The following change applies to Revision A of the TracVision R6 Interface Box User’s Guide (KVH Part Number 54-0324).

### Connecting Power

The wiring diagrams on pages 53-60 of the User’s Guide show the power connection incorrectly. The wires are reversed.

The diagram below shows the correct power wiring to the TracVision R6 interface box. Be sure to connect the red (positive) wire to +12 VDC vehicle power and the black (negative) wire to ground.

The interface box circuitry has built-in reverse polarity protection. Therefore, if power is wired incorrectly, the electronics will not become damaged.
Welcome to TracVision R6
User’s Guide

This manual provides detailed instructions on the proper operation, setup, and troubleshooting of the KVH TracVision R6 mobile satellite TV antenna system. For basic operation information, also refer to the Quick Start Guide. For installation instructions, refer to the 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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Index
1 — Introduction

This section provides a basic overview of the TracVision R6 system and explains how to use this manual.

Contents

1.1 System Overview .................................................................3
1.2 How to Use This Manual .......................................................4
1.1 System Overview

When connected to your satellite TV receiver and television, the TracVision R6 antenna system delivers live satellite TV to your RV or motorcoach – even while you’re on the move! A basic system is illustrated in Figure 1-1. Detailed system wiring diagrams are provided in Appendix A on page 53.

**Figure 1-1 Basic TracVision R6 System Diagram**

### System Components

The TracVision R6 includes the following components:

**Antenna**

Using integrated DVB® and GPS technology, the low-profile (12.5” high) antenna quickly acquires the correct satellite, switches between satellites, and sends TV signals to the interface box. Internal gyros allow the antenna to track the satellite at all times, whether you’re parked or cruising down the highway, and its DewShield™ dew elimination system ensures optimum reception.

**Interface Box**

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 vehicle’s satellite TV receiver.
1.2 How to Use this Manual

This manual provides all of the information you need to operate, set up, and troubleshoot the TracVision R6 system.

Who Should Use This Manual

The user should refer to the “Operation” and “System Preferences” sections to learn how to operate the system using the interface box.

The user or installer should refer to the “Initial Setup” section for information on configuring the system for the desired satellite TV service. The user or installer should refer to the “System Wiring Diagrams” appendix for information on connecting additional receivers or an HDTV converter.

The user and/or servicing technician should refer to the “Troubleshooting” section 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:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Icon Description" /></td>
<td>A helpful tip that either directs you to a related area within the manual or offers suggestions on getting the most from your system</td>
</tr>
<tr>
<td><img src="image" alt="Icon Description" /></td>
<td>An alert to important information regarding procedures, product specifications, or product use</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Icon Description" /></td>
<td>An illustration of the buttons on the interface box; gray shading indicates which button the user should press</td>
</tr>
</tbody>
</table>
Typographical Conventions

This manual uses the following typographical conventions:

<table>
<thead>
<tr>
<th>Text Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press ▼EXIT to exit the menu.</td>
<td>Both the icon and the name of the button are provided</td>
</tr>
<tr>
<td>SELECT SATELLITES</td>
<td>Text as it appears on the interface box display</td>
</tr>
<tr>
<td>The display shows “DIRECTV.”</td>
<td>Text in quotes is shown on the interface box display</td>
</tr>
<tr>
<td>&lt;Satellite name&gt;</td>
<td>Text inside brackets is variable</td>
</tr>
<tr>
<td>See Section 3.1, “Turning DewShield On/Off.”</td>
<td>Cross-reference to another section in the manual or to a web site</td>
</tr>
</tbody>
</table>

Related Documentation

In addition to this User’s Guide, the following documents are provided with the TracVision R6 system:

<table>
<thead>
<tr>
<th>Document</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation Guide</td>
<td>Complete product installation instructions</td>
</tr>
<tr>
<td>Quick Start Guide</td>
<td>Handy quick reference to basic operation and setup</td>
</tr>
<tr>
<td>Product Registration Form</td>
<td>Details on registering the product</td>
</tr>
<tr>
<td>Warranty Statement</td>
<td>Warranty terms and conditions</td>
</tr>
<tr>
<td>Contents List</td>
<td>List of every part supplied in the kit</td>
</tr>
</tbody>
</table>
2 — Operation

This section explains how to operate your TracVision R6 system. It explains how to turn the system on/off and how to switch between satellites.

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2.1 Receiving Satellite TV Signals ................................. 9
2.2 Turning On the System .......................................... 10
2.3 Turning Off the System .......................................... 10
2.4 Understanding the Status Screen ......................... 11
2.5 Switching Satellites ........................................ 12
2.1 Receiving Satellite TV Signals

TV 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.

Figure 2-1 Location of the DIRECTV 101 Satellite

In addition, since TV satellites are located above the equator, the TracVision antenna must have a clear view of the southern 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 Satellite Blockage

For your convenience, KVH provides links to several web sites that offer satellite coverage information. Simply visit our web site at www.kvh.com/footprint.
2.2 Turning On the System

Follow the steps below to turn on your TracVision R6 system.

1. Park your vehicle in an area with a clear view of the southern sky, away from trees or tall buildings.

2. Turn on your satellite TV receiver and TV.

3. Press the Power switch on the front of the TracVision interface box.

4. Wait 1 minute for system startup.

Once the antenna finds the correct satellite, all three status lights on the interface box should be lit solid green. If any lights are not lit green, refer to Section 5.2, “System Status Lights” on page 42.

Figure 2-3 Interface Box Components

2.3 Turning Off the System

Follow the steps below to turn off your TracVision R6 system.

1. Press the Power switch on the front of the TracVision interface box.

2. Turn off your satellite TV receiver and TV.
2.4 Understanding the Status Screen

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

Figure 2-4 Interface Box Status Screen

Antenna State
This field indicates the current state of the antenna: IDLE, INITIALIZING, SEARCHING, TRACKING, or ERROR.

Service
This code indicates the satellite TV service that is currently set up in the TracVision R6 system. During initial setup, you can choose from among four services: DTV (DIRECTV), DISH (DISH Network), EXVU (ExpressVu), and MAN (Manual).

Satellite
This number is the name of the satellite that the antenna is currently tracking. (The satellite name refers to the satellite’s “orbital slot,” which is its longitudinal location above the equator.)

Signal Strength
These bars indicate the strength of the satellite TV signal, as measured by RF level. The more bars, the stronger the signal, just like a cell phone. In general, you need at least 3 bars for good reception.

If your system is set up for an HDTV converter, the status screen differs somewhat. See the table on the following page.
2.5 Switching Satellites

If your system is set up for multiple satellites, you can easily switch between them. Use the switching method that applies to your particular setup (see Section 3, “Initial Setup” on page 21 for details). You can identify the current satellite switching method by the format of the status screen.

<table>
<thead>
<tr>
<th>Status Screen Example</th>
<th>Satellite Switching Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRACKING DTV 101</td>
<td>Automatic</td>
</tr>
<tr>
<td>TRACKING DISH 119</td>
<td>Manual</td>
</tr>
<tr>
<td>PUSH □ TO SWITCH SAT</td>
<td></td>
</tr>
<tr>
<td>TRACKING&lt;101&gt;/119</td>
<td>Automatic with HDTV Converter</td>
</tr>
<tr>
<td>PUSH □ FOR 101/110</td>
<td></td>
</tr>
</tbody>
</table>

**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:

<table>
<thead>
<tr>
<th>Service</th>
<th>Antenna Setting</th>
<th>Satellites</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIRECTV</td>
<td>OVAL2</td>
<td>101 and 119</td>
</tr>
<tr>
<td>DISH Network</td>
<td>DISH500</td>
<td>119 and 110</td>
</tr>
<tr>
<td>ExpressVu</td>
<td>DUAL LNB</td>
<td>91 and 82</td>
</tr>
</tbody>
</table>

**Manual Satellite Switching**

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

Press □ CHANGE until the display shows the desired satellite.
Automatic Satellite Switching with HDTV Converter

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

- 101 and 119
- 101 and 110

The selected pair appears at the top of the display and 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.

Selecting the Alternate Satellite Pair

Press CHANGE to select the alternate satellite pair.

Figure 2-5  Status Screen in Automatic - HDTV Converter Mode

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

<table>
<thead>
<tr>
<th>Service</th>
<th>Antenna Setting</th>
<th>Satellites</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIRECTV</td>
<td>OVAL3</td>
<td>101, 110, and 119</td>
</tr>
</tbody>
</table>

To order a KVH HDTV Converter (KVH part number 01-0260-06), contact your KVH dealer or call KVH directly at 401-847-3327.

For your convenience, KVH lists 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 web site for the first time.
3 — System Preferences

This section explains how to change the settings for DewShield and display brightness to suit your personal preferences. It also explains how to revert these settings to their factory defaults.

Contents

3.1 Turning DewShield On/Off .................................................. 17
3.2 Adjusting the Display Brightness ................................. 18
3.3 Setting to Defaults ......................................................... 19
3.1 Turning DewShield™ On/Off

Your TracVision R6 antenna includes the 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).

Unless power conservation is a critical concern, you should keep DewShield set to AUTO to prevent dew from forming. Follow the steps below if you need to change the current setting.

1. Press ▼MENUS until the display shows “DEW SHIELD”.

```
MENUS   CHANGE      ACCEPT    EXIT
▼       □          ✓          ❌
```

```
DEW SHIELD= AUTO
▼NEXT MENU      □CHANGE
```

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

```
MENUS   CHANGE      ACCEPT    EXIT
▼       □          ✓          ❌
```

```
DEW SHIELD= OFF?
□CHANGE       ✓ACCEPT
```

3. Press ✓ACCEPT.

```
MENUS   CHANGE      ACCEPT    EXIT
▼       □          ✓          ❌
```

```
DEW SHIELD= OFF
```

4. Press ▼EXIT to exit the menu.

```
MENUS   CHANGE      ACCEPT    EXIT
▼       □          ✓          ❌
```

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.
3.2 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”.

   MENUS   CHANGE   ACCEPT   EXIT
   ▼       □        ✔        ✗

   BRIGHTNESS= HIGH
   ▼NEXT MENU   □CHANGE

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

   MENUS   CHANGE   ACCEPT   EXIT
   ▼       □        ✔        ✗

   BRIGHTNESS= MEDIUM?
   □CHANGE   ✔ACCEPT

3. Press ✔ ACCEPT.

   MENUS   CHANGE   ACCEPT   EXIT
   ▼       □        ✔        ✗

   BRIGHTNESS= MEDIUM

4. Press ▼EXIT to exit the menu.
### 3.3 Setting to Defaults

The basic menu functions described in this section are set to the following defaults at the factory:

- **DewShield**: AUTO
- **Brightness**: HIGH

Follow the steps below if you wish to restore these defaults.

1. **Press** ▼**MENUS** until the display shows “SET TO DEFAULTS”.

   ![Menu options](image)

2. **Press** □**CHANGE** until the display shows “SET TO DEFAULTS=YES”.

   ![Menu options](image)

3. **Press** ✔**ACCEPT**.

   ![Menu options](image)

4. **Press** ▼**EXIT** to exit the menu.

   ![Menu options](image)
4 — Initial Setup

When you turn on the TracVision R6 system for the first time, the interface box display shows “SYSTEM NEEDS SETUP.” This section explains how to set up the TracVision R6 system for your particular satellite TV service and receiver configuration.

Contents

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4.2 Initial Setup – DISH Network .................................27
4.3 Initial Setup – ExpressVu .................................31
4.4 Initial Setup – Manual Mode ..................34
4.5 Resetting the System to Change the Initial Setup ........36
4.1 Initial Setup – DIRECTV

Follow the steps below to set up the TracVision R6 for DIRECTV service.

1. Press any button to begin the setup process.

   ![Screen 1]

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

   ![Screen 2]

3. Press □ CHANGE until the display shows the desired antenna type (see the table below).

   ![Screen 3]

<table>
<thead>
<tr>
<th>Antenna</th>
<th>Satellites Used</th>
<th>Satellite Switching</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROUND</td>
<td>101 only</td>
<td>None (Unnecessary)</td>
</tr>
<tr>
<td>OVAL2</td>
<td>101, 119</td>
<td>Automatic</td>
</tr>
<tr>
<td>OVAL3*</td>
<td>101, 110, 119</td>
<td>Automatic with HDTV Converter</td>
</tr>
<tr>
<td>MANUAL</td>
<td>Select up to 4</td>
<td>Manual</td>
</tr>
</tbody>
</table>

* Select OVAL3 only if you have a KVH HDTV converter installed.

If the status screen does not show “System Needs Setup”, follow the steps in Section 4.5, “Resetting the System to Change the Initial Setup” on page 36.
4. 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.

- INSTALLING SAT
  101

- RESTARTING ANTENNA

**Antenna Type = OVAL2?**

The setup process is complete. The display shows the installed satellites (101 and 119) momentarily then the antenna restarts.

- 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.

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

   ![Track= 101/110?](image1)

2. Press ✔ ACCEPT.

   ![Menus Change Accept Exit](image2)

   The display shows the installed satellites (101, 119, and 110) momentarily then the antenna restarts.

   ![Track= 101/119](image3)

   ![Installing Satellites 101 119 110](image4)

   ![Restarting Antenna](image5)
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.

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.

Once you have installed all four satellites, or you have selected NONE, the display shows the installed satellites momentarily then the antenna restarts.
4.2 Initial Setup – DISH Network

Follow the steps below to set up the TracVision R6 for DISH Network service.

1. Press any button to begin the setup process.

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

3. Press ACCEPT.

If the status screen does not show “System Needs Setup”, follow the steps in Section 4.5, “Resetting the System to Change the Initial Setup” on page 36.
4. Press CHANGE until the display shows the desired antenna type (see the table below).

<table>
<thead>
<tr>
<th>Antenna</th>
<th>Satellites Used</th>
<th>Satellite Switching</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISH500</td>
<td>119, 110</td>
<td>Automatic</td>
</tr>
<tr>
<td>MANUAL</td>
<td>Select up to 4</td>
<td>Manual</td>
</tr>
</tbody>
</table>

5. 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.

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 “Running the Receiver Check Switch Function” on page 30.
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.

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.

Once you have installed all four satellites, or you have selected NONE, the display shows the installed satellites momentarily then the antenna restarts.

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 “Running the Receiver Check Switch Function” on page 30.
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.

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:

<table>
<thead>
<tr>
<th>Installed Switch: SW42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input: 1 1 2 2</td>
</tr>
<tr>
<td>Satellite: 119 119 110 110</td>
</tr>
<tr>
<td>Polarity: Odd Even Odd Even</td>
</tr>
<tr>
<td>Status: Satellite reception verified</td>
</tr>
</tbody>
</table>

If you set up the antenna for Manual antenna type, verify that the TV shows “No Switch Detected,” “Switch Type Unknown,” or a similar error message.

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 and allow the receiver to download the program guide.
4.3 Initial Setup – ExpressVu

Follow the steps below to set up the TracVision R6 for ExpressVu service.

1. Press any button to begin the setup process.

   ![Tracking DTV 101 System Needs Setup]

   SERVICE= DIRECTV?
   □CHANGE    ✔ACCEPT

2. Press □CHANGE until the display shows “EXPRESSVU”.

   ![Service= ExpressVu]

   SERVICE= EXPRESSVU?
   □CHANGE    ✔ACCEPT

3. Press ✔ ACCEPT.

   ![Antenna= Single LNB]

   ANTENNA= SINGLE LNB?
   □CHANGE    ✔ACCEPT

If the status screen does not show “System Needs Setup”, follow the steps in Section 4.5, “Resetting the System to Change the Initial Setup” on page 36.
4. Press ▽ CHANGE until the display shows the desired antenna type (see the table below).

<table>
<thead>
<tr>
<th>Antenna</th>
<th>Satellites Used</th>
<th>Satellite Switching</th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGLE LNB</td>
<td>91</td>
<td>None (Unnecessary)</td>
</tr>
<tr>
<td>DUAL LNB</td>
<td>91, 82</td>
<td>Automatic</td>
</tr>
<tr>
<td>MANUAL</td>
<td>Select up to 2</td>
<td>Manual</td>
</tr>
</tbody>
</table>

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.

**Antenna Type = DUAL LNB?**

The setup process is complete. The display shows the installed satellites (91 and 82) momentarily then the antenna restarts.
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.

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

```
SAT 1 OF 2 = 91
(REQUIRED)
```

```
SAT 2 OF 2 = NONE?
□ CHANGE    ✔ACCEPT
```

2. Press ✔ ACCEPT to install the satellite.

```
INSTALLING SATS
91 82
```

The display shows the installed satellites momentarily then the antenna restarts.

```
RESTARTING ANTENNA
```
4.4 Initial Setup – Manual Mode

Follow the steps below to manually set up the TracVision R6 to track your own unique set of satellites.

1. Press any button to begin the setup process.

   ![Button Press]

2. Press □ CHANGE until the display shows “MANUAL”.

   ![Change Display]

3. Press ✔ ACCEPT.

   ![Accept Display]
4. Press CHANGE until the display shows the first satellite that you want to install.

You can choose any five of the following satellites:

- 61
- 72
- 82
- 91
- 101

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.

Once you have installed all five satellites, or you have selected NONE, the display shows the installed satellites momentarily then the antenna restarts.

INSTALLING SATS
101 110 119

RESTARTING ANTENNA
4.5 Resetting the System to Change the Initial 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 in the previous sections.

1. Press ▼MENUS until the display shows “DIAGNOSTICS”.

   MENUS  CHANGE  ACCEPT  EXIT
   ▼  □   ✔   ❌

   DIAGNOSTICS= NO
   ▼NEXT MENU □CHANGE

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

   MENUS  CHANGE  ACCEPT  EXIT
   ▼  □   ✔   ❌

   DIAGNOSTICS= YES?
   □CHANGE ✔ACCEPT

3. Press ✔ACCEPT to enter the Diagnostics menu.

   MENUS  CHANGE  ACCEPT  EXIT
   ▼  □   ✔   ❌

   ENTERING DIAGNOSTICS

   SYSTEM RESET= NO
   ▼NEXT MENU □CHANGE
4. Press □CHANGE until the display shows “SYSTEM RESET= YES”.

5. Press ✔ACCEPT to reset the system.

6. When the display shows the status screen, set up the system for the desired service. *Follow the steps in Section 4.1, 4.2, 4.3, or 4.4.*
5 — Troubleshooting

This section identifies basic problems along with their possible causes and solutions. It also explains what the status lights indicate, how to perform a diagnostics test, and how to get technical support.

Contents

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5.2 System Status Lights ............................................. 42
5.3 Running the Diagnostics Test ................................. 44
5.4 Viewing System Information ................................. 47
5.5 Technical Support ................................................. 49
5.6 Product Care .................................................. 50
5.1 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 TracVision interface box and/or perform a diagnostics test, as explained in the remainder of this section.

1. **Can the Antenna See the Satellite?**
   
The antenna requires an unobstructed view of the southern sky to receive satellite TV signals. Common causes of blockage include trees, buildings, overpasses, and mountains. The TracVision antenna will not work inside a garage.

2. **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 and keep DewShield set to AUTO to ensure optimum reception (refer to Section 3.1, “Turning DewShield On/Off” on page 17).

3. **Is It Raining Cats and Dogs?**
   
   Heavy rain or snow can weaken satellite TV signals. Reception should improve once the inclement weather subsides.

4. **If You Have DIRECTV, 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.

5. **Are the Interface Box, Satellite TV Receiver, and TV Turned On and Connected Properly?**
   
   Make sure the power switch on the front of the TracVision interface box is turned on (the VOLTAGE light is 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 these components to ensure none have come loose.
5.2 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.

During normal operation, all three status lights should be lit green. The tables on the following page explain what the different light conditions indicate.
### VOLTAGE Light Indications

<table>
<thead>
<tr>
<th>Light is...</th>
<th>Indicates</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>Off</td>
<td>Interface box is OFF (power switch is off) or no power input</td>
</tr>
<tr>
<td>Green</td>
<td>OK</td>
<td>Good power (between 10-16 VDC at interface box)</td>
</tr>
<tr>
<td>Green, flashing</td>
<td>Cable Open</td>
<td>Open detected in antenna cable (check antenna coax connection)</td>
</tr>
<tr>
<td>Orange</td>
<td>Low Power</td>
<td>Low power (between 8-10 VDC at interface box)</td>
</tr>
<tr>
<td>Red, flashing</td>
<td>Bad Power</td>
<td>Insufficient power (less than 8 VDC or more than 16 VDC input)</td>
</tr>
</tbody>
</table>

### RECEIVER Light Indications

<table>
<thead>
<tr>
<th>Light is...</th>
<th>Indicates</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>OK</td>
<td>Good communications with receiver</td>
</tr>
<tr>
<td>Orange</td>
<td>No Comm</td>
<td>No communications with receiver</td>
</tr>
<tr>
<td>Orange, flashing*</td>
<td>Overload</td>
<td>Overload or short circuit detected on the antenna cable</td>
</tr>
<tr>
<td>Red</td>
<td>Fault</td>
<td>Internal power fault</td>
</tr>
</tbody>
</table>

### ANTENNA Light Indications

<table>
<thead>
<tr>
<th>Light is...</th>
<th>Indicates</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>Off</td>
<td>Antenna is OFF, disconnected, or has insufficient power</td>
</tr>
<tr>
<td>Green</td>
<td>Tracking</td>
<td>Antenna is tracking the selected satellite</td>
</tr>
<tr>
<td>Green, flashing</td>
<td>Searching</td>
<td>Antenna is searching for a satellite</td>
</tr>
<tr>
<td>Orange, flashing*</td>
<td>Overload</td>
<td>Overload or short circuit detected on the antenna cable</td>
</tr>
<tr>
<td>Red</td>
<td>No Comm</td>
<td>No communications with antenna</td>
</tr>
<tr>
<td>Red, flashing</td>
<td>Fault</td>
<td>Error detected in antenna</td>
</tr>
</tbody>
</table>

* The RECEIVER and ANTENNA lights both flash orange if an overload or short circuit is detected.
5.3 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”.

```
RUN TEST= NO
▼NEXT MENU □CHANGE
```

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

```
RUN TEST= YES?
□CHANGE ▬ACCEPT
```

6. Press ▬ACCEPT to begin the test.

```
RUNNING TEST
```

```
ANTENNA: TRACKING
PRESS ▼ TO CONTINUE
```

7. Once the test is complete, the display shows the antenna status. Press ▼MENUS to scroll through the remaining status messages.
The table below lists all of the status messages and their possible states.

### Diagnostics Test Indications

<table>
<thead>
<tr>
<th>Component Tested</th>
<th>Possible States</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTEenna</td>
<td>IDLE</td>
</tr>
<tr>
<td></td>
<td>INITIALIZING</td>
</tr>
<tr>
<td></td>
<td>SEARCHING</td>
</tr>
<tr>
<td></td>
<td>TRACKING</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
</tr>
<tr>
<td>CURRENT SAT</td>
<td>&lt;Name of satellite the antenna is tracking&gt;</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
</tr>
<tr>
<td>RF LEVEL</td>
<td>OK, &lt;actual RF level&gt;</td>
</tr>
<tr>
<td></td>
<td>LOW, &lt;actual RF level&gt;</td>
</tr>
<tr>
<td></td>
<td>ERROR, COMM</td>
</tr>
<tr>
<td>AVAILABLE SATS</td>
<td>&lt;Satellite name&gt;</td>
</tr>
<tr>
<td></td>
<td><em>Press ▼ MENUS to scroll through the list of available satellites</em></td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
</tr>
<tr>
<td>GPS</td>
<td>&lt;current position in latitude/longitude&gt;</td>
</tr>
<tr>
<td></td>
<td>ACQUIRING</td>
</tr>
<tr>
<td></td>
<td>ERROR</td>
</tr>
<tr>
<td>CABLE STATE</td>
<td>OK</td>
</tr>
<tr>
<td></td>
<td>SHORTED</td>
</tr>
<tr>
<td></td>
<td>OPEN</td>
</tr>
<tr>
<td>SYSTEM DC</td>
<td>OK; &lt;VDC power at the interface box&gt;</td>
</tr>
<tr>
<td></td>
<td>LOW; &lt;VDC power at the interface box&gt;</td>
</tr>
<tr>
<td></td>
<td>BAD; &lt;VDC power at the interface box&gt;</td>
</tr>
<tr>
<td>ANTENNA DC</td>
<td>OK; &lt;VDC power at the antenna&gt;</td>
</tr>
<tr>
<td></td>
<td>LOW; &lt;VDC power at the antenna&gt;</td>
</tr>
<tr>
<td></td>
<td>BAD; &lt;VDC power at the antenna&gt;</td>
</tr>
</tbody>
</table>
5.4 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 \( \text{MENUS} \) until the display shows “DIAGNOSTICS”.

   \[
   \begin{array}{cccc}
   \text{MENUS} & \text{CHANGE} & \text{ACCEPT} & \text{EXIT} \\
   \downarrow & \square & \checkmark & \times \\
   \end{array}
   \]

   DIAGNOSTICS= NO
   \( \downarrow \text{NEXT MENU} \) \( \square \text{CHANGE} \)

2. Press \( \square \text{CHANGE} \) until the display shows “DIAGNOSTICS= YES”.

   \[
   \begin{array}{cccc}
   \text{MENUS} & \text{CHANGE} & \text{ACCEPT} & \text{EXIT} \\
   \downarrow & \square & \checkmark & \times \\
   \end{array}
   \]

   DIAGNOSTICS= YES?
   \( \square \text{CHANGE} \) \( \checkmark \text{ACCEPT} \)

3. Press \( \checkmark \text{ACCEPT} \) to enter the Diagnostics menu.

   \[
   \begin{array}{cccc}
   \text{MENUS} & \text{CHANGE} & \text{ACCEPT} & \text{EXIT} \\
   \downarrow & \square & \checkmark & \times \\
   \end{array}
   \]

   ENTERING DIAGNOSTICS

   SYSTEM RESET= NO
   \( \downarrow \text{NEXT MENU} \) \( \square \text{CHANGE} \)
4. Press ▼MENUS until the display shows “SHOW SYS INFO = NO”.

```
MENUS    CHANGE    ACCEPT    EXIT
▼        □          ✓          ×
```

```
SHOW SYS INFO = NO
▼NEXT MENU □CHANGE
```

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

```
MENUS    CHANGE    ACCEPT    EXIT
▼        □          ✓          ×
```

```
SHOW SYS INFO = YES?
□CHANGE       ✓ACCEPT
```

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

```
MENUS    CHANGE    ACCEPT    EXIT
▼        □          ✓          ×
```

```
KVH INDUSTRIES
PRESS ▼ TO CONTINUE
```

7. Press ▼MENUS to scroll through the list.

```
MENUS    CHANGE    ACCEPT    EXIT
▼        □          ✓          ×
```

```
TRACVISION R6
PRESS ▼ TO CONTINUE
```
The table below lists all of the information reported by the interface box.

### System Information

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRACVISION &lt;model&gt;</td>
<td>Model of TracVision antenna (e.g., “R6”)</td>
</tr>
<tr>
<td>SYS SW: &lt;#&gt;</td>
<td>Version of antenna main software</td>
</tr>
<tr>
<td>RF SW: &lt;#&gt;</td>
<td>Version of antenna RF software</td>
</tr>
<tr>
<td>MOTOR SW: &lt;#&gt;</td>
<td>Version of antenna motor software</td>
</tr>
<tr>
<td>JBOX SW: &lt;#&gt;</td>
<td>Version of interface box software</td>
</tr>
<tr>
<td>ANT. SER. # &lt;#&gt;</td>
<td>Serial number of antenna</td>
</tr>
<tr>
<td>JBOX SER. # &lt;#&gt;</td>
<td>Serial number of interface box</td>
</tr>
</tbody>
</table>

### 5.5 Technical Support

If you experience an operating problem or require technical assistance, please contact your local authorized TracVision dealer/installer first. You can find an authorized technician near you by visiting our website at [www.kvh.com/wheretogetservice](http://www.kvh.com/wheretogetservice).

If an authorized technician is not located nearby, please contact KVH Technical Support directly:

**Phone:** 401-847-3327

**E-mail:** techs@kvh.com

**Internet:** [www.kvh.com/help](http://www.kvh.com/help)

Please have your antenna and interface box serial numbers handy before you call.
5.6 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 (e.g., 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. Metallic paint or paint having a metallic color will block satellite signals.

- Consider the antenna’s height before driving under low-clearance structures.
Appendices

This section provides wiring diagrams and notes for various TracVision system configurations.

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A System Wiring Diagrams ............................................. 53

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Appendix A
System Wiring Diagrams

The diagrams on the following pages show how to wire the system for various configurations:

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Requires KVH P/N(s)*:</th>
<th>See page:</th>
</tr>
</thead>
<tbody>
<tr>
<td>One (1) receiver</td>
<td>N/A</td>
<td>54</td>
</tr>
<tr>
<td>Two (2) receivers</td>
<td>19-0347</td>
<td>55</td>
</tr>
<tr>
<td>Three (3) or more receivers</td>
<td>19-0410 &amp; 19-0123</td>
<td>56</td>
</tr>
<tr>
<td>One (1) receiver with HDTV converter (DIRECTV only) – Automatic Satellite Switching</td>
<td>01-0260-06</td>
<td>57</td>
</tr>
<tr>
<td>Two (2) receivers with HDTV converter (DIRECTV only) – Manual Satellite Switching</td>
<td>01-0260-06</td>
<td>58</td>
</tr>
<tr>
<td>Three (3) or more receivers with HDTV converter (DIRECTV) – Manual Satellite Switching</td>
<td>01-0260-06, 19-0410, &amp; 19-0123</td>
<td>59</td>
</tr>
<tr>
<td>Three (3) or more receivers with HDTV converter (DIRECTV) – Automatic Satellite Switching</td>
<td>01-0260-06 x 2, 19-0410, 19-0123, &amp; 19-0366</td>
<td>60</td>
</tr>
</tbody>
</table>

* RF coax cables sold separately

Destacker, Single-output (19-0347) or Dual-output (19-0410)

The destacker converts a stacked signal into an unstacked signal, which standard satellite TV receivers are configured to decode.

Active Multiswitch (19-0123)

The active (powered) multiswitch allows you to connect multiple receivers. KVH recommends Channel Master model 6214IFD or equivalent. This multiswitch amplifies the signal to compensate for signal loss. A passive multiswitch will not provide the necessary amplification.

HDTV Converter Kit (01-0260-06)

The HDTV converter adjusts the signal frequency of the DIRECTV 110 satellite, allowing you to receive its HD channels. The kit includes a single-output destacker.

Splitter (19-0366)

The splitter divides the control signal from the interface box, which allows it to activate two HDTV converters.

Digital Video Recorders (DVRs): DVRs, such as TiVo®, require two satellite inputs, whereas a standard receiver requires only one input. Therefore, to connect a DVR to the TracVision system, you need to wire the DVR just like you would wire two receivers.
Wiring Diagram for a Single Receiver

To Antenna

Input Power (10-16 VDC)

Ground

Interface Box

Satellite TV Receiver

SATELLITE IN
Wiring Diagram for Two Receivers

To Antenna

Input Power (10-16 VDC)

Ground

Interface Box

Satellite TV Receiver (Master)

NOT USED

Destacker

Satellite TV Receiver

Components Required | KVH P/N:
--- | ---
Destacker, single-output | 19-0347
Wiring Diagram for Multiple Receivers Using a Multiswitch

To Antenna

Input Power (10-16 VDC)

Ground

Interface Box

Destacker

Input Power (12 VDC)

Multiswitch

Satellite TV Receiver (Master)

Components Required

<table>
<thead>
<tr>
<th>KVH P/N:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destacker, dual-output</td>
</tr>
<tr>
<td>Multiswitch</td>
</tr>
</tbody>
</table>

Satellite TV Receivers
Wiring Diagram for a Single Receiver and an HDTV Converter (DIRECTV only)

To Antenna

Interface Box

Input Power (10-16 VDC)

Ground

HDTV Converter

HD Receiver

Components Required | KVH P/N:
--- | ---
HDTV Converter Kit | 01-0260-06
Wiring Diagram for Two Receivers and an HDTV Converter (DIRECTV only)

In this configuration, the antenna must be set up for manual satellite switching between the 101, 110, and 119 satellites. Refer to Section 4.1, “Initial Setup - DIRECTV” on page 23 for setup instructions.

To Antenna

Input Power (10-16 VDC)

Interface Box

Ground

Destacker

HDTV Converter

Standard Definition Receiver (Master)

HD Receiver

Components Required

<table>
<thead>
<tr>
<th>Components Required</th>
<th>KVH P/N:</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDTV Converter Kit</td>
<td>01-0260-06</td>
</tr>
<tr>
<td>(includes single-output destacker)</td>
<td></td>
</tr>
</tbody>
</table>
Wiring Diagram for Multiple Receivers and an HDTV Converter (DIRECTV only)

In this configuration, the antenna must be set up for manual satellite switching between the 101, 110, and 119 satellites. Refer to Section 4.1, “Initial Setup - DIRECTV” on page 23 for setup instructions.

Components Required

<table>
<thead>
<tr>
<th>Components Required</th>
<th>KVH P/N:</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDTV Converter Kit</td>
<td>01-0260-06</td>
</tr>
<tr>
<td>Destacker, dual-output</td>
<td>19-0410</td>
</tr>
<tr>
<td>Multiswitch</td>
<td>19-0123</td>
</tr>
</tbody>
</table>

To Antenna

Input Power (10-16 VDC)

Ground

Interface Box

HD Receiver

To 3 Other Receivers

Destacker

Standard Definition Receiver (optional)

HDTV Converter

Multiswitch

Input Power (12 VDC)
In this configuration, the antenna may be set up for automatic satellite switching between the 101, 110, and 119 satellites. Refer to Section 4.1, “Initial Setup - DIRECTV” on page 23 for setup instructions.
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