



TracVision Interface Box

Circular Configuration for North America



TracVision Interface Box User's Guide

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User's Guide

This user's guide provides all of the basic information you need to operate, set up, and troubleshoot the TracVision system using the interface box. For detailed antenna system installation information, please refer to the *TracVision Installation Guide*.



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If you have any comments regarding this manual, please e-mail them to manuals@kvh.com. Your input is greatly appreciated!



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Table of Contents

1	Introduction	
	Using this Manual	3
	System Overview	5
2	Operation	
	Receiving Satellite TV Signals	9
	Turning the System On/Off	10
	System Startup	11
	Understanding the Status Screen	12
	Switching Satellites	14
3	System Preferences	
	Turning DewShield On/Off	19
	Adjusting the Display Brightness	21
	Entering Latitude/Longitude	22
4	Setup	
	Setup – DIRECTV	27
	Setup – DISH Network	32
	Setup – ExpressVu	36
	Setup – Manual Mode	41
	Resetting the System to Change Setup	43
5	Troubleshooting	
	Five Simple Checks	47



System Status Lights..... 48
Running the Diagnostics Test..... 50
Viewing System Information..... 53
Changing the Satellite Switching Mode..... 56
Calibrating the Gyros 58
Changing Tracking Parameters 61
Technical Support..... 65
Product Care 66

A Wiring Diagrams

Wiring Diagram for One Standard Receiver..... 69
Wiring Diagram for Two Standard Receivers..... 70
Wiring Three Standard Receivers 71
Wiring One DIRECTV HD Receiver 72
Wiring One Standard Receiver and
One DIRECTV HD Receiver 73
Wiring One Standard Receiver and
One Digital Video Recorder (DVR) 74

B Menus Quick Reference Guide

Interface Box Menus..... 77



1. Introduction

This chapter provides a basic overview of this manual and your TracVision system.

Contents

Using this Manual	3
System Overview	5





Using this Manual

This manual provides complete operation, setup, and troubleshooting information for your TracVision system.

Who Should Use This Manual


The **user** should refer to the "Operation" and "System Preferences" chapters to learn how to operate the system using the interface box.













The **user** or **installer** should refer to the "Setup" chapter for information on configuring the system for the desired satellite(s). The **user** or **installer** should also refer to the "Wiring Diagrams" appendix for information on connecting additional or special receivers.

The **user** and/or **servicing technician** should refer to the "Troubleshooting" chapter to help identify the cause of a system problem.

Icons Used in this Manual

This manual uses the following icons to call attention to important information:

Icon	Description
	This is a danger, warning, or caution notice. Be sure to read these carefully to avoid injury!

Icon								
<table border="1" style="width: 100%; text-align: center;"> <tr> <td>MENUS</td> <td>CHANGE</td> <td>ACCEPT</td> <td>EXIT</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	MENUS	CHANGE	ACCEPT	EXIT				
MENUS	CHANGE	ACCEPT	EXIT					
								
Description								
This is an illustration of the buttons on the interface box. Gray shading indicates which button the user should press.								

Typographical Conventions

This manual uses the following typographical conventions:

Text Example	Description
Press ▼MENUS to view the menu	Both the icon and the name of the button are provided.
SELECT SATELLITES	Text as it appears on the interface box display
The display shows "BRIGHTNESS"	Text in quotes is shown on the interface box display
<Satellite name>	Brackets indicate a variable value
See <i>"Switching Satellites"</i> on page 14.	Cross-reference to another chapter in the manual or to a website

Related Documentation

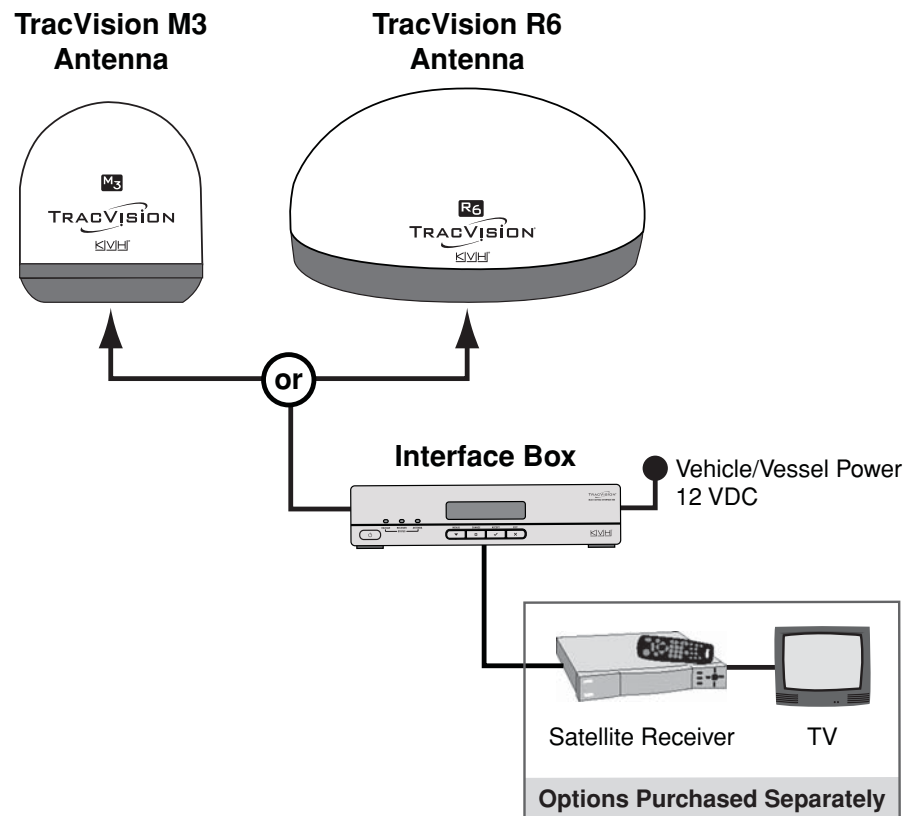
In addition to this User's Guide, the following documents are provided with your TracVision system:

Document	Description
Installation Guide	Complete product installation instructions
Quick Start Guide	Handy quick reference to basic operation and setup
Product Registration Form	Details on registering the product
Warranty Statement	Warranty terms and conditions
Contents List	List of every part supplied in the kit

System Overview

Your TracVision system is a state-of-the-art, actively stabilized antenna system that delivers live satellite TV to your mobile audio/video entertainment system. A basic system is illustrated below. Receiver wiring diagrams are provided in *"Wiring Diagrams"* on page 67.

Figure 1-1 TracVision System Diagram (Typical Installation)



The **antenna** uses integrated DVB technology to quickly acquire and track the correct satellite, switch between satellites, and send TV signals to the interface box. Internal gyros allow the antenna to track the satellite at all times, even while you're on the move!

The **interface box** allows you to set up and control the system using its four pushbuttons and LCD display. It also supplies power to the antenna and delivers satellite TV signals to your satellite TV receiver.

Differences Between TracVision M3 and TracVision R6

The interface box is compatible with two different antenna models: TracVision M3 and TracVision R6. All system functions are identical with just a few exceptions:

TracVision M3	TracVision R6
<ul style="list-style-type: none">• Designed for marine use• Latitude/longitude function allows you to enter your vessel's position to optimize satellite acquisition• Advanced maintenance functions accessible from the interface box menu (gyro calibration and tracking parameter changes)	<ul style="list-style-type: none">• Designed for RV use• Built-in GPS optimizes satellite acquisition• DewShield™ electronic dew elimination system prevents dew from forming on dome• KVH-authorized technicians can access advanced maintenance functions

The interface box detects these differences and presents only the menus that apply to the connected antenna.



2. Operation

This chapter explains how to use the interface box to operate the TracVision system. It explains how to turn the TracVision system on or off, interpret the startup screens, and switch between satellites.

Contents

Receiving Satellite TV Signals	9
Turning the System On/Off	10
System Startup	11
Understanding the Status Screen	12
Switching Satellites	14

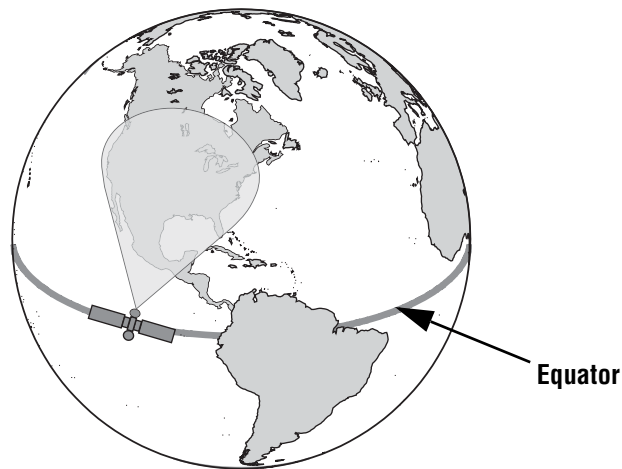


Receiving Satellite TV Signals

Television satellites are located in fixed positions above the Earth's equator and beam TV signals down to certain regions of the planet (not worldwide). To receive TV signals from a satellite, you must be located within that satellite's unique coverage area.

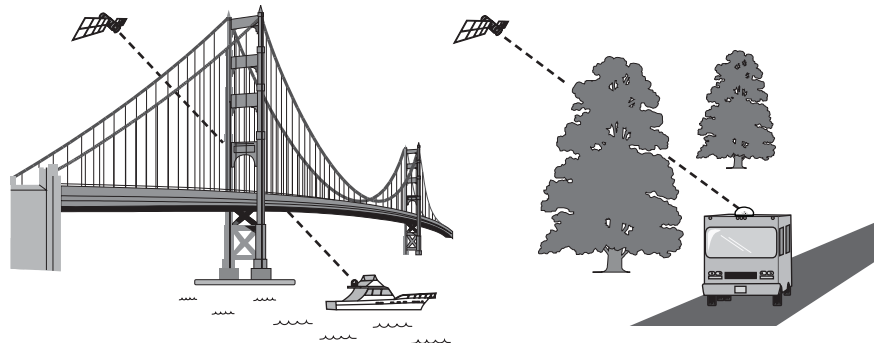
***TIP:** For your convenience, KVH provides links to several websites that offer satellite coverage information. Simply visit our website at www.kvh.com/footprint.*

Figure 2-1 Location of DIRECTV 101 Satellite



In addition, since TV satellites are located above the equator, the TracVision antenna must have a clear view of the sky to receive satellite TV signals. Anything that stands between the antenna and the satellite can block the signal, resulting in lost reception. Common causes of blockage include trees, buildings, and bridges. Heavy rain, ice, or snow may also temporarily interrupt satellite signals.

Figure 2-2 Examples of Satellite Blockage



Turning the System On/Off

Since the interface box supplies power to the antenna, you can turn the antenna on or off using the interface box ϕ POWER switch.

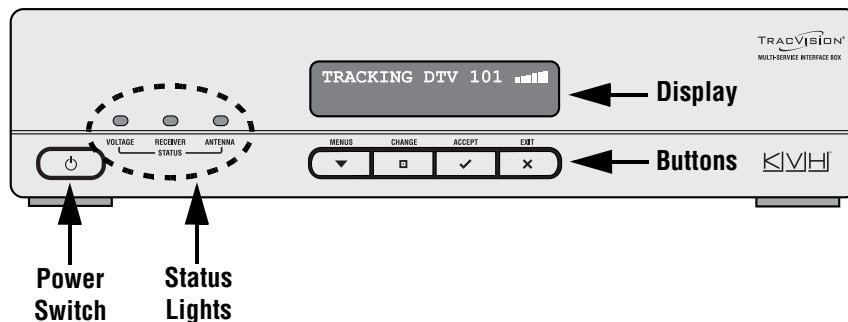
Turning On the System

Follow the steps below to turn on your TracVision system.

1. Make sure the antenna has a clear view of the sky.
2. Turn on your satellite TV receiver and TV.
3. Press the ϕ POWER switch on the front of the TracVision interface box.
4. Wait one minute for system startup.

Once the antenna finds the correct satellite, all three status lights on the interface box should be lit green. If any lights are not lit green, refer to *"System Status Lights" on page 48*.

Figure 2-3 Interface Box Components



Turning Off the System

Follow the steps below to turn off the TracVision system.

1. Press the ϕ POWER switch on the front of the TracVision interface box.
2. Turn off your satellite TV receiver and TV.

System Startup

The display shows the following screens during startup.

Interface Box Screen	Description
KVH INTERFACE BOX VERSION X.YZ	Interface box software version
KVH TRACVISION M3 SYS SW VERSION X.YZ	Antenna model and main software version
KVH TRACVISION M3 RF SW VERSION X.YZ	Antenna RF software version
INSTALLED SATELLITE 101	Satellite(s) installed for tracking
INITIALIZING ANTENNA	Antenna performs self-test
SEARCHING FOR 101	Antenna searches for the selected satellite

Warning Messages on Startup

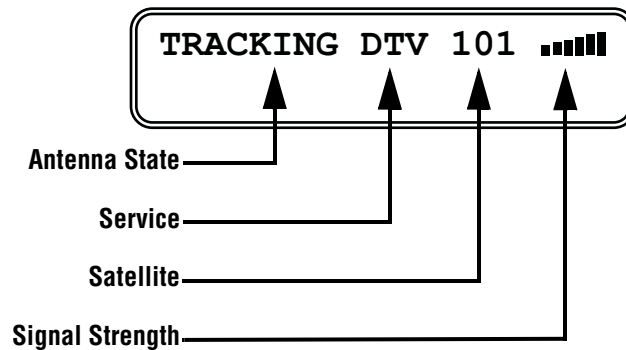
During startup, make sure none of the following warning messages appear on the display.

Warning	Description
SYSTEM SAT MISMATCH PRESS ✓ TO FIX	The interface box and antenna are out of sync. Just press ✓ACCEPT to synchronize.
SAT NOT INSTALLED	The receiver is tuned to a channel carried by a satellite that is not installed in the antenna. You may need to change your setup.

Understanding the Status Screen

Following startup, the interface box display shows the current system status.

Figure 2-4 Interface Box Status Screen



NOTE: If your system is set up for DIRECTV HDTV, the status screen differs somewhat. See the table on page 14.

Screen Field	Description
Antenna State	Current state of the antenna: <ul style="list-style-type: none"> • IDLE • INITIALIZING • SEARCHING • TRACKING • ERROR
Service	Satellite TV service currently set up in the TracVision system: <ul style="list-style-type: none"> • DTV (DIRECTV) • DISH (DISH Network) • EXVU (ExpressVu) • MAN (Manual)
Satellite	Satellite that the antenna is currently tracking <i>This number refers to the satellite's "orbital slot," which is its longitudinal location above the equator.</i>
Signal Strength	Strength of the satellite TV signal, as measured by RF level <i>The more bars, the stronger the signal, just like a cell phone. Three bars = good reception.</i>



“System Needs Setup”



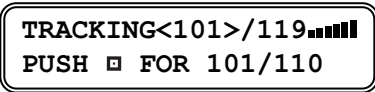
If the interface box shows “System Needs Setup,” the antenna system is not yet configured for the satellites you wish to track. See “[Setup](#)” on [page 25](#) for setup instructions.

Figure 2-5 “System Needs Setup” Screen



Switching Satellites

If your system is set up to track multiple satellites, you can easily switch between them. Use the switching method that applies to your particular setup (see *“Setup” on page 25* for details). You can identify the current satellite switching method by the format of the status screen:

Status Screen Example	Satellite Switching Method
	Automatic
	Manual
	Automatic with DIRECTV HDTV

Automatic Satellite Switching

If your system is set up for automatic switching, the antenna automatically switches satellites as you change channels using the receiver's remote control.

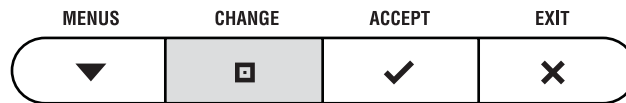
The following antenna setups use automatic satellite switching:

Service	Antenna Setting	Satellites
DIRECTV	OVAL2	101 and 119
DISH Network	DISH500	119 and 110
ExpressVu	DUAL LNB	91 and 82

Manual Satellite Switching

If your system is not set up for automatic satellite switching, you can use the interface box to switch between satellites.

Press **▣**CHANGE until the display shows the desired satellite.



Automatic Satellite Switching with DIRECTV HDTV Converter

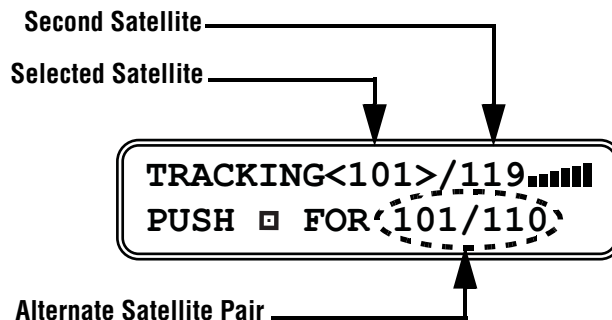
NOTE: To order a KVH HDTV converter (KVH part number 02-1431), contact your KVH dealer. To find a dealer near you, visit www.kvh.com/wheretogetservice.

If you have the optional KVH HDTV converter installed, and your system is set up for automatic switching with DIRECTV HDTV, you can select between two satellite pairs for automatic switching:

- 101 (primary) and 119 (locals)
- 101 (primary) and 110 (HDTV)

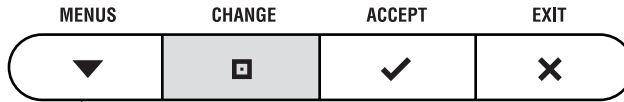
The selected pair appears at the top of the display; brackets (<>) surround the satellite that is currently selected for tracking. The antenna automatically switches between the two satellites in the selected pair as you change channels using the receiver's remote control. In the example below, the 101/119 pair is selected and the antenna is tracking the 101 satellite.

Figure 2-6 Status Screen in Automatic - DIRECTV HDTV Mode



Selecting the Alternate Satellite Pair

Press **▣**CHANGE to select the alternate satellite pair.



The following antenna setups use automatic satellite switching with the DIRECTV HDTV converter:

Service	Antenna Setting	Satellites
DIRECTV	OVAL3	101, 110, and 119

TIP: For your convenience, KVH lists DIRECTV HDTV channels, and the DIRECTV satellites that carry them, on the web at www.kvh.com/HDlineup. Since DIRECTV changes its channel lineups frequently, KVH can e-mail updates to you whenever the HDTV lineup changes. Register for this free service when you visit the website for the first time.



3. System Preferences

This chapter explains how to change the settings for DewShield, display brightness, and latitude/longitude. Refer to *“Interface Box Menus” on page 77* for a quick reference guide to accessing these functions within the menu.

Contents

Turning DewShield On/Off	19
Adjusting the Display Brightness.....	21
Entering Latitude/Longitude	22



Turning DewShield On/Off

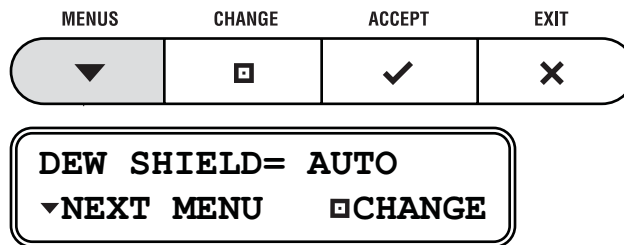
IMPORTANT!

This section applies to **TracVision R6 only**. Only the TracVision R6 antenna includes a DewShield electronic dew elimination system (*patent pending*).

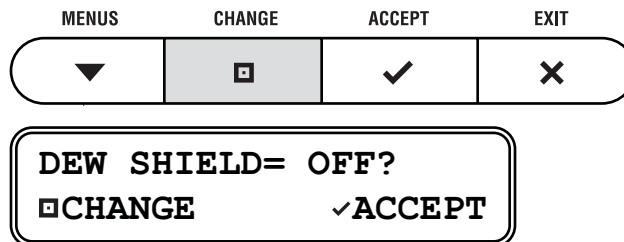
This revolutionary feature keeps the antenna dome clear of dew, ensuring optimum reception of satellite TV signals (moisture weakens signals). Follow the steps below if you need to change the current DewShield setting.

TIP: The DewShield dew elimination system is designed to **prevent** dew from forming on the antenna. If DewShield is set to OFF, and dew has formed on the dome, setting DewShield back to AUTO will not shed water. For this reason, KVH recommends that you always keep DewShield set to AUTO unless power conservation is a critical concern.

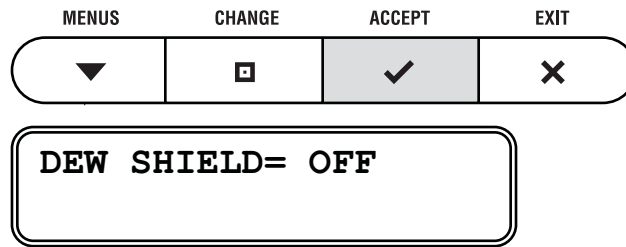
1. Press ▼MENUS until the display shows "DEW SHIELD."



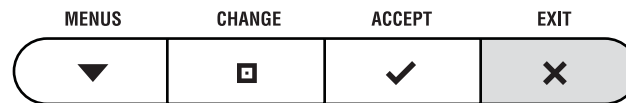
2. Press □CHANGE until the display shows the desired setting: AUTO or OFF.



3. Press ✓ACCEPT.



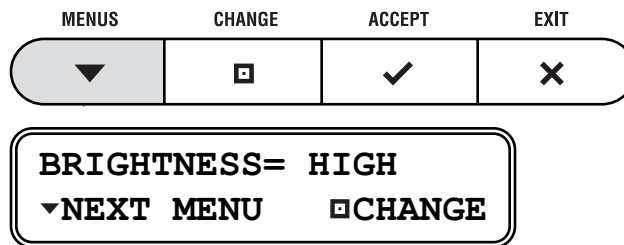
4. Press ✕EXIT to exit the menu.



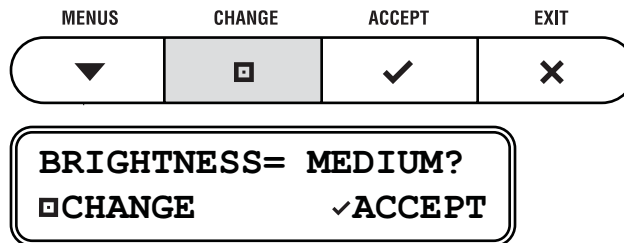
Adjusting the Display Brightness

Follow the steps below to adjust the brightness of the interface box display.

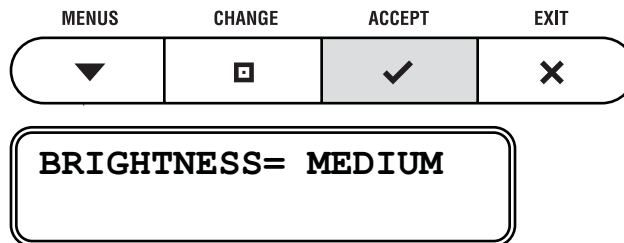
1. Press ▼MENUS until the display shows "BRIGHTNESS."



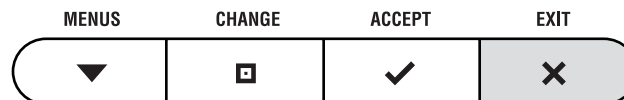
2. Press □CHANGE until the display shows the desired setting: HIGH, MEDIUM, or LOW.



3. Press ✓ACCEPT.



4. Press ✕EXIT to exit the menu.



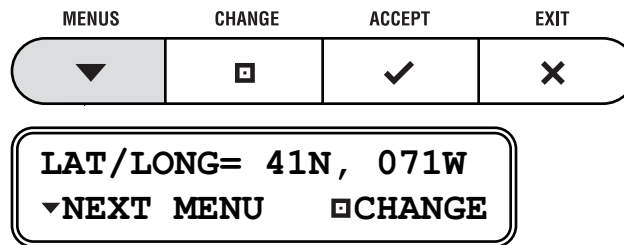
Entering Latitude/Longitude

IMPORTANT!

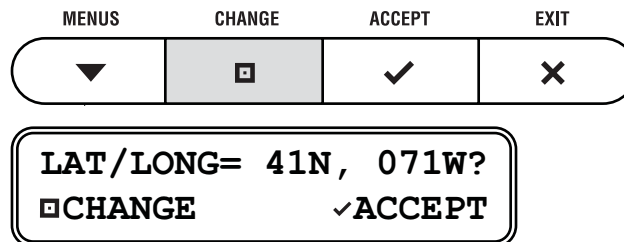
This section applies to **TracVision M3** only. Manually entering your position is unnecessary with the TracVision R6 because that system includes an integrated GPS.

Follow the steps below to enter your vessel's latitude and longitude into the system. The antenna will use your position information to speed up satellite acquisition. (If the antenna knows where you are located, it knows where it should start looking for the satellite.)

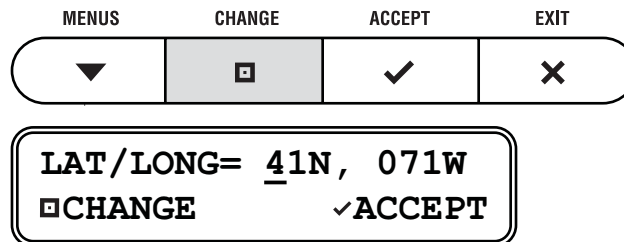
1. Press **▼**MENUS until the display shows "LAT/ LONG."



2. Press **□**CHANGE.

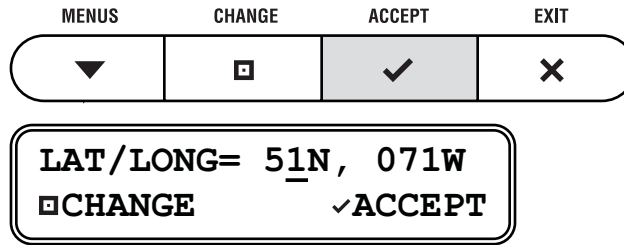


3. Press **□**CHANGE again. A cursor appears under the first number in the displayed latitude.

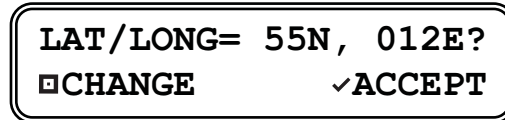


4. Press **□**CHANGE until the number is set to the first digit of your vessel's current latitude.

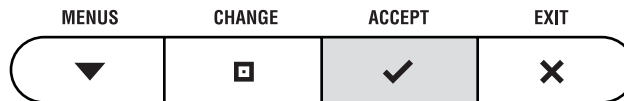
5. Press ✓ACCEPT. The cursor moves to the next number.



6. Repeat steps 4 and 5 to set the remaining digits (plus North/South and East/West directions) of your latitude and longitude. Once you have set the entire position, the cursor disappears from the display.



7. Press ✓ACCEPT. The antenna restarts. Wait one minute for system startup.





4. Setup

When you turn on the TracVision system for the first time, the interface box display shows “SYSTEM NEEDS SETUP.” This chapter explains how to set up the TracVision system for your particular satellite TV service and receiver configuration.

Contents

Setup – DIRECTV.....	27
Setup – DISH Network.....	32
Setup – ExpressVu.....	36
Setup – Manual Mode	41
Resetting the System to Change Setup.....	43



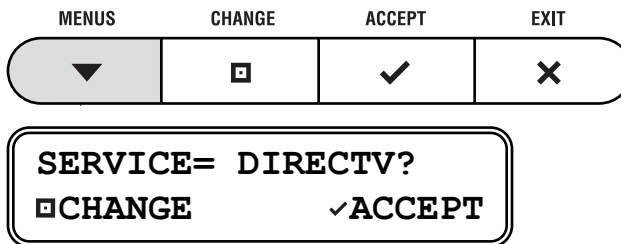
Setup – DIRECTV

Follow the steps below to set up the system for DIRECTV® service.

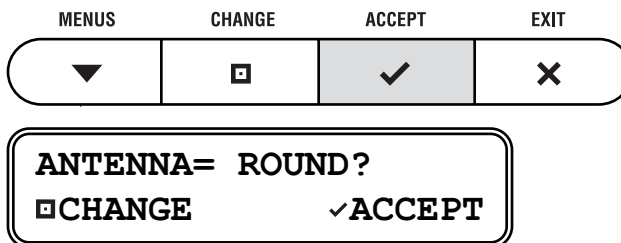
NOTE: If the status screen does not show “System Needs Setup,” follow the steps in “Resetting the System to Change Setup” on page 43.



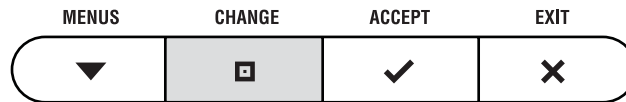
1. Press any button to begin the setup process.



2. The display already shows “DIRECTV.” Press ✓ACCEPT.



- Press **▣**CHANGE until the display shows the desired antenna type (see the table below).

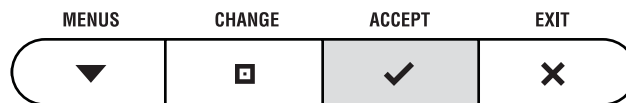


Antenna	Satellites Used	Satellite Switching
ROUND	101 only	None (Unnecessary)
OVAL2	101, 119	Automatic
OVAL3*	101, 110, 119	Automatic with HDTV
MANUAL	Select up to 4	Manual

* Select OVAL3 only if a DIRECTV HDTV converter is installed.

***TIP:** The antenna type you select should match the “dish type” setting on your satellite TV receiver. Refer to your receiver owner’s manual for details.*

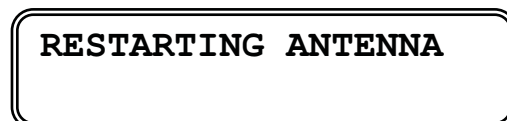
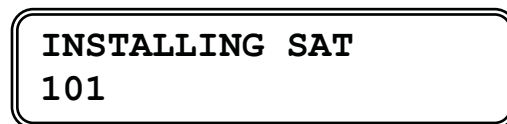
- Press **✓**ACCEPT.



The remaining steps vary depending on the antenna type you selected. Follow the steps for your selected antenna type.

Antenna Type = Round?

The setup process is complete. The display shows the installed satellite (101) momentarily then the antenna restarts. Wait one minute for system startup.



Antenna Type = OVAL2?

The setup process is complete. The display shows the installed satellites (101 and 119) momentarily then the antenna restarts. Wait one minute for system startup.

INSTALLING SATS
 101 119

RESTARTING ANTENNA

Antenna Type = OVAL3?

Now you need to select which satellite pair you want the antenna to track first, 101/110 or 101/119.

TRACK= 101/110?
 CHANGE **ACCEPT**

1. Press **CHANGE** until the display shows the desired satellite pair.

MENUS	CHANGE	ACCEPT	EXIT
▼	▣	✓	×

2. Press **ACCEPT**.

MENUS	CHANGE	ACCEPT	EXIT
▼	▣	✓	×

TRACK= 101/119

3. The display shows the installed satellites (101, 119, and 110) momentarily then the antenna restarts. Wait one minute for system startup.

INSTALLING SATS
101 119 110

RESTARTING ANTENNA

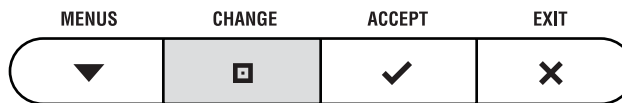
Antenna Type = MANUAL?

Now you need to select which satellites to install in the antenna. The 101 satellite is required for DIRECTV service, so it is installed automatically as the first satellite.

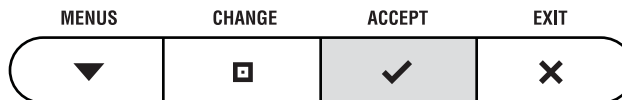
SAT 1 OF 4= 101
(REQUIRED)

SAT 2 OF 4= NONE?
 CHANGE **ACCEPT**

1. Press CHANGE until the display shows the next satellite you want to install. You can choose 72, 110, 119, or NONE.



2. Press ACCEPT to install the satellite.





3. Repeat steps 1 and 2 for the remaining satellites you want to install. If you don't want to install four satellites, select NONE instead.

Once you have installed all four satellites, or you have selected NONE, the display shows the installed satellites momentarily then the antenna restarts. Wait one minute for system startup.

INSTALLING SATS
101 119 72

RESTARTING ANTENNA

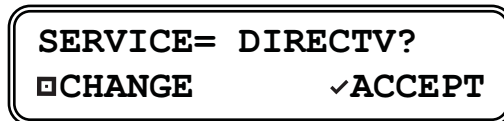
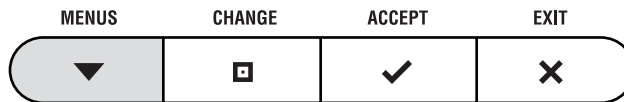
Setup – DISH Network

Follow the steps below to set up the system for DISH Network™ service.

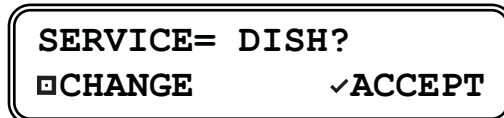
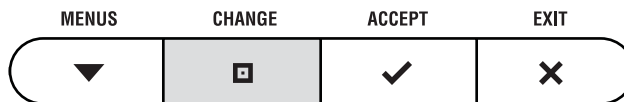
NOTE: If the status screen does not show “System Needs Setup,” follow the steps in “Resetting the System to Change Setup” on page 43.



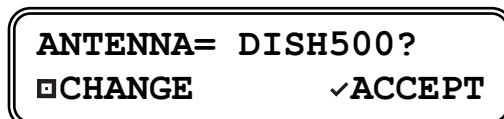
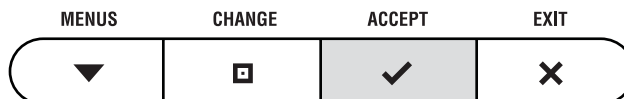
1. Press any button to begin the setup process.



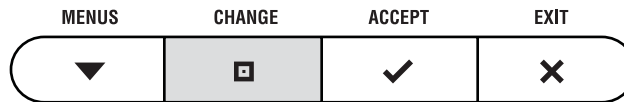
2. Press CHANGE until the display shows “DISH”.



3. Press ACCEPT.



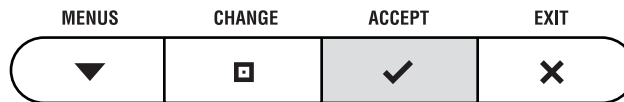
- Press **▣**CHANGE until the display shows the desired antenna type (see the table below).



Antenna	Satellites Used	Satellite Switching
DISH500	119, 110	Automatic <i>Compatible only with model 311 receiver</i>
MANUAL	Select up to 4	Manual

NOTE: At this time, DISH Network supports only the standard-definition model 311 receiver for mobile use. All other receiver models have been designed for home use only.

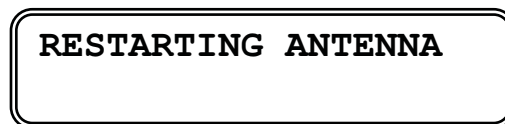
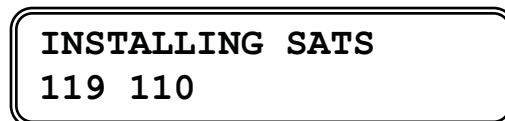
- Press **✓**ACCEPT.



The remaining steps vary depending on the antenna type you selected. Follow the steps for your selected antenna type.

Antenna Type = DISH500?

The display momentarily shows the installed satellites (119 and 110) then the antenna restarts. Wait one minute for system startup.



Now you need to run the Check Switch function on your DISH Network 311 receiver to configure the receiver for TracVision compatibility. Follow the steps in [“Running the Receiver Check Switch Function” on page 35.](#)

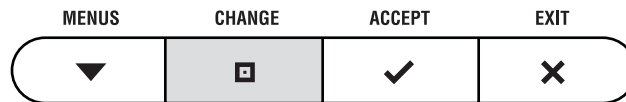
Antenna Type = MANUAL?

Now you need to select which satellites to install in the antenna. The 119 satellite is required for DISH Network service, so it is installed automatically as the first satellite.

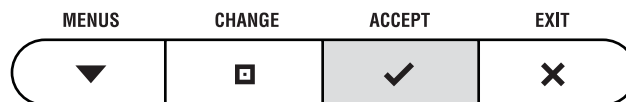
**SAT 1 OF 4= 119
(REQUIRED)**

**SAT 2 OF 4= NONE?
☐CHANGE ✓ACCEPT**

1. Press ☐CHANGE until the display shows the next satellite you want to install. You can choose 61, 110, 129, 148, or NONE.



2. Press ✓ACCEPT to install the satellite.



3. Repeat steps 1 and 2 for the remaining satellites you want to install. If you don't want to install four satellites, select NONE instead.

Once you have installed all four satellites, or you have selected NONE, the display shows the installed satellites momentarily then the antenna restarts. Wait one minute for system startup.

**INSTALLING SATS
119 110 148**

RESTARTING ANTENNA

Now you need to run the Check Switch function on your DISH Network receiver to configure the receiver for TracVision compatibility. Follow the steps in the following section.

Running the Receiver Check Switch Function

To configure your DISH Network receiver to work with the TracVision antenna, follow the steps below to run the receiver's Check Switch function.

1. Turn on the receiver and the TV. Keep the TracVision antenna turned on.
2. Using the receiver's remote control, go to the "Point Dish/Signal Strength" screen (*press Menu, 6, 1, 1 (on most models)*).
3. At the "Point Dish/Signal Strength" screen, select the 119 satellite.
4. Select the "Test" button. The receiver begins configuring itself for TracVision operation.
5. Wait until the Check Switch function is complete. It will take a couple minutes.
6. **If you set up the antenna for DISH500 antenna type, verify that the TV shows the following:**

Installed Switch: SW42				
Input:	1	1	2	2
Satellite:	119	119	110	110
Polarity:	Odd	Even	Odd	Even
Status:	Satellite reception verified			

If you set up the antenna for MANUAL antenna type, the TV shows "No Switch Detected," "Switch Type Unknown," or a similar error message. This is normal.

7. If the information is not displayed as noted in Step 6, try running the Check Switch function again.
8. When you are done, exit the menu.

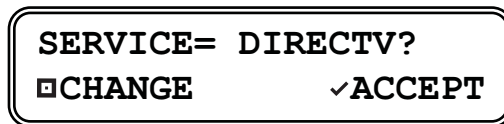
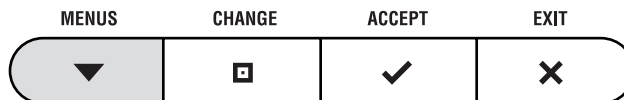
Setup – ExpressVu

Follow the steps below to set up the system for ExpressVu service.

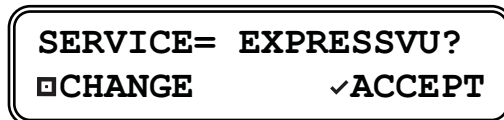
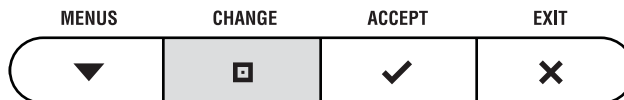
NOTE: If the status screen does not show "System Needs Setup," follow the steps in "Resetting the System to Change Setup" on page 43.



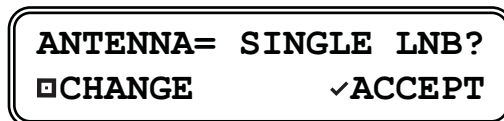
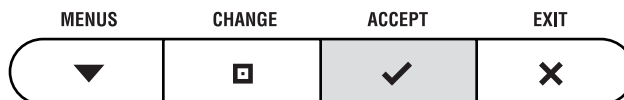
1. Press any button to begin the setup process.



2. Press CHANGE until the display shows "EXPRESSVU".



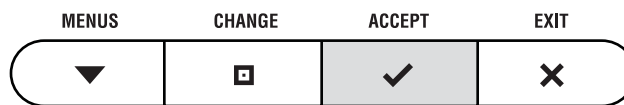
3. Press ACCEPT.



4. Press **▣**CHANGE until the display shows the desired antenna type (see the table below).

Antenna	Satellites Used	Satellite Switching
SINGLE LNB	91	None (Unnecessary)
DUAL LNB	91, 82	Automatic
MANUAL	Select up to 2	Manual

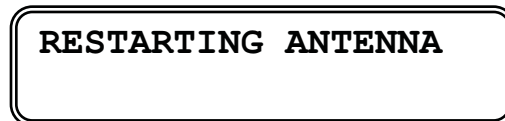
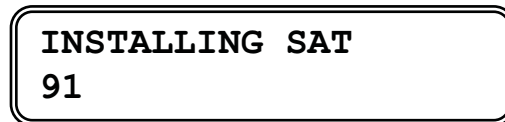
5. Press **✓**ACCEPT.



The remaining steps vary depending on the antenna type you selected. Follow the steps for your selected antenna type.

Antenna Type = SINGLE LNB?

The setup process is complete. The display shows the installed satellite (91) momentarily then the antenna restarts. Wait one minute for system startup.



Now you need to run the Check Switch function on your ExpressVu receiver to configure the receiver for TracVision compatibility. Follow the steps in [“Running the Receiver Check Switch Function” on page 39](#).

Antenna Type = DUAL LNB?

The setup process is complete. The display shows the installed satellites (91 and 82) momentarily then the antenna restarts. Wait one minute for system startup.

INSTALLING SATS

91 82

RESTARTING ANTENNA

Now you need to run the Check Switch function on your ExpressVu receiver to configure the receiver for TracVision compatibility. Follow the steps in *"Running the Receiver Check Switch Function" on page 39*.

Antenna Type = MANUAL?

Now you need to select which satellites to install in the antenna. The 91 satellite is required for ExpressVu service, so it is installed automatically as the first satellite.

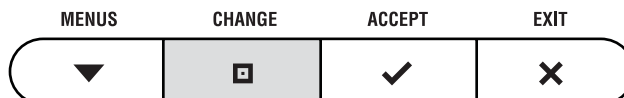
SAT 1 OF 2= 91
(REQUIRED)

SAT 2 OF 2= NONE?

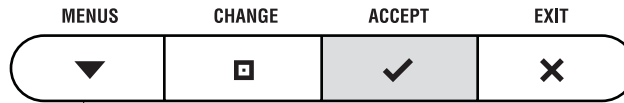
CHANGE

ACCEPT

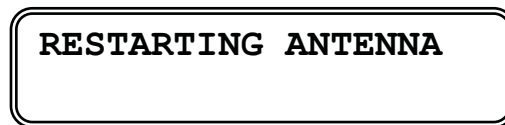
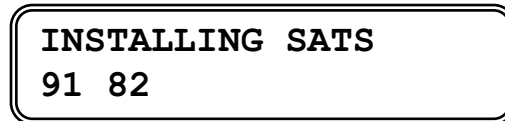
1. Press CHANGE until the display shows the next satellite you want to install. You can choose either satellite 82 or NONE.



2. Press ✓ ACCEPT to install the satellite.



The display shows the installed satellites momentarily then the antenna restarts. Wait one minute for system startup.



Now you need to run the Check Switch function on your ExpressVu receiver to configure the receiver for TracVision compatibility. Follow the steps in the following section.

Running the Receiver Check Switch Function

To configure your ExpressVu receiver to work with the TracVision antenna, follow the steps below to run the receiver's Check Switch function.

1. Turn on the receiver and the TV. Keep the TracVision antenna turned on.
2. Using the receiver's remote control, go to the "Point Dish/Signal Strength" screen (*press Menu, 6, 1, 1 (on most models)*).
3. At the "Point Dish/Signal Strength" screen, select the 91 satellite.
4. Select the "Check Switch" button.
5. At the "Attention" screen, select the "Check" button. The receiver begins configuring itself for TracVision operation.
6. Wait until the Check Switch function is complete. It will take a couple minutes.

7. If you set up the antenna for **DUAL LNB antenna type**, verify that the TV shows the following:

Installed Switch: SW42				
Input:	1	1	2	2
Satellite:	91	91	82	82
Polarity:	Odd	Even	Odd	Even
Status:	Satellite reception verified			

If you set up the antenna for **SINGLE LNB** or **MANUAL antenna type**, the TV shows "No Switch Detected," "Switch Type Unknown," or a similar error message. This is normal.

8. If the information is not displayed as noted in Step 6, try running the Check Switch function again.
9. When you are done, exit the menu.

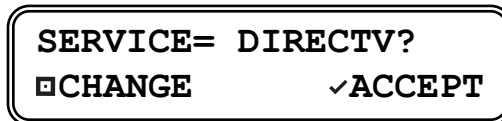
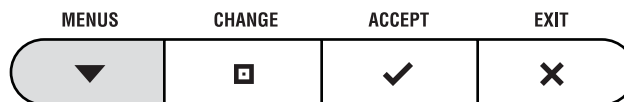
Setup – Manual Mode

Follow the steps below to set up the TracVision system to track the satellites of your choice.

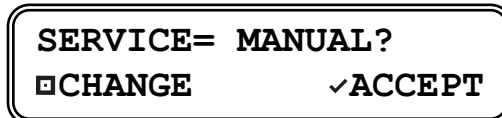
NOTE: If the status screen does not show "System Needs Setup," follow the steps in "Resetting the System to Change Setup" on page 43.



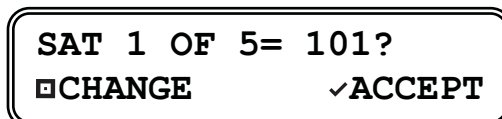
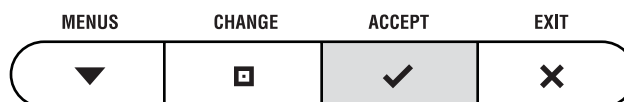
1. Press any button to begin the setup process.



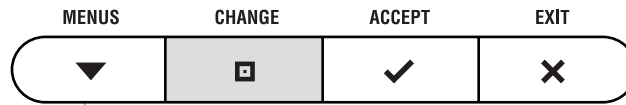
2. Press □CHANGE until the display shows "MANUAL".



3. Press ✓ACCEPT.



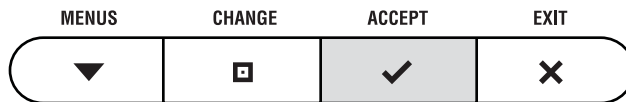
4. Press **▣**CHANGE until the display shows the first satellite you want to install.



You can choose any five of the following satellites:

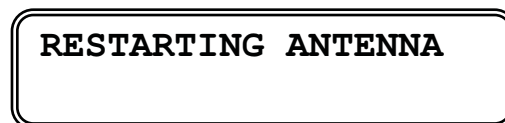
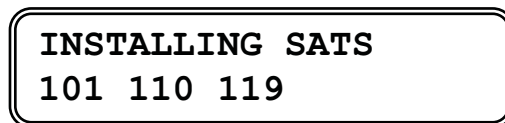
- 61
- 72
- 82
- 91
- 101
- 110
- 119
- 129
- 148

5. Press **✓**ACCEPT to install the satellite.



6. Repeat steps 4 and 5 for the remaining satellites you want to install. If you don't need to install five satellites, select NONE instead.

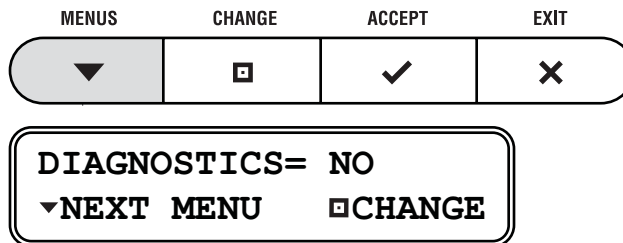
Once you have installed all five satellites, or you have selected NONE, the display shows the installed satellites momentarily then the antenna restarts. Wait one minute for system startup.



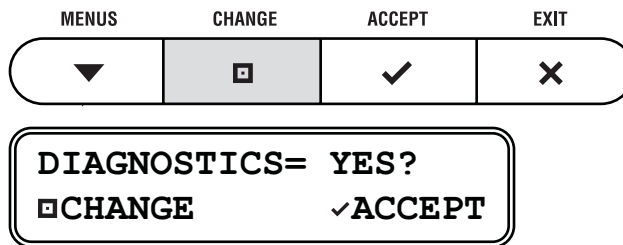
Resetting the System to Change Setup

If you need to change the antenna's setup to receive a different satellite TV service and/or track a different satellite, follow the steps below to reset the system. Once the system has reset to its factory condition, you will be able to complete an initial setup as described earlier in this chapter.

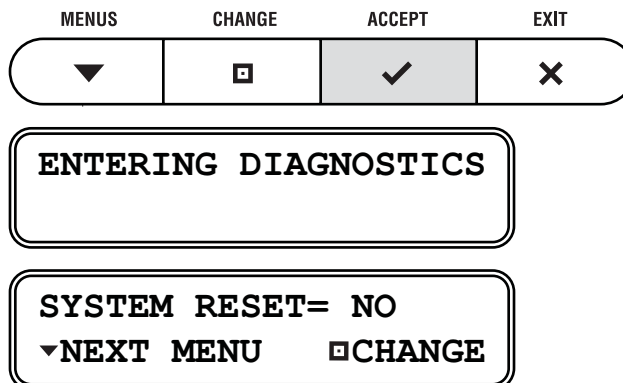
1. Press ▼MENUS until the display shows "DIAGNOSTICS."



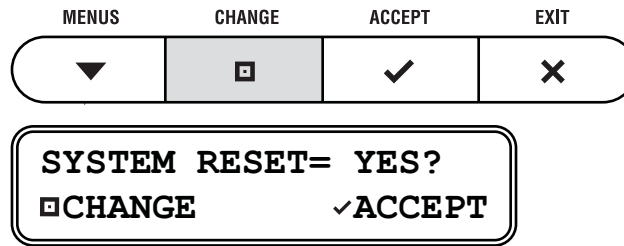
2. Press □CHANGE until the display shows "DIAGNOSTICS= YES."



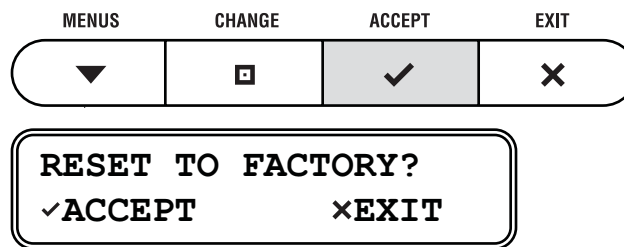
3. Press ✓ACCEPT to enter the Diagnostics menu.



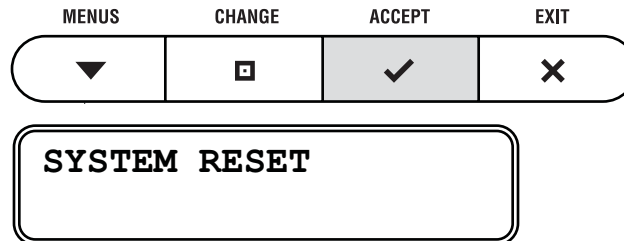
4. Press **▣**CHANGE until the display shows "SYSTEM RESET= YES."



5. Press **✓**ACCEPT.



6. Press **✓**ACCEPT again to reset the system. Wait one minute for system startup.



7. When the display shows the status screen, set up the system for the desired service. See the previous sections of this chapter for details.





5. Troubleshooting

This chapter identifies basic problems along with their possible causes and solutions. It also explains what the status lights indicate, how to use the diagnostic functions, and how to get technical support.

Contents

Five Simple Checks	47
System Status Lights.....	48
Running the Diagnostics Test.....	50
Viewing System Information.....	53
Changing the Satellite Switching Mode.....	56
Calibrating the Gyros	58
Changing Tracking Parameters	61
Technical Support.....	65
Product Care.....	66





Five Simple Checks

If you are experiencing a problem receiving satellite TV with your TracVision system, first check the five simple things below. If none of these are the problem, check the status lights on the interface box and/or perform a diagnostics test, as explained later in this chapter.

TIP: You can also try resetting the satellite TV receiver. Turn off and unplug the receiver, wait one minute, then plug it back in and turn it back on.

Can the antenna see the satellite?

The antenna requires an unobstructed view of the sky to receive satellite TV signals. Common causes of blockage include trees, buildings, bridges, and mountains.

Is there excessive dirt or moisture on the antenna dome?

Dirt buildup or moisture on the dome can reduce satellite reception. Clean the exterior of the dome periodically. If the antenna is a TracVision R6, keep DewShield set to AUTO to ensure optimum reception (see ["Turning DewShield On/Off" on page 19](#)).

Is it raining heavily?

Heavy rain or snow can weaken satellite TV signals. Reception should improve once the inclement weather subsides.

(DIRECTV only) Does the TV display a "Please call ext. 722" message?

If you can only access the DIRECTV preview channels, such as channel 100, while all other channels show a message to call Ext. 722, the receiver may have lost its activation data. To fix this problem, call DIRECTV customer service at 1-800-DIRECTV (347-3288). Be sure the antenna is tracking the satellite when you call.

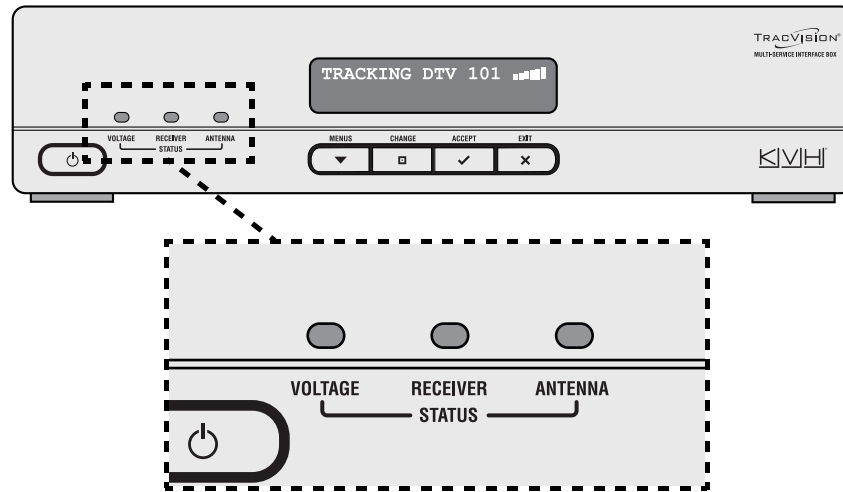
Is everything turned on and connected properly?

Make sure the power switch on the front of the interface box is turned on (the VOLTAGE light on the front of the interface box should be lit green). Also make sure your TV and receiver are both turned on and set up for the satellite input. Finally, check the cables connecting all of these components to ensure none have come loose.

System Status Lights

Three status lights on the front of the receiver indicate the current status of the system and can help you identify problems.

Figure 5-1 System Status Lights



During normal operation, all three status lights should be lit green. The following tables explain what the different light conditions indicate.

VOLTAGE Light

The table below explains what the VOLTAGE light indicates.

Light is...	Indicates	Description
Off	Off	Interface box is off (power switch is off) or no power input
Green	OK	Good power (10-16 VDC at interface box)
Green, flashing	Cable open	Open detected in antenna cable (check the antenna coax connection)
Orange	Low power	Low power (9-10 VDC) at interface box
Red, flashing	Bad power	Insufficient power (less than 9 VDC or more than 16 VDC input)

RECEIVER Light

The table below explains what the RECEIVER light indicates.

Light is...	Indicates	Description
Green	OK	Good communications with receiver
Orange	No comm	No communications with receiver; receiver is off or disconnected
Orange, flashing	Overload	Overload or short circuit detected on the antenna cable
Red	Fault	Internal power fault

ANTENNA Light

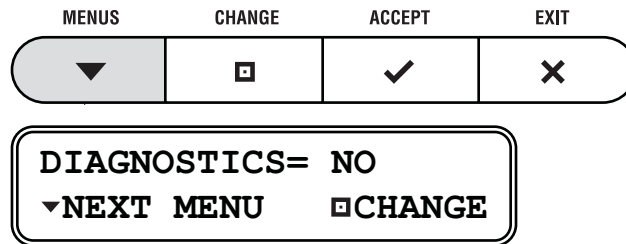
The table below explains what the ANTENNA light indicates.

Light is...	Indicates	Description
Off	Off	Antenna is off, disconnected, or has insufficient power
Green	Tracking	Antenna is tracking the selected satellite
Green, flashing	Searching	Antenna is searching for a satellite
Orange, flashing	Overload	Overload or short circuit detected on the antenna cable
Red	No comm	No communications with antenna
Red, flashing	Fault	Error detected in antenna

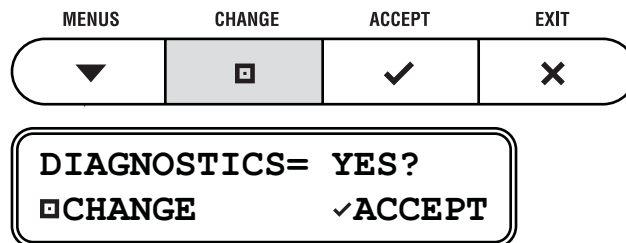
Running the Diagnostics Test

In addition to the front panel status lights, the interface box includes a self-test function within its Diagnostics menu. Follow the steps below to run this test.

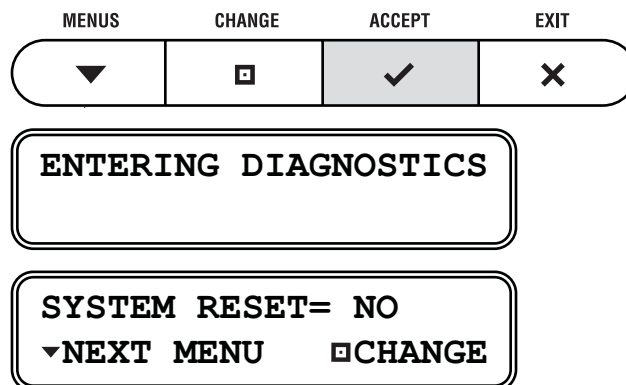
1. Press ▼MENUS until the display shows "DIAGNOSTICS."



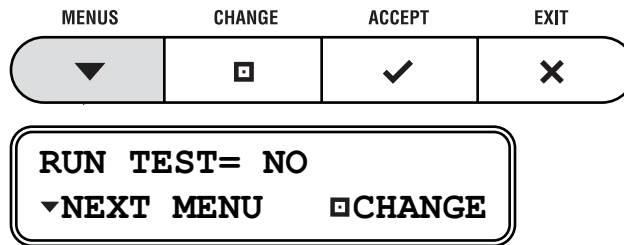
2. Press ▣CHANGE until the display shows "DIAGNOSTICS= YES."



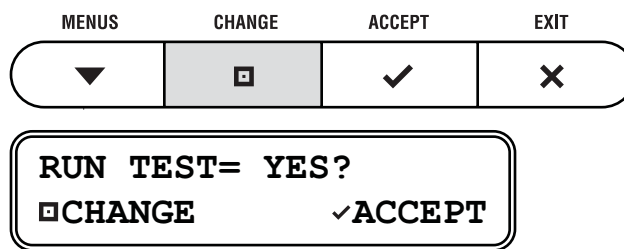
3. Press ✓ACCEPT to enter the Diagnostics menu.



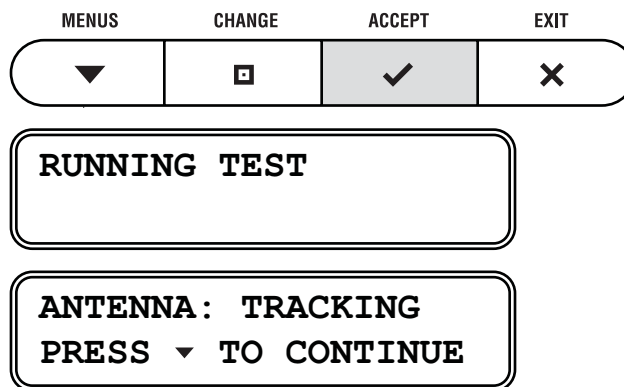
4. Press ▼MENUS until the display shows "RUN TEST."



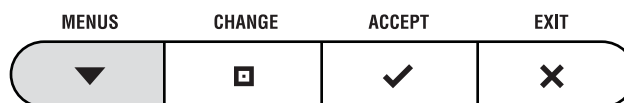
5. Press □CHANGE until the display shows "RUN TEST= YES."



6. Press ✓ACCEPT to begin the test.



7. Once the test is complete, the display shows the antenna status. Press ▼MENUS to scroll through the remaining status messages.



Diagnostics Test Results

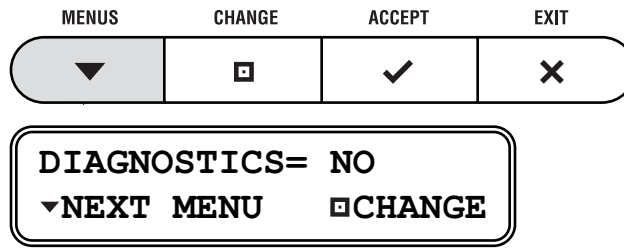
The table below lists all of the status messages.

Status Message	Description
<p>ANTENNA: TRACKING PRESS ▼ TO CONTINUE</p>	Antenna status: Idle, Initializing, Searching, Tracking, or Error
<p>SATELLITE: 119 PRESS ▼ TO CONTINUE</p>	Name of the currently selected satellite
<p>BIT ERROR: OK, 928 PRESS ▼ TO CONTINUE</p>	Bit error rate: OK: Less than 2001 High: Between 2001-8000 Bad: Greater than 8000
<p>AGC LEVEL: OK, 22500 PRESS ▼ TO CONTINUE</p>	Automatic gain control level: OK: Between 20000-25000 Bad: Less than 20000; greater than 25000
<p>SAT 1: 101 PRESS ▼ TO CONTINUE</p>	List of installed satellites Press ▼MENUS to scroll through the list
<p>LAT/LONG: 41N, 071W PRESS ▼ TO CONTINUE</p>	TracVision M3: Last lat/long that you entered into the antenna TracVision R6: Actual GPS position data, or acquiring
<p>CABLE STATE: OK PRESS ▼ TO CONTINUE</p>	Antenna cable status: OK, Open, or Shorted
<p>SYSTEM DC: OK, 12.3 PRESS ▼ TO CONTINUE</p>	Input voltage (DC power): OK: 10-16 VDC Low: 9-10 VDC Bad: Less than 9 VDC or more than 16 VDC
<p>ANTENNA DC: OK, 41.0 PRESS ▼ TO CONTINUE</p>	Antenna voltage (DC power) OK: 39-42 VDC Low: 37-39 VDC Bad: Less than 37 VDC

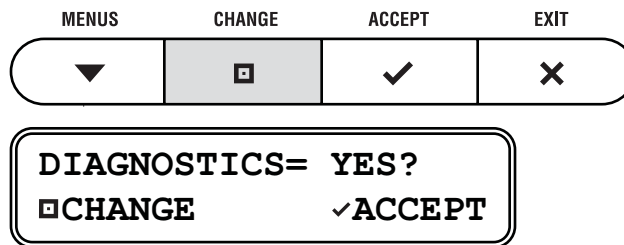
Viewing System Information

You can view the TracVision system's software versions and serial numbers on the interface box display. Follow the steps below to display the system information.

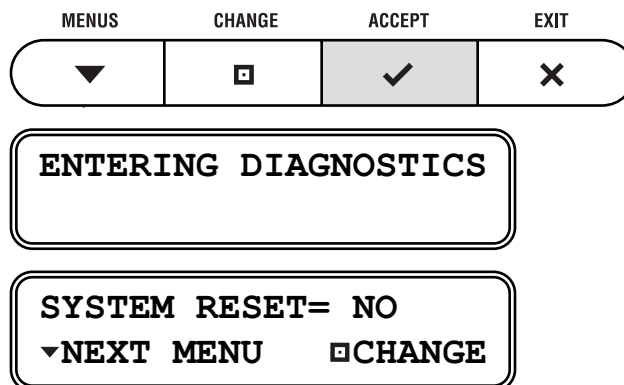
1. Press ▼MENUS until the display shows "DIAGNOSTICS."



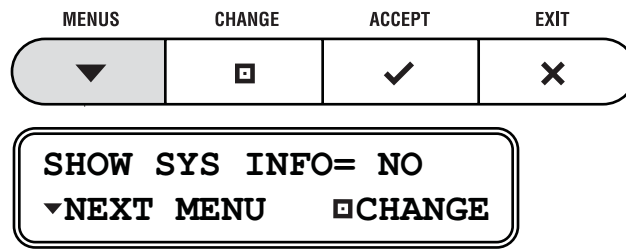
2. Press □CHANGE until the display shows "DIAGNOSTICS= YES."



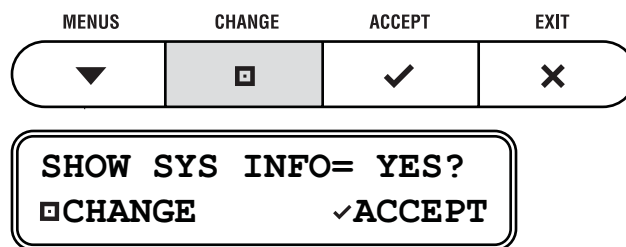
3. Press ✓ACCEPT to enter the Diagnostics menu.



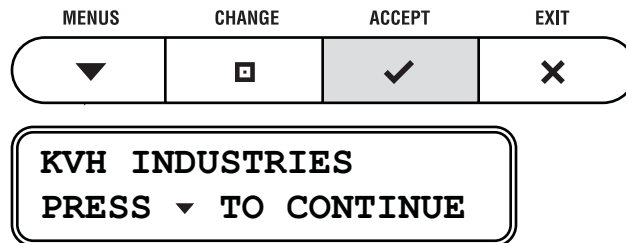
4. Press ▼MENUS until the display shows "SHOW SYS INFO."



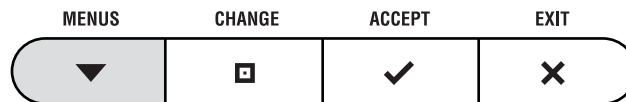
5. Press □CHANGE until the display shows "SHOW SYS INFO= YES."



6. Press ✓ACCEPT to begin viewing the system information.



7. Press ▼MENUS to scroll through the list.



System Information

The table below lists all of the system information reported by the interface box.

Information Message	Description
<div style="border: 1px solid black; border-radius: 10px; padding: 5px; width: fit-content;"> TRACVISION M3 PRESS ▼ TO CONTINUE </div>	Model of TracVision antenna
<div style="border: 1px solid black; border-radius: 10px; padding: 5px; width: fit-content;"> SYS SW: 1.2 PRESS ▼ TO CONTINUE </div>	Version of antenna main software
<div style="border: 1px solid black; border-radius: 10px; padding: 5px; width: fit-content;"> RF SW: 1.3 PRESS ▼ TO CONTINUE </div>	Version of antenna RF software
<div style="border: 1px solid black; border-radius: 10px; padding: 5px; width: fit-content;"> MOTOR SW: 1.4 PRESS ▼ TO CONTINUE </div>	Version of antenna motor controller software
<div style="border: 1px solid black; border-radius: 10px; padding: 5px; width: fit-content;"> JBOX SW: 1.5 PRESS ▼ TO CONTINUE </div>	Version of interface box software
<div style="border: 1px solid black; border-radius: 10px; padding: 5px; width: fit-content;"> ANT.SER.# 061201234 PRESS ▼ TO CONTINUE </div>	Serial number of antenna
<div style="border: 1px solid black; border-radius: 10px; padding: 5px; width: fit-content;"> JBOX SER.# 061205678 PRESS ▼ TO CONTINUE </div>	Serial number of interface box

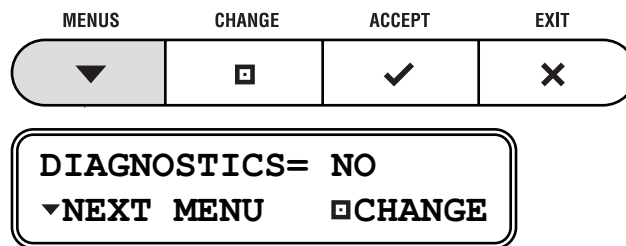
NOTE: The first 4 digits of the serial number indicate the year and month (YYMM) the product was manufactured. For example, if the antenna has a serial number of 061201234, it was built in December 2006.

Changing the Satellite Switching Mode

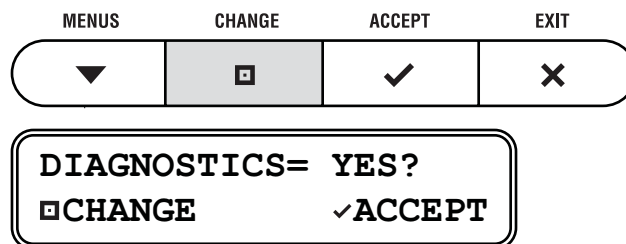
If your TracVision system is set up for automatic satellite switching, the antenna automatically switches satellites as you change channels using the receiver's remote control. However, if you want to manually select a satellite instead, the interface box allows you to switch from automatic to manual switching (you can also switch back to automatic switching using this same menu function).

Follow the steps below to change the satellite switching mode.

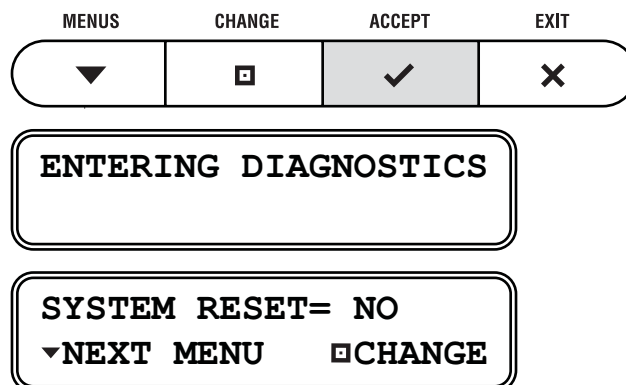
1. Press **▼**MENUS until the display shows "DIAGNOSTICS=."



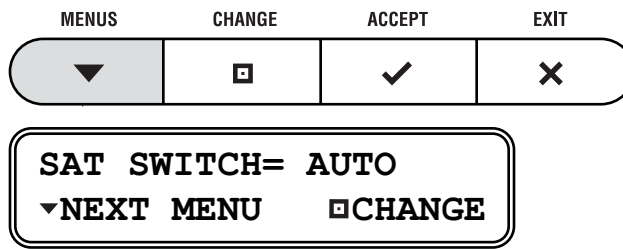
2. Press **□**CHANGE until the display shows "DIAGNOSTICS= YES."



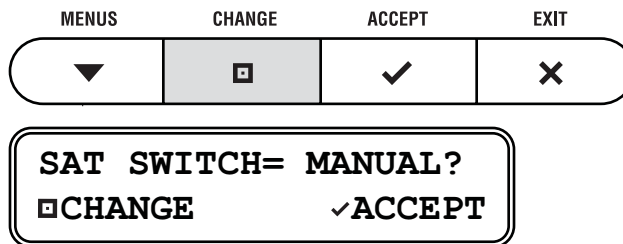
3. Press **✓**ACCEPT to enter the Diagnostics menu.



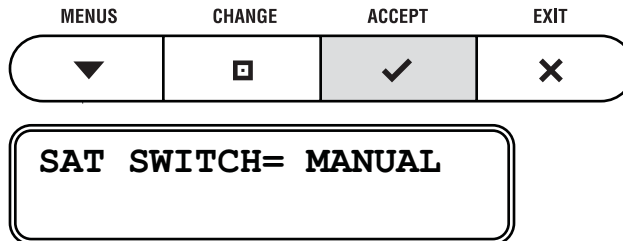
4. Press ▼MENUS until the display shows "SAT SWITCH."



5. Press □CHANGE until the display shows the desired satellite switching mode: **AUTO** or **MANUAL**.



6. Press ✓ACCEPT.



Calibrating the Gyros

IMPORTANT!

This section applies to **TracVision M3 only**. However, a KVH-authorized technician can calibrate the gyros in other antenna models. Please see your local KVH dealer for details.

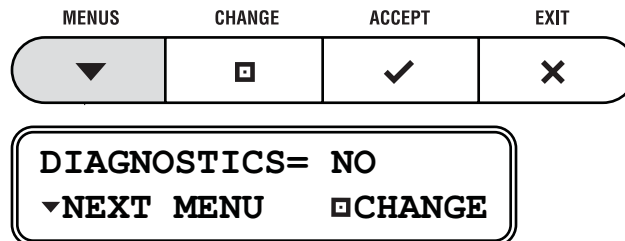
The TracVision antenna's gyros continuously measure the motion of your vessel and send this data to the antenna's motor control circuitry to keep the antenna pointed at the satellite. At the factory, each antenna gyro is precisely calibrated to work with the antenna's circuit board. Therefore, if you ever replace a gyro or circuit board in your antenna, you will need to recalibrate the gyros for the new part.

IMPORTANT!

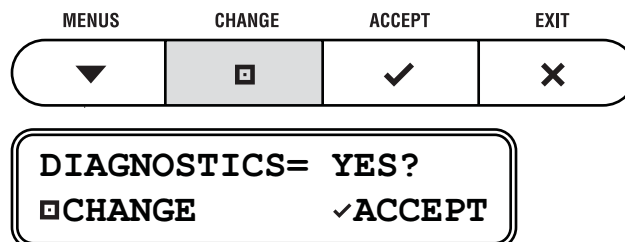
Calibrate the gyros only if directed by KVH Technical Support, and only while the vessel is stationary. A poor gyro calibration can reduce the performance of the antenna.

Follow the steps below to calibrate the gyros.

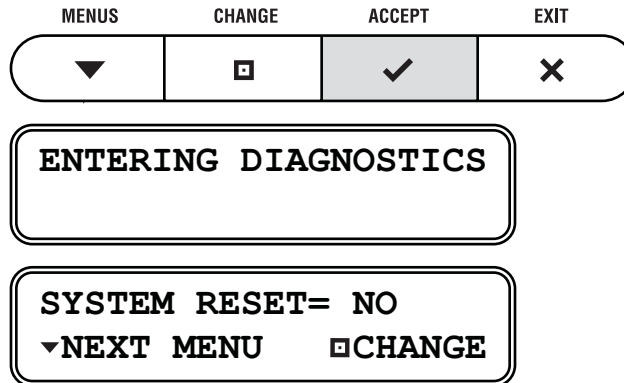
1. Press ▼MENUS until the display shows "DIAGNOSTICS."



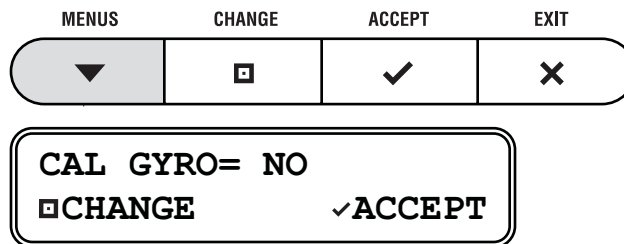
2. Press □CHANGE until the display shows "DIAGNOSTICS= YES."



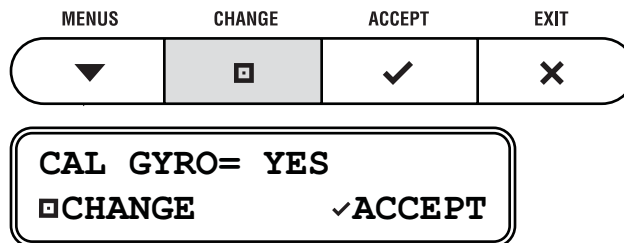
3. Press ✓ACCEPT to enter the Diagnostics menu.



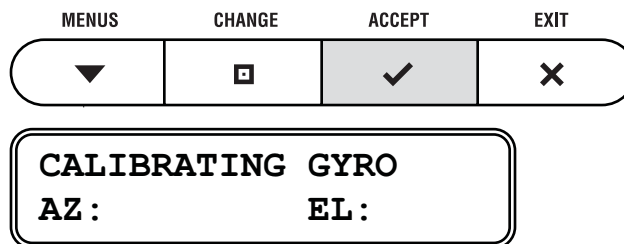
4. Press ▼MENUS until the display shows "CAL GYRO."



5. Press □CHANGE until the display shows "CAL GYRO= YES."



6. Press ✓ACCEPT to start gyro calibration.



7. Verify that the azimuth (AZ) and elevation (EL) gyros both pass. If either gyro does not pass, retry the calibration. If it continues to fail, please seek technical support (see *"Technical Support" on page 65*).

CALIBRATION COMPLETE
AZ: PASS EL: PASS

8. Once the gyros are calibrated, the antenna restarts. Wait one minute for system startup.

Changing Tracking Parameters

IMPORTANT!

This section applies to **TracVision M3 only**. However, a KVH-authorized technician can change the tracking parameters in other antenna models. Please see your local KVH dealer for details.

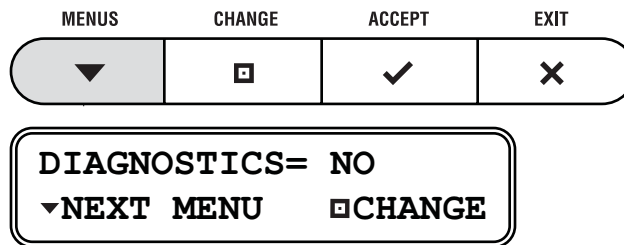
On rare occasions, a satellite service provider may change the configuration of one of its satellites. Since your TracVision antenna identifies a satellite based on the configuration data it has stored in memory, the antenna will no longer be able to track the satellite if its configuration changes. For this reason, the interface box allows you to change any satellite parameter stored in the antenna's memory.

IMPORTANT!

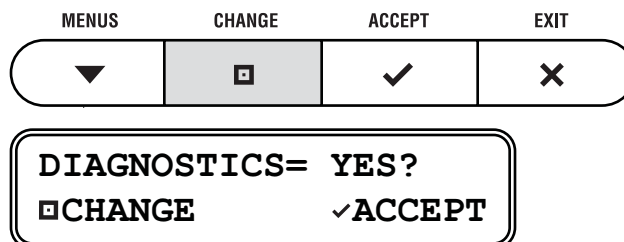
Change tracking parameters only if directed by KVH Technical Support. An incorrect tracking parameter can significantly reduce the performance of the antenna.

Follow the steps below to change a tracking parameter for an installed satellite.

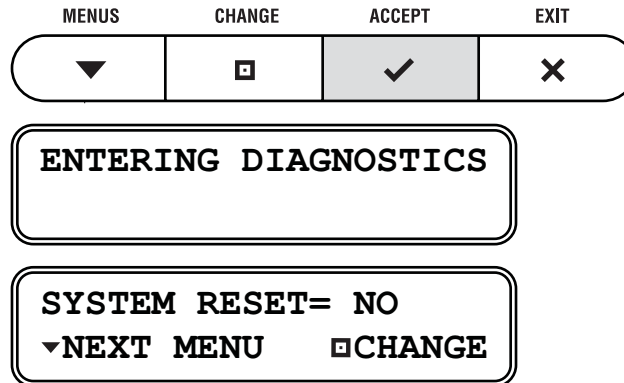
1. Press ▼MENUS until the display shows "DIAGNOSTICS."



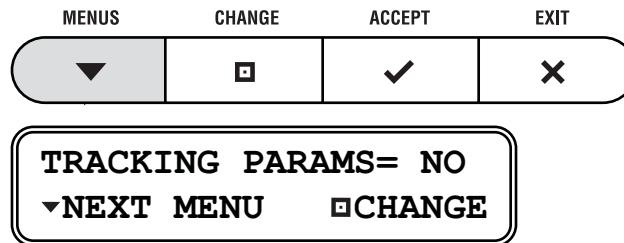
2. Press ▣CHANGE until the display shows "DIAGNOSTICS= YES."



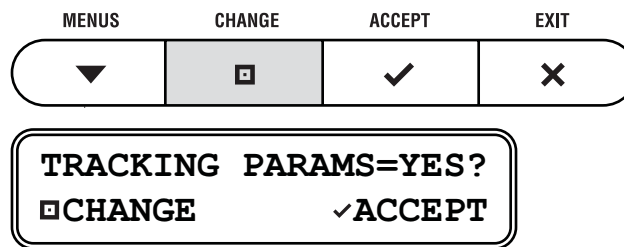
3. Press ACCEPT to enter the Diagnostics menu.



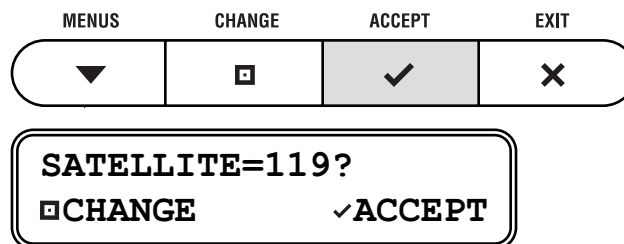
4. Press MENUS until the display shows "TRACKING PARAMS."



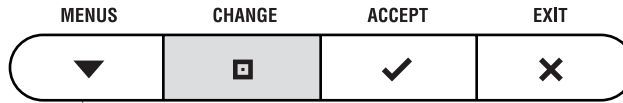
5. Press CHANGE until the display shows "TRACKING PARAMS= YES."



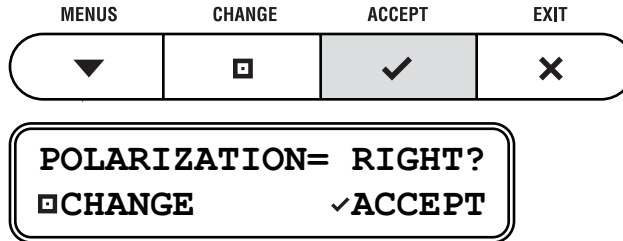
6. Press ACCEPT.



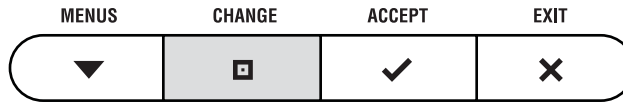
7. Press CHANGE until the display shows the satellite you need to modify.



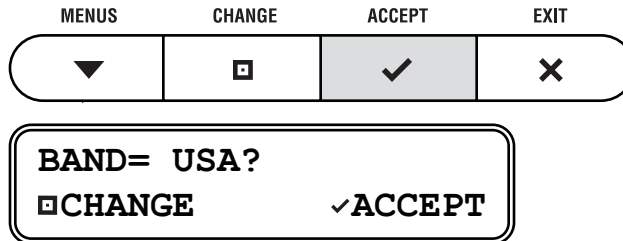
8. Press ACCEPT.



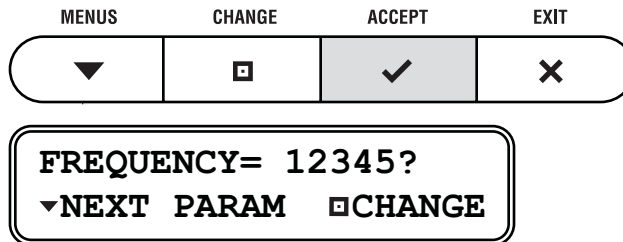
9. Press CHANGE until the display shows the polarization you need to modify (**RIGHT**-hand circular or **LEFT**-hand circular).



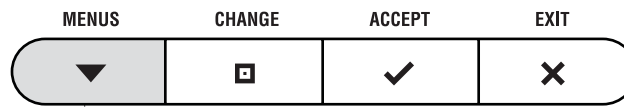
10. Press ACCEPT.



11. Only "USA" is available as an option. Press ACCEPT.

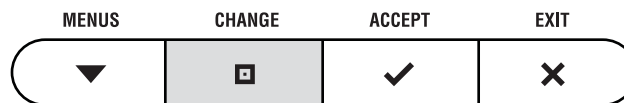


12. Press ▼MENUS until the display shows the parameter you want to change. See the table below.



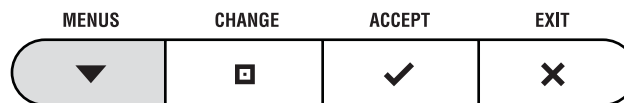
Parameter	Possible Settings
FREQUENCY= 12345? ▼NEXT PARAM □CHANGE	10700-12700 MHz
SYMBOL RATE= 12345? ▼NEXT PARAM □CHANGE	10000-45000 kilosymbols per second
FEC CODE= 5/6? ▼NEXT PARAM □CHANGE	1/2, 2/3, 3/4, 5/6, 6/7, or 7/8
NETWORK ID= 0x1234? ▼NEXT PARAM □CHANGE	0x0000-0xffff (hexadecimal)

13. When the display shows the desired parameter, press □CHANGE.



14. Using the □CHANGE and ✓ACCEPT buttons, change the parameter to the new setting.

15. Press ▼MENUS until the display shows "DONE?"



16. Press ✓ACCEPT to save your changes, or press ▼MENUS to repeat steps 12-15 (to correct a mistake).



Technical Support

The TracVision antenna is a sophisticated electronic device; only KVH-authorized technicians have the specialist tools and expertise necessary to diagnose and repair a system fault. Therefore, if you experience an operating problem or require technical assistance, please call or visit your local authorized TracVision dealer or distributor. You can find an authorized technician near you by visiting our website at www.kvh.com/wheretogetservice.

If you need help finding an authorized technician, please contact KVH Technical Support:

North/South America, Australia:

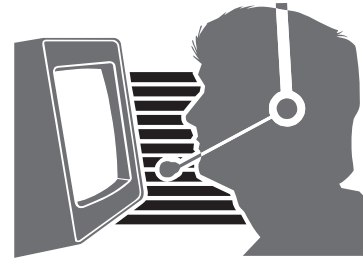
Phone: +1 401 847-3327

E-mail: techs@kvh.com

Europe, Middle East, Asia:

Phone: +45 45 160 180

E-mail: support@kvh.dk



Please have your antenna and interface box serial numbers handy before you call. You can get these serial numbers from the interface box; see *“Viewing System Information” on page 53*.

Product Registration

Be sure to register your system with KVH. The registration process is quick, easy, online, and ensures the best possible service from KVH. Visit www.kvh.com/register or refer to the Product Registration Form.

When you register, you'll enjoy a wide range of benefits, including:

- Free e-mail notification of enhancements and software updates to improve the performance of your system
- Fast, convenient customer and technical support
- Alerts about changes and improvements to services and programming
- Product news and special offers
- Complete privacy - KVH will never sell or share your data with other companies or organizations

Product Care

Please consider the following antenna care guidelines to maintain peak performance.

- Periodically wash the exterior of the antenna dome with fresh water and mild detergent. Avoid harsh cleansers and volatile solvents (such as acetone) and do not spray the dome directly with high-pressure water.
- If you wish to paint the dome, use only non-metallic automotive paint without a primer coat. Any paint that contains metal will block satellite signals and impair reception.
- (TracVision R6 only) Consider the antenna's height before driving under low-clearance structures.



Appendix A Wiring Diagrams

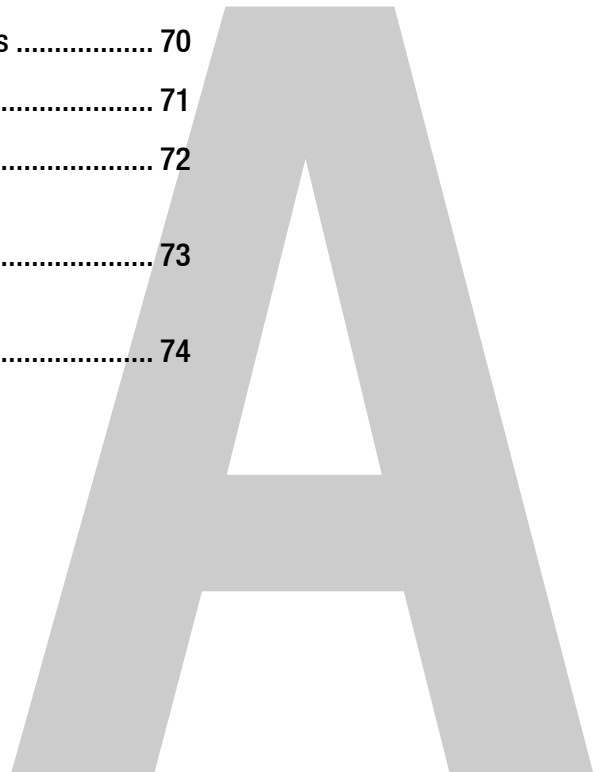
This appendix provides receiver wiring diagrams for basic configurations. For installation instructions, refer to the Installation Guide.

IMPORTANT!

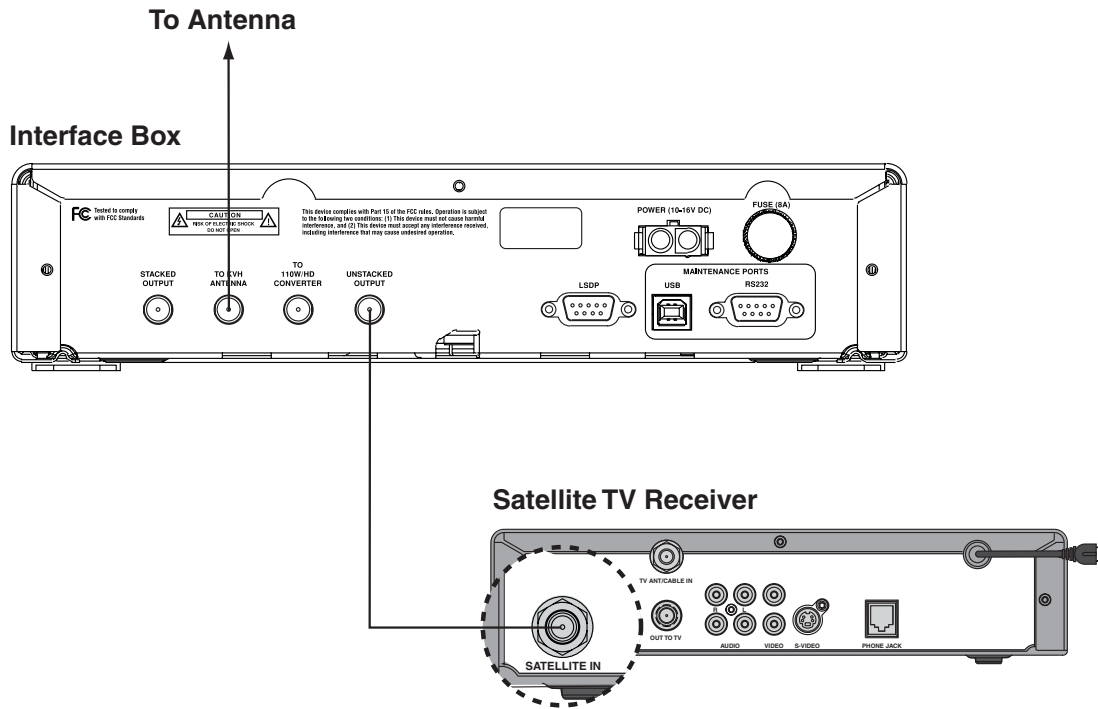
If you have a special circular/linear conversion system (01-0279-05), refer to the special wiring information provided in the separate instructions that came with your system. The wiring diagrams provided in this appendix are not valid for a conversion system; a destacker is required for connecting a receiver to either output of the interface box.

Contents

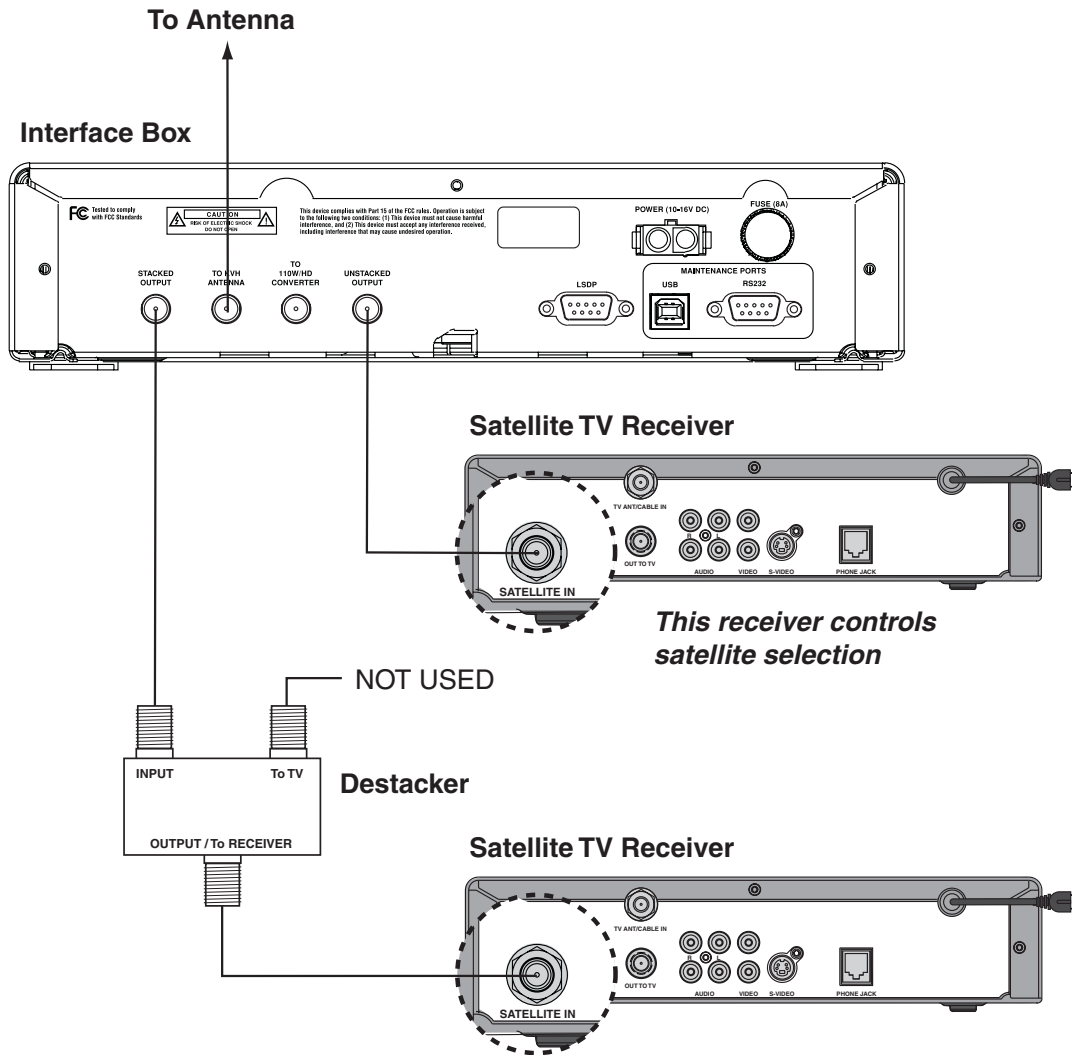
Wiring Diagram for One Standard Receiver.....	69
Wiring Diagram for Two Standard Receivers	70
Wiring Three Standard Receivers.....	71
Wiring One DIRECTV HD Receiver	72
Wiring One Standard Receiver and One DIRECTV HD Receiver	73
Wiring One Standard Receiver and One Digital Video Recorder (DVR).....	74



Wiring Diagram for One Standard Receiver



Wiring Diagram for Two Standard Receivers



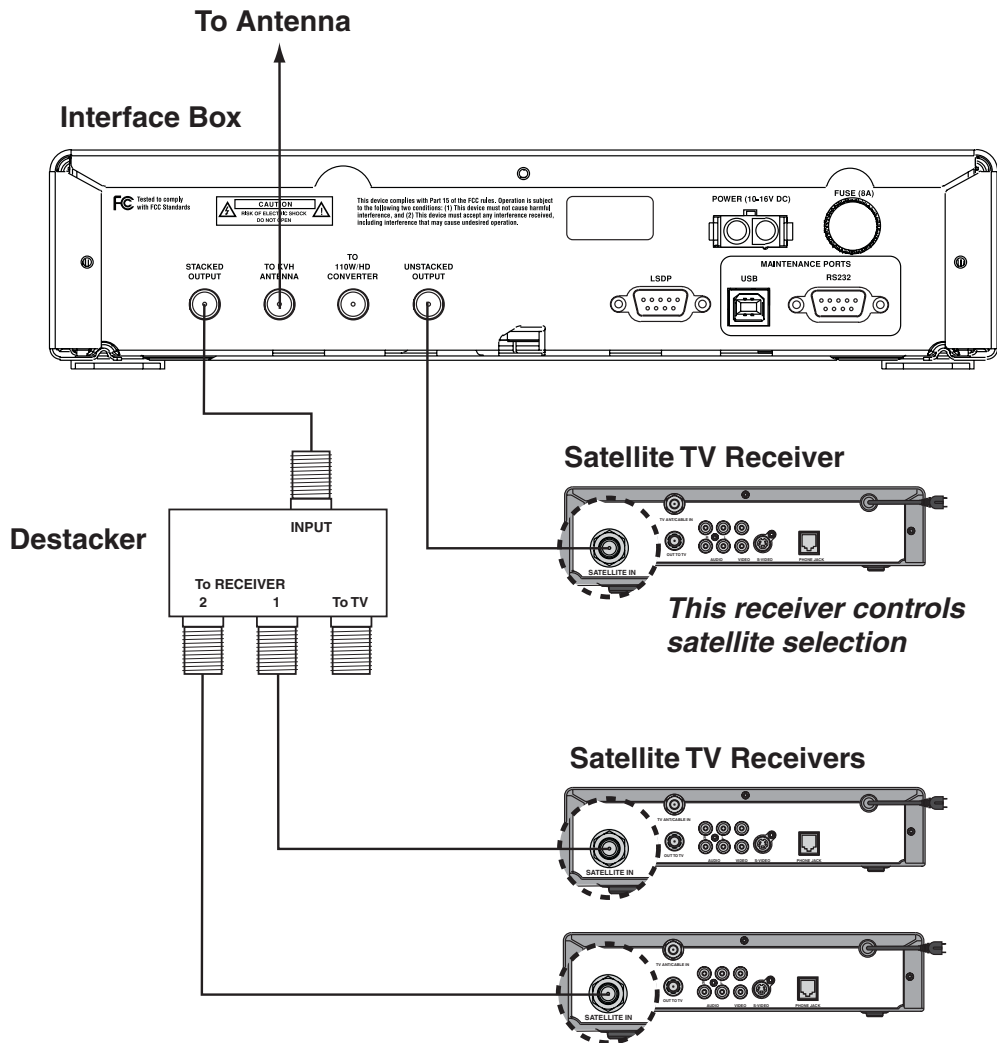
Destacker (Single-Output) Required

The single-output destacker (KVH P/N 19-0347) converts a stacked signal into an unstacked signal, which standard satellite TV receivers are configured to decode. The interface box has two satellite TV outputs: “Unstacked” and “Stacked.” You will need to install the destacker between the “Stacked” output and your second receiver.

Primary Receiver Controls Satellite Selection

The receiver that you connect to the “Unstacked” output is the primary receiver. If the system is set up for automatic switching, the primary receiver controls satellite selection.

Wiring Three Standard Receivers



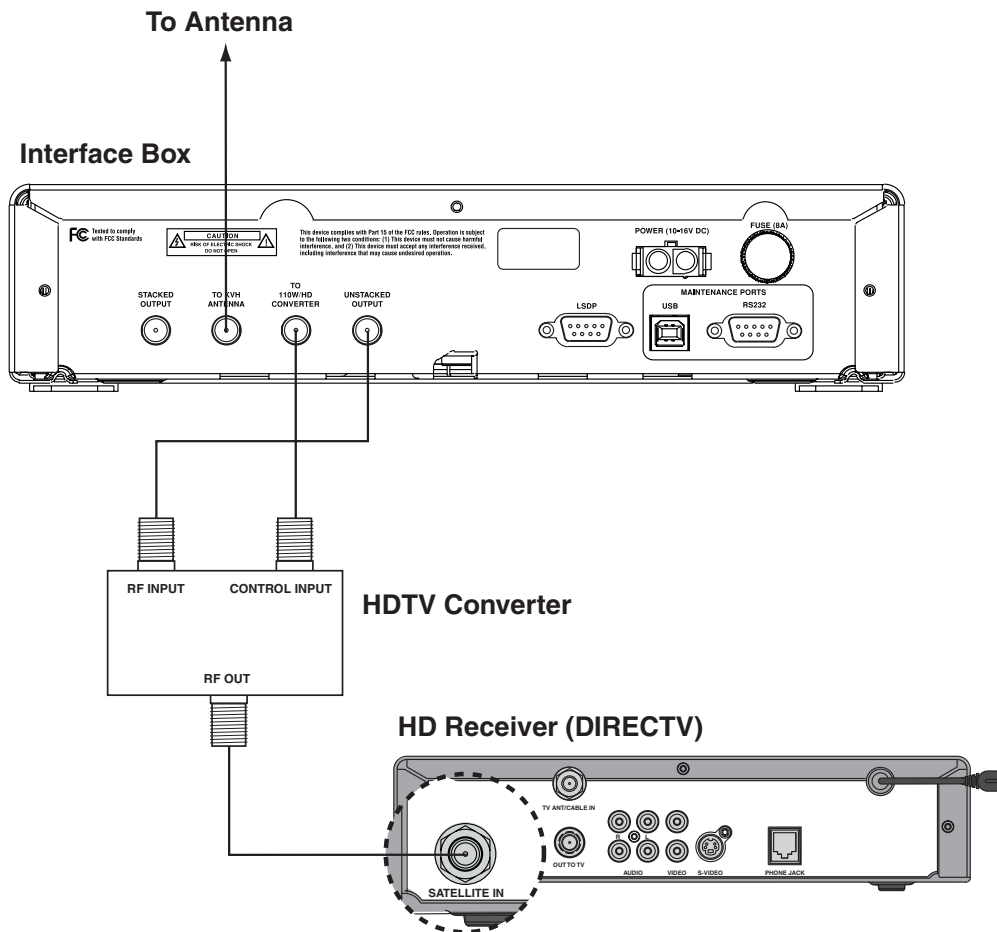
Destacker (Dual-Output) Required

The dual-output destacker (KVH P/N 19-0410) converts a stacked signal into two unstacked signals, which standard satellite TV receivers are configured to decode. The interface box has two satellite TV outputs: “Unstacked” and “Stacked.” You will need to install the destacker between the “Stacked” output and your second and third receivers.

Primary Receiver Controls Satellite Selection

The receiver that you connect to the “Unstacked” output is the primary receiver. If the system is set up for automatic switching, the primary receiver controls satellite selection.

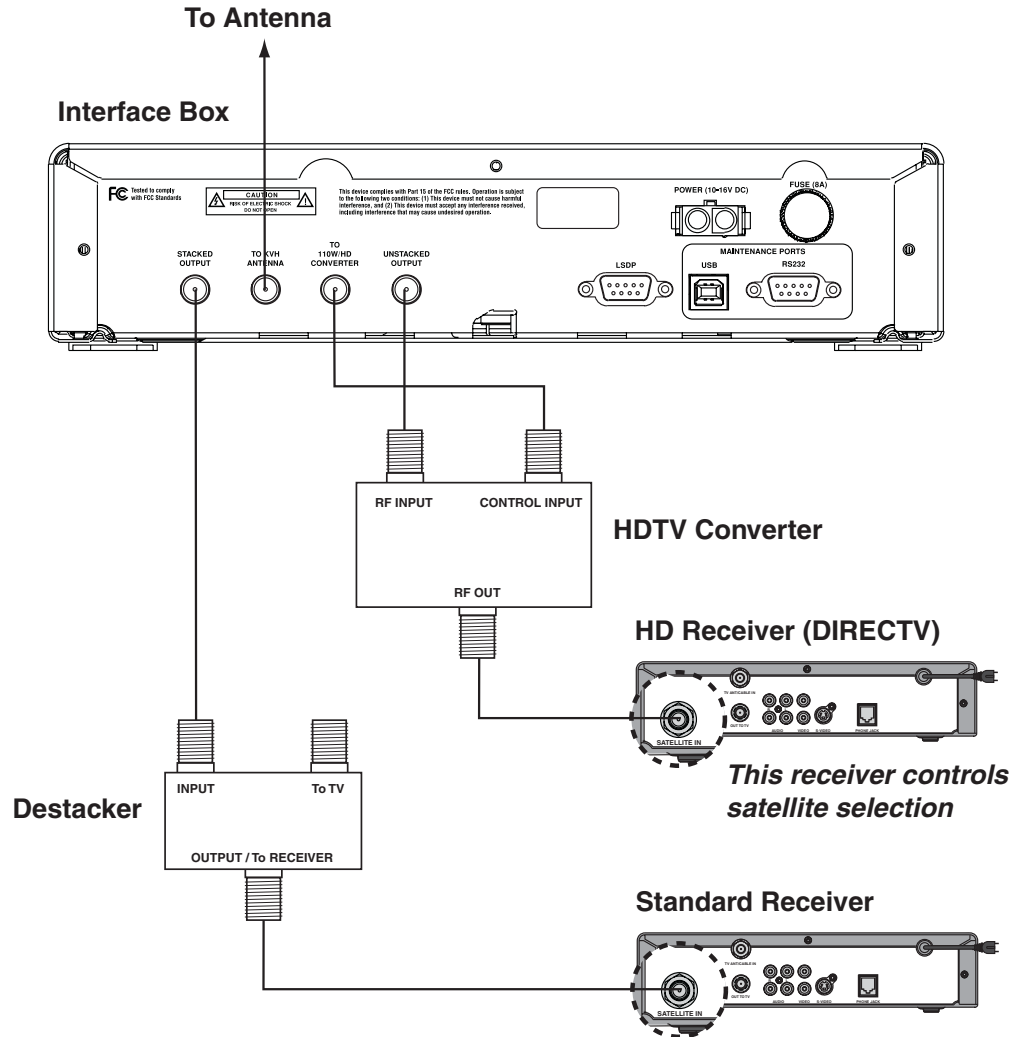
Wiring One DIRECTV HD Receiver



HDTV Converter Required

The HDTV converter (KVH P/N 02-1431) adjusts the signal frequency of the DIRECTV 110 satellite, allowing you to receive its high-definition channels. Be sure to connect the HDTV converter's "RF Input" to the "Unstacked" output.

Wiring One Standard Receiver and One DIRECTV HD Receiver



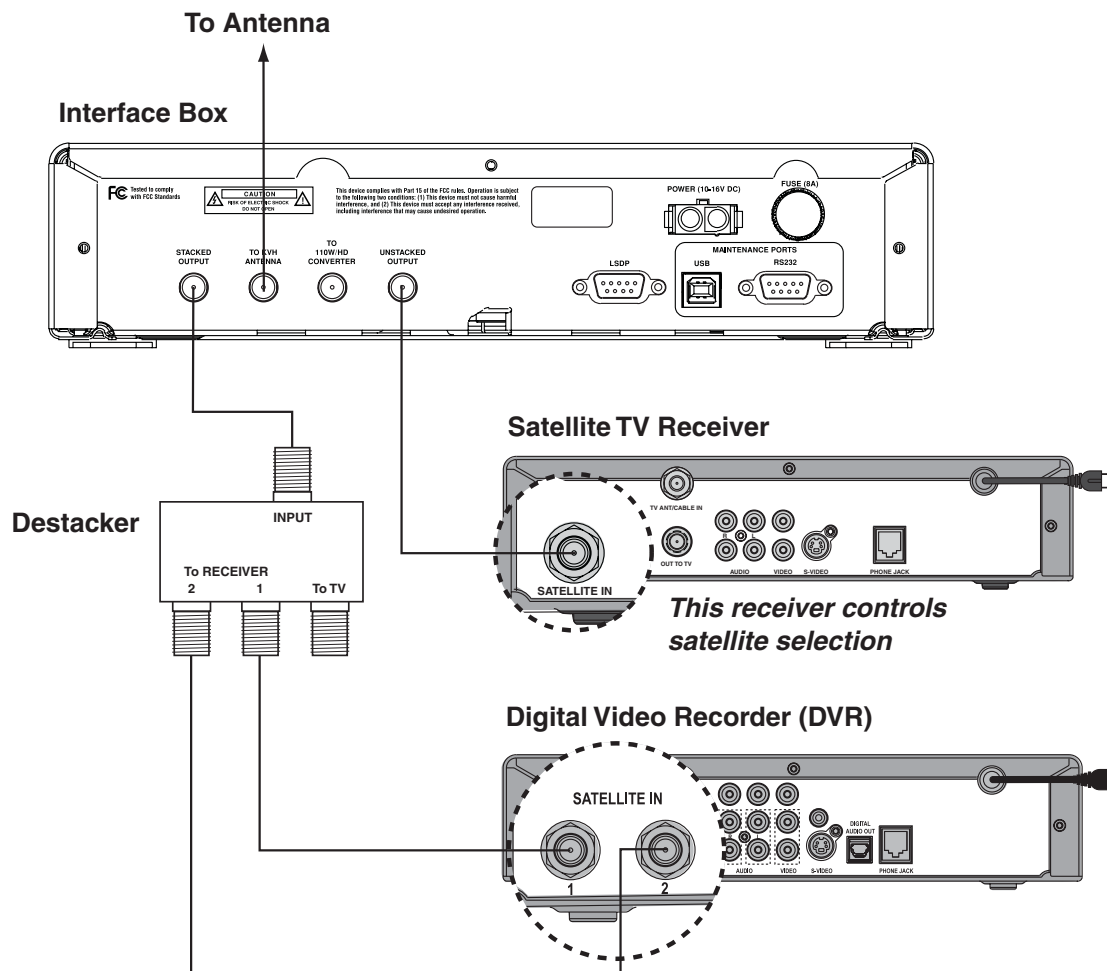
HDTV Converter Required

The HDTV converter (KVH P/N 02-1431) adjusts the signal frequency of the DIRECTV 110 satellite, allowing you to receive its high-definition channels.

Destacker (Single-Output) Required

The single-output destacker (KVH P/N 19-0347) converts a stacked signal into an unstacked signal, which standard satellite TV receivers are configured to decode. Install the destacker between the “Stacked” output and your standard receiver.

Wiring One Standard Receiver and One Digital Video Recorder (DVR)



Destacker (Dual-Output) Required

The dual-output destacker (KVH P/N 19-0410) converts a stacked signal into two unstacked signals. Two outputs are required because DVRs have two unstacked inputs, whereas standard receivers have only one input.

Recording Limitation

The DVR can record any channel carried on the satellite that is currently selected by the primary receiver. (The primary receiver is connected to the "Unstacked Output.") To record a channel on a different satellite, you need to select that satellite on the primary receiver as well. You don't have to select the same channel; just make sure that channel is carried on the same satellite.



Appendix B

Menus Quick Reference

Guide

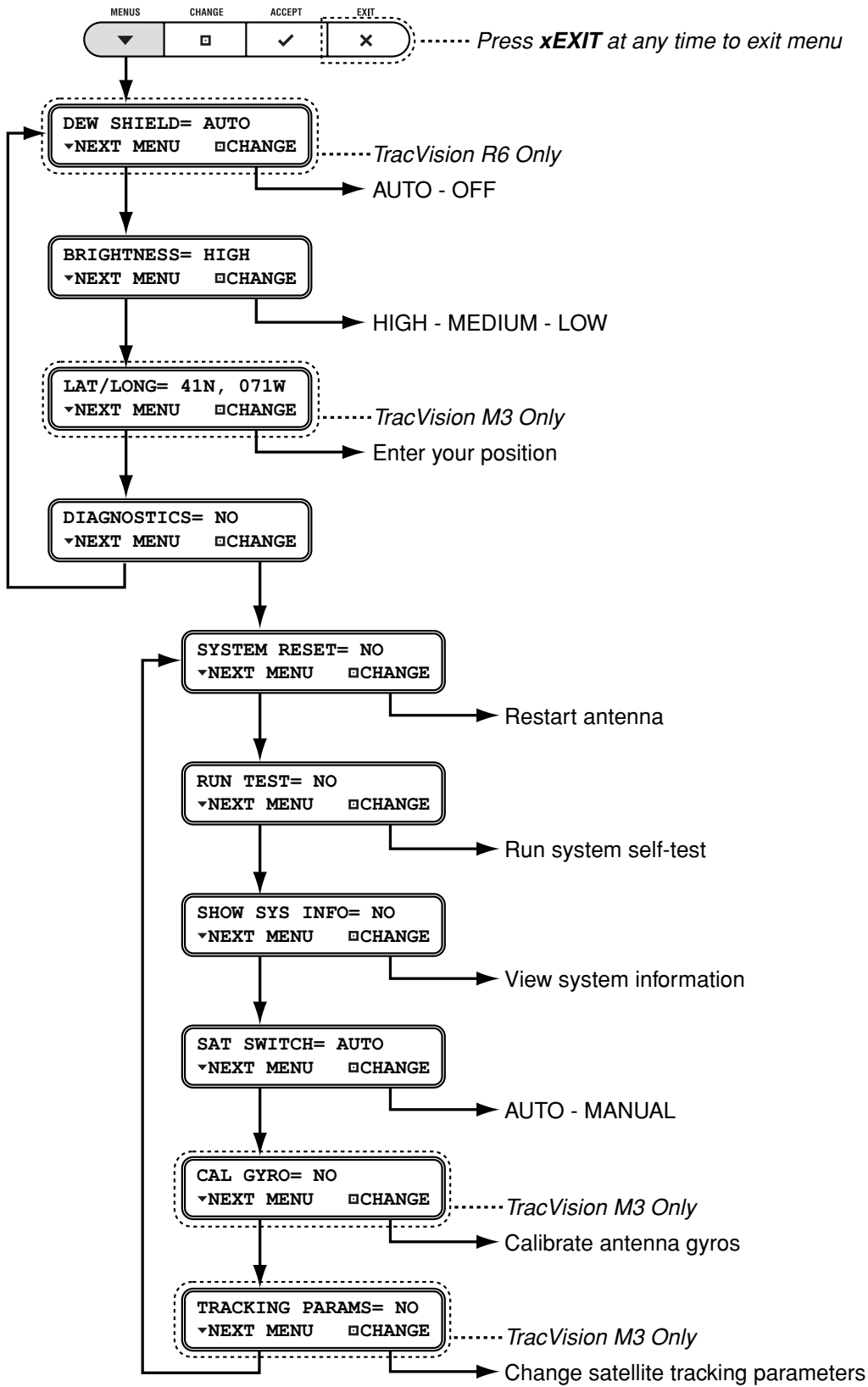
This appendix provides a quick reference guide to the interface box menu structure.

Contents

Interface Box Menus..... 77



Interface Box Menus



TRACVISION[®]

BY KVH INDUSTRIES

KVH[®]
www.kvh.com

TVInterfaceBox_US_UsersG_Cvr

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