style="text-align: center;">VIDEO SIGNAL VIDEO 1 VIDEO 2 S-VIDEO</p> <p>NOTE: Check the television or receiver owner's manual for the actual options for your set up.</p>
4.1.3	The television picture is snowy.	<p>A. See 4.1.2, A</p> <p>B. If the television/receiver are set to the VIDEO mode, make sure the television is set to channel 3 or channel 4 corresponding to the receiver setting.</p>

4.2 REMOTE CONTROL IS UNRESPONSIVE

ITEM	SYMPTOM	COMMENTS
4.2.1	Remote control is unresponsive.	Refer to the Receiver owner's manual troubleshooting section (weak batteries, etc.). If the receiver is behind cabinet doors, open the doors and point the remote control at the receiver.
4.2.2	Verify the Receiver is working properly.	<p>A. Select the Satellite, DSS or similar button that operates the Receiver as opposed to another controllable device.</p> <p>B. Select the Receiver menu by pressing the Menu button. The IRD Menu should appear. If not, follow the troubleshooting procedure in the receiver manual including unplugging the receiver for 1 minute.</p>

4.3 TV IS SET CORRECTLY AND RECEIVER IS ON, BUT "SEARCHING FOR SATELLITE SIGNAL" MESSAGE IS NOT PRESENT

ITEM	SYMPTOM	COMMENTS
4.3	No "Searching for Satellite Signal" message.	A. Make sure Receiver is powered on. B. Check/perform Item 4.1.2, A. C. Unplug power from Receiver for 1 minute and plug in again. D. Check cable connection from receiver to Video select switch and television.

4.4 PROBLEMS WITH THE DISPLAY UNIT

ITEM	SYMPTOM	COMMENTS
4.4	The Display Unit (IDD) does not power up.	A. Make sure the Indoor Box (IDB) is connected to the power supply, the power supply is plugged into a live power outlet and the Display Unit (IDD) is connected to the IDB.

4.5 ERROR MESSAGES ON THE DISPLAY UNIT

ITEM	SYMPTOM	COMMENTS
4.5.1	Power Up – Please Wait	<p>A. There is no 24VDC between the IDB and the antenna. Check the coax cable between the IDB and the antenna. Look for evidence of a loose coax connection, poor coax connector installation or corrosion or water damage particularly at the antenna connection.</p> <p>B. Using a voltmeter, check for 24VDC at the coax connection to the antenna end. If the 24VDC is not present, there may be a problem with the cable or the IDB. Verify the cable by running a temporary cable from the Indoor Box to the antenna.</p> <p>C. If the 24VDC is present at the antenna input coax, the problem exists in the antenna. Remove the antenna dome. Check the interior connections for tightness.</p> <p>D. Unplug the TracStar power supply from your 110VAC wall outlet; plug it back in. See if the problem is solved.</p>
4.5.2	Load Error	<p>B. A load error indicates communication between the IDB and the antenna was lost. Check the coax cable between the IDB and the antenna. Look for evidence of a loose coax connection, poor coax connector installation or corrosion or water damage particularly at the antenna</p>

	<p>connection.</p> <p>C. Perform a “Option 21” (see Figure 5.5)</p> <p>D. If the problem continues, remove the antenna dome. Check the interior connections for tightness. Re-secure the dome.</p>
<p>4.5.3 Scan Error</p>	<p>A. The antenna will perform 4 successive scans to try and locate the satellite. If after 4 unsuccessful scan tries the antenna will stop scanning and “Scan Error” will occur. Unsuccessful scans are usually the result of antenna blockage from trees, buildings, power lines, etc.</p> <p>B. Select a different satellite from the user setup menu and see if the antenna locks onto the satellite.</p> <p>C. Try moving your vehicle</p>
<p>4.5.4 Won't Go to Wide Scan</p>	<p>A. During initial power up the display will go into ‘scan align’. After a brief period the display should go into ‘wide scan’. The antenna should acquire the satellite shortly after.</p> <p>B. Try performing a ‘O-Recalibrate’ (Figure 5.2). If the display continues to not go into wide scan, perform a temperature calibration (Figure 5.4).</p>

4.5.5	EL Fault Fault)	(Elevation	<p>A. An EL Fault may occur if there is a problem with the up and down movement of the antenna.</p> <p>B. Try restarting the antenna by turning the antenna off then back on. If the problem persists, perform a O-recalibrate (Figure 5.2).</p> <p>C. With the antenna powered off, remove the antenna dome. Rotate the antenna dish back and forward. There should be very little resistance.</p> <p>D. With the dome off perform a “Show Motion” (Figure 5.3). The antenna should be moving rapidly in a circle, up and down.</p> <p>E. Restore Dome.</p>
4.5.6	AZ Fault Fault)	(Azimuth	<p>A. An AZ Fault may occur if there is a problem with the circular movement of the antenna.</p> <p>B. Try re-starting the antenna by turning the antenna off then back on. If the problem persists, perform a “O-recalibrate” (Figure 5.2).</p> <p>C. With the antenna powered off, remove the antenna dome. Rotate the antenna dish slowly in a complete circle. There should be very little resistance.</p> <p>D. With the dome off perform a “Show Motion” (Figure 5.3). The antenna should be moving rapidly in a circle, and up and down.</p> <p>E. Restore Dome</p>

4.5.7 Lock Verify

- A. A Lock Verify will occur when the antenna is locked on the wrong satellite or there is a partial blockage of the satellite signal.
- B. Try restarting the antenna by turning the antenna off then back on. If the problem persists, perform a “O-recalibrate” (Figure 5.2).
- C. Move the vehicle away from any blockage (trees, power lines, etc...)

4.6 EXCESSIVE LOCK-ON TIME OR MULTIPLE SCAN TRIES

ITEM	SYMPTOM	COMMENTS
4.6.1	Multiple Scan Tries and Setting the region or excessive lock-on time.	<p>A. The antenna should acquire the satellite in about 2 minutes. If it takes longer, then the system is probably not optimized for your region.</p> <p>B. Verify that the region is set to your location as viewed on the Display Unit run page. If not, Set to your location (Figure 3.3.5).</p> <p>C. If the problem persists, perform the “O-Recalibrate” Figure (5.2).</p> <p>D. Possible magnetic interference of compass. Perform a Magnetic calibration (Figure 5.1).</p> <p>E. Possible blockage of signal. Try moving vehicle.</p>

4.7 THE ANTENNA WILL NOT ACQUIRE THE SATELLITE

ITEM	SYMPTOM	COMMENTS
4.7.1	Display Says Locked but no programming on the TV	<p>A. Perform trouble shooting steps outlined inn (Figure 4.1).</p> <p>B. Verify correct satellite setting (Figure 3.3.6).</p> <p>C. Perform a “O-Recalibrate” (Figure 5.2).</p>

4.8 NOT RECEIVING ALL PROGRAMMING

ITEM	SYMPTOM	COMMENTS
4.8	Possible subscription problem.	<p>A. Call service provider and have them re-set or “hit” your card.</p> <p>B. Check signal strength meter in</p>

	Receiver menu. Change transponders to check odd and even numbered. If one set is bad, possible wiring problem, bad LNB or down converter in the case of a dual set-up. Also possible bad receiver.
--	--

4.9 INTERMITTENT OR FREEZE FRAME OF PICTURE

ITEM	SYMPTOM	COMMENTS
4.9.1	Picture freezes while stationary.	<p>A. Check for heavy precipitation or partial blockage of signal. You may need to move your vehicle or clean your dome.</p> <p>B. Possible intermittent cable connection. Check all cable connections from the Indoor Box (IDB) to the antenna.</p> <p>C. Put antenna into Idle/Hold mode while stationary by pressing the START/STOP button. Check signal strength in the receiver menu. If fluctuating, an intermittent cable is possible. It is also possible that the receiver itself or the LNB is bad. If the signal strength is good, it is possible that the signal will deteriorate over time, and then the electronics may be bad. Call factory.</p>
4.9.2	Picture freezes while moving.	<p>D. Overpasses, trees, etc will cause this condition.</p> <p>E. If no blockage, Re-set power to the receiver.</p> <p>F. Possible low signal strength condition.</p> <p>G. Disable Sleep Mode - See</p>

Section 2.37.

- H. Perform Magnetic Calibration – (Figure 5.1).
- I. Possible bad gyro or motors; call factory.

4.10 MISCELLANEOUS PROBLEMS RELATED TO HIGH DEFINITION ANTENNAS USING THE OPTIONAL 110 ADAPTER

ITEM	QUESTION	ANSWER										
4.10.1	<i>What are my satellite options in the TracStar controller menu?</i>	<p>There are 8 TV satellite options:</p> <table border="0"> <tr> <td>ExpVu82</td> <td>ExpUv91</td> </tr> <tr> <td>DTV101</td> <td>Sat 110</td> </tr> <tr> <td>Sat 119</td> <td>DTV101/110hd</td> </tr> <tr> <td>DTV101/119</td> <td>Dish 148</td> </tr> </table> <p>DTV satellites are DirecTV. Dish 61 is no longer a valid selection and should not be used.</p>	ExpVu82	ExpUv91	DTV101	Sat 110	Sat 119	DTV101/110hd	DTV101/119	Dish 148		
ExpVu82	ExpUv91											
DTV101	Sat 110											
Sat 119	DTV101/110hd											
DTV101/119	Dish 148											
4.10.2	<i>Where are the HDTV channels?</i>	<p>Typically they are found in the channel range of the “70’s” and “90’s”. When viewing HDTV channels, the HD symbol appears next to the picture preview area on the guide menu. Current locations are (subject to change):</p> <table border="0"> <tr> <td>Satellite 110</td> <td>Satellite 119</td> </tr> <tr> <td>70 HBO</td> <td>73 ESPN</td> </tr> <tr> <td>71 Showtime</td> <td>76 DSHD</td> </tr> <tr> <td>78 HDNetMovies</td> <td>79 HDN</td> </tr> <tr> <td>91-98 NFL</td> <td></td> </tr> </table>	Satellite 110	Satellite 119	70 HBO	73 ESPN	71 Showtime	76 DSHD	78 HDNetMovies	79 HDN	91-98 NFL	
Satellite 110	Satellite 119											
70 HBO	73 ESPN											
71 Showtime	76 DSHD											
78 HDNetMovies	79 HDN											
91-98 NFL												
4.10.3	<i>How do I just watch my normal channels?</i>	Select the channel of your choice on your receiver remote control.										
4.10.4	<i>How do I select a DirecTV HDTV channel?</i>	On your TracStar controller, select the satellite pair that has the desired programming. DirecTV uses satellite ‘101’ for most programming while the HDTV channels are on satellite “110’ or ‘119’. Accordingly, please select ‘101/110hd’ OR ‘101/119’ for your satellite pair. The TracStar controller will monitor your channel selection. Should you select a HDTV channel on the remote control, the TracStar controller will switch to the selected secondary HDTV satellite channel automatically.										

4.10.5	<i>I set my controller to '101/110hd'. I've selected a channel on satellite '119' and don't see the programming. Why?</i>	The controller will switch to the currently selected secondary satellite, which is '110hd'. To receive programming on the '119' satellite, toggle the '+' key on the TracStar controller until you see "101/119" on the TracStar display device.
4.10.6	<i>I have one HD receiver and one standard receiver. Can I use both?</i>	Yes you can. Read the Q&A below.
4.10.7	<i>I have two receivers – so can I watch programs from two satellites at the same time?</i>	No. The two channels you select to view must be on the same satellite. Remember, the TracStar has only one LNB compared to the three on a typical HDTV unit at home.
4.10.8	<i>I set the satellite selection and programmed my channels but the MENU or Channel Guide doesn't show my channels. Why?</i>	<p>When the satellite receiver unit is turned on, the Guide for the current satellite pair selection on the TracStar controller is loaded - based on that specific satellite pair menu selection. When the unit is changed to a new satellite selection/location, it may take from a few minutes up to as much as 30 minutes for the satellite receiver system to update the menu guide on its own.</p> <p>When the guide is first installed, it is good for only the initial pair of selected satellites. If you need immediate access to the guide, select the other satellite pair and then press the reset button on the satellite receiver and the menu will be regenerated as the satellite receiver comes back on.</p>
4.10.9	<i>My vehicle is parked and my antenna is in "IdleHold" mode. Can I still switch between satellite "101/110" and "101/119" pairs?</i>	No. The antenna will not move when in the "IdleHold" mode. To enable the unit to switch satellite pairs, press "Start/Stop" once to put the antenna in the "Run" mode. Pressing the key will enable the antenna to switch satellite pairs. If using the "IdleHold" mode, this step must be taken each time satellite pairs are changed.

4.10.11 <i>The Quick Connect Guides show HDTV receivers and regular receivers. Can I just use regular receivers?</i>	Yes, but if you do, you will NOT receive HDTV programming. The system will continue to operate without the HDTV receivers for regular programming channels; so in a sense, the HDTV receiver is optional for satellite TV reception. However, at the same time, the HDTV receiver is REQUIRED for HDTV reception.
4.10.12 <i>Antenna won't switch between satellites when changing high definition channels. What do I do?</i>	<ul style="list-style-type: none">A. Make sure the antenna is NOT in 'Idle Hold'.B. Look for signal blockage (Trees, buildings, power lines, etc.)C. Receiver must be set to oval dish 3 or A, B and C (refer to you receiver manual.)D. Perform a "O-Recalibrate."

5 SYSTEM TESTS

- 5.1 Magnetic Calibration Procedure
- 5.2 O-Recalibrate Procedures
- 5.3 Show Motion Procedures
- 5.4 Temperature Calibration Procedures
- 5.5 Option 21 Reset

Note: All tests are performed using the push buttons on the TracStar In-Door display (IDD).

5.1 MAGNETIC CALIBRATION

The Magnetic Calibration Procedure will null out any magnetic influence from the vehicle on the SV360 built in compass. This procedure is normal for navigation systems that use a compass. This procedure only needs to be performed one time and if performed, will enhance the antenna's ability to acquire the satellite quickly.

Note: In order to perform a Magnetic Calibration, the vehicle will be driven in a complete circle with start to finish lasting 1-2 minutes.

Perform Magnetic Calibration:

1. Turn on the power to the Tracstar antenna, receiver and television.
2. Press the START/STOP Button on the Display (IDD). The screen should read "Idle/Hold."
3. Press the MAIN button twice, the "Dealer Setup" menu should appear.
4. Enter the code by pressing the + button until the number 13 appears and press ENTER.
5. Now press the → button three times until "Set Test" appears.
6. Press the + button until "Mag Cal" appears on the screen. Now, press the ENTER button.
7. Press the + button once and "Run Now" should appear in the top right corner of the display. Now, press the ENTER button, again.
8. The words "Mag Cal Wait" should appear on the display. This should last 2-3 minutes while the antenna performs a self-calibration. Do not move the coach during this period.
9. After this period, the words "Mag Cal Turn" will appear. Drive the coach in a 360-degree circle in 1-2 minutes. This is usually a nice gentle turn at idle speed, maybe a little slower than idle speed. There is no requirement on the size or shape of the circle, just try to make the turn last more than one minute.
10. As you complete the circle, keep turning until the words "Mag Cal Done" appear.
11. You can now stop the vehicle. Turn power off (press the ENTER and – button simultaneously for 3 seconds) and then back on (Press the ON or START/STOP button). The system will now perform a satellite acquisition sequence.

5.2 O-RECALIBRATE

The O-Recalibrate is used when the antenna has difficulty lockin onto the correct satellite or will not lock on to any satellite.

Perform O-Reclaibrate:

1. With the TracStar system powered on, press the Start/Stop button on the display (IDD). The screen should read "IDLE HOLD."
2. Press the MAIN button once. The screen will read "User Setup."
3. Press the → button once. The screen will read "Set Region."
4. Press the " + " button until "O-Recalibrate" appears on the screen.
5. Press ENTER. The screen should read "IDLE HOLD."
6. Press START/STOP and the display will go into "SCAN ALIGN."

5.3 SHOW MOTION

The Show Motion procedure is used to verify proper elevation and azimuth movement. This test is usually used when an elevation (EL) fault or azimuth (AZ) fault appears on the display (IDD).

Perform Show Motion:

1. With the TracStar system powered on, press the START/STOP button on the display (IDD). The display will read "IDLE HOLD".
2. Press the MAIN button 2 times. The screen will read, "Dealer Set Up – Code 0"
3. Press the " + " button 13 times. The screen will read CODE 13.
4. Press the ENTER button 1 time. The screen will flash "Code 13".
5. Press the → button 3 times. The screen will read "Set Test".
6. Press the " + " button 3 times. The screen will read "Show Motion".
7. Press ENTER. The screen will read "Cancel" on top.
8. Press the " + " button 1 time. The screen will read "Run Now" on top.
9. Press ENTER. The screen will read "Idle Hold".

The antenna is now rotating in a 360° degree circle (azimuth) and moving up and down (elevation) at a $20^{\circ} - 60^{\circ}$ angle.

To verify proper movement in show motion:

1. Press the MAIN button 3 times. The screen will read "Diagnostics."
2. Press the → button 1 time. The screen will read:

AA (0- 360°) E ($20^{\circ} - 60^{\circ}$)

The AA is the Azimuth and the numbers should be moving rapidly from 0 - 360°

The E is the Elevation and the numbers should be moving rapidly from 20- 60° .

5.4 TEMPERATURE CALIBRATION

The temperature calibration is used when bias readings are too high to allow proper movement of the antenna or prevent the antenna from locking onto the satellite.

To verify BIAS readings:

1. With the TracStar system powered on, press the MAIN button 3 times on the display (IDD). The screen should read "Diagnostics".
2. Press the → button 2 times. The top line of the screen will read:

BA(numbers) E (numbers)

The AA is the Azimuth and the numbers should be below +/- 6000.

The E is the Elevation and the numbers should be below +/- 6000.

NOTE:

These numbers may be changing rapidly.

To Perform Temperature Calibration

Note: The TracStar antenna must be stationary during this test (vehicle parked).

1. Press the MAIN button until "Dealer Setup" appears on the display (IDD).
2. Press the " + " button 13 times. The screen will read "Dealer Setup – Code 13."
3. Press ENTER 1 time. The screen will flash "Code 13."
4. Press the → button 3 times. The screen will read "set test".
5. Press the " + " button 6 times. The screen will read "Temp Cal."
6. Press ENTER 1 time. The screen will read "Cancel" on top.
7. Press the " + " button 1 time. The screen will read "Run Now."
8. Press ENTER. The screen will read "Temp Cal."

The temperature Calibration may take 1-4 hours to complete. During this period DO NOT move the vehicle. The display (IDD) will read "Operation

Done” when finished. Turn the TracStar Antenna off then power on the Antenna through the display (IDD). Normal satellite acquisition should occur.

5.5 OPTION 21 RESET

The Option 21 Reset is used when information that is programmed into the antenna is lost.

To Perform Option 21 Reset:

1. With the TracStar system powered on, press the MAIN button 2 times. The display (IDD) will read “Dealer Setup – Code 0”.
2. Press the “ + “ button 13 times. The screen will read “Dealer Setup – Code 13.”
3. Press ENTER. The screen will flash “Code 13.”
4. Press the → button 2 times. The screen will read “Set Option – Option 0”
5. Press the “ + “ button until “Option 21” appears.
6. Press ENTER. The screen will read “Loading” for 10 seconds, then read “Option 0.”
7. Remove the power to the TracStar antenna by unplugging the black phone cord on the left side of the display unit (IDD) or by unplugging the main power cord from your 120VAC wall outlet. (Do not use the “Enter” and “Minus” button to turn the antenna off.)
8. Restore power to the TracStar antenna. Normal satellite acquisition should start immediately.