

TracVision R6DX Installation Guide

These instructions explain how to install the TracVision R6DX satellite TV antenna system on an RV or motor coach. Complete instructions on how to use the system are provided in the *User's Guide*.

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Who Should Install the System?

To ensure a safe and effective installation, KVH recommends that a KVH-authorized technician install the TracVision R6DX system. To find a technician near you, please visit www.kvh.com/wheretogetservice. If you purchased the product and decide to install it yourself, please see the enclosed warranty statement for warranty implications.

Related Documentation

The following additional documents are provided with the TracVision R6DX system:

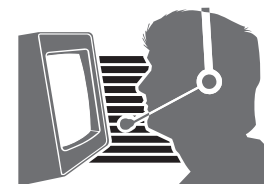
<u>Document</u>	<u>Description</u>
User's Guide	Complete operation, setup, and troubleshooting information
Product Registration Form	Details on registering the product with KVH
Warranty Statement	Warranty terms and conditions
Contents List	List of every part supplied in the kit

Technical Support

If you need technical assistance, please contact KVH Technical Support:

Phone: +1 401 847-3327

E-mail: techs@kvh.com



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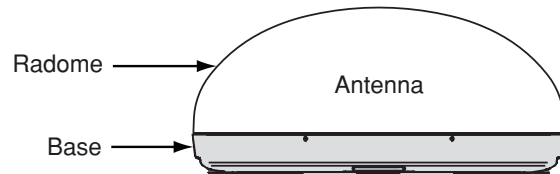
1 Inspect Parts and Get Tools

- a. Unpack the box and ensure it contains everything shown on the Contents List. Save the packaging for future use.

IMPORTANT!

Always lift the antenna by the baseplate and never by the radome or any portion of the internal antenna assembly (see [Figure 1](#)).

Figure 1 TracVision R6DX Antenna



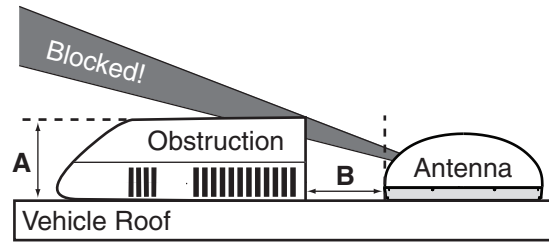
- b. Carefully examine all of the supplied parts to ensure nothing was damaged in shipment.
- c. Gather all of the tools and materials listed below. You will need these items to complete the installation.
 - Phillips and flat-head screwdrivers
 - 7/16" open-end wrench
 - Silicone sealant, RTV, or equivalent
 - Construction adhesive suitable for the roof
 - 5/8" - diameter hole saw
 - Augat IT1000 crimp/strip tool (KVH P/N 19-0242)
 - Eight 1/4" fasteners (see ["Mount the Interface Box" on page 11](#))
 - Fasteners suitable for mounting the antenna to the roof

2 Plan the Installation

Before you begin, consider the following installation guidelines:

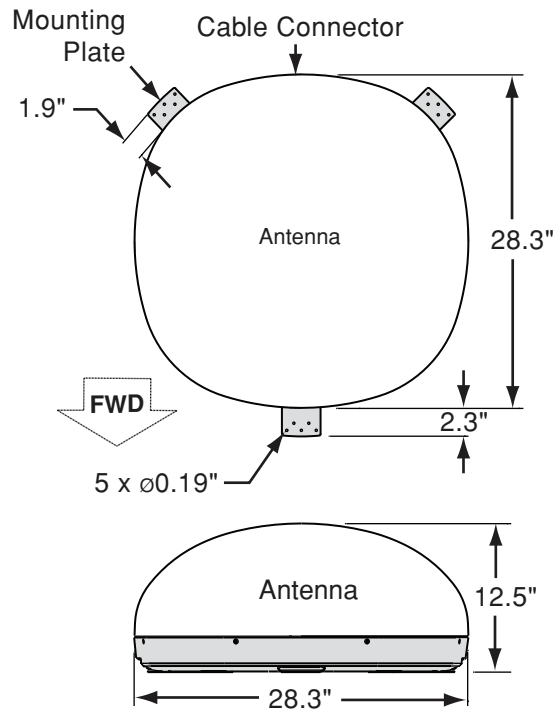
- Minimize blockage. The antenna needs a clear view of the sky to receive satellite TV. Using the table in [Figure 2](#) as a guide, mount the antenna a suitable distance away from obstructions on the roof, such as air conditioners.
- Ensure the mounting surface is flat and strong enough to support the 28-lb antenna. When placed on the mounting surface, all three mounting plates must lay flat against the roof (within 7/16") to avoid warping the base and damaging the antenna.
- The antenna must be mounted on the centerline of the vehicle with the antenna's cable connector facing the rear of the vehicle.
- Be sure to mount the antenna near enough to the interface box to allow you to connect the 28-ft. coax cable, while still maintaining sufficient slack in the cable. If you need to use a longer coax cable, use an RG6 (75 ohms) cable that does not exceed 80 feet in length.
- Once you've chosen a location for the antenna, identify a safe location nearby for the 5/8" cable access hole in the roof. Make sure you will not drill into any existing wires or aesthetic structures inside the vehicle.
- When choosing a location for the interface box and receiver, find a dry, well-ventilated area inside the vehicle away from any heat sources. Also be sure the front panel of the interface box will be easily accessible to the user.

Figure 2 Blockage from Obstruction



Obstruction Height (A)	Min. Distance from Antenna (B)
8"	8"
10"	13"
12"	19"
14"	24"
16"	30"

Figure 3 Antenna Dimensions



3 Remove the Restraints

- a. Carefully carry the antenna to the roof of the vehicle.
- b. Using a Phillips screwdriver, remove the four 1/4"-20 screws on the bottom of the antenna's base at the locations shown in *Figure 5*. Save these shipping restraints for future use.

IMPORTANT!

Be sure to remove all 4 shipping restraints. The antenna will not work with these restraints still installed.

NOTE: Once you have removed the shipping restraints, handle the antenna unit carefully. Improper handling might damage the unit.

Figure 4 Carrying Antenna to Roof



Figure 5 Shipping Restraint Locations (Bottom View)

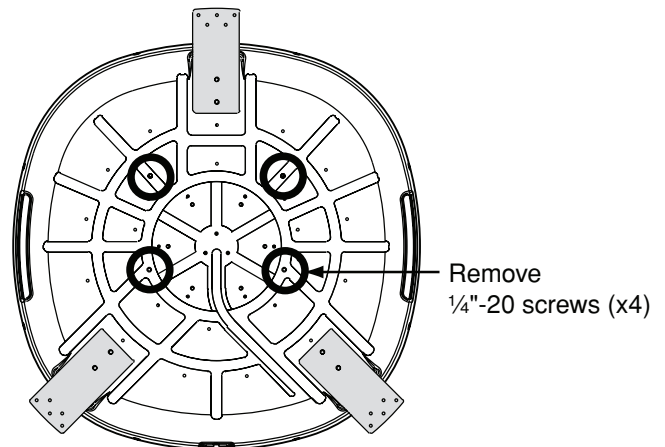
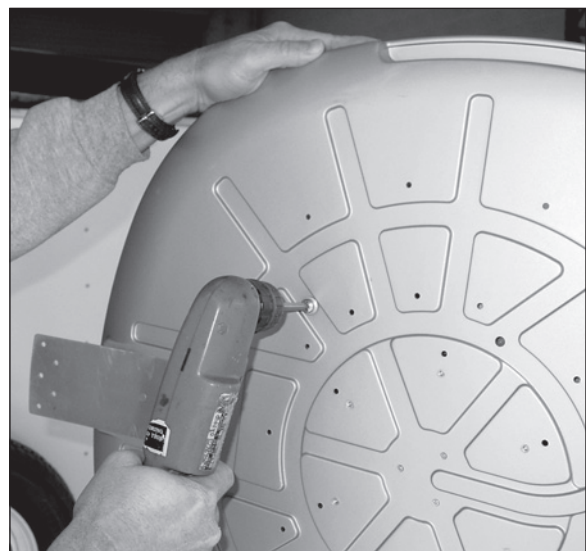


Figure 6 Removing the Shipping Restraints



4 Mount the Antenna

- a. Apply appropriate construction adhesive to the bottom of the antenna's three mounting plates across all of the holes.
- b. At the mounting location you chose earlier, place the antenna on the centerline of the roof so that the front mounting plate faces the front of the vehicle and the cable connector faces the rear of the vehicle (see *Figure 7*).
- c. Attach the three antenna mounting plates to the roof using 15 fasteners appropriate for the roof's construction.

IMPORTANT!

Due to the variation in RV roof construction, consult with the RV manufacturer to determine the safest fastening method.

- d. Seal all fasteners with silicone sealant or equivalent.

Figure 7 Antenna Orientation

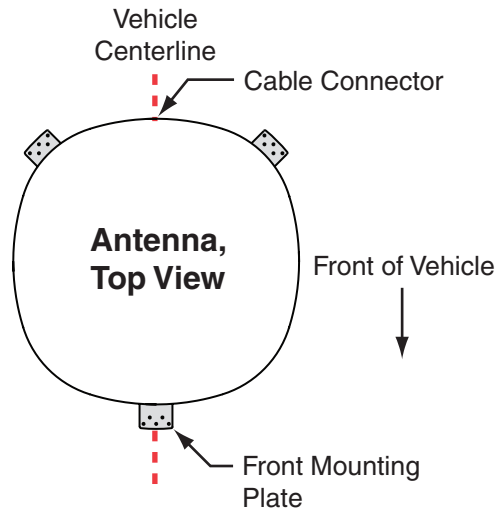


Figure 8 Attaching/Sealing the Mounting Plates



5 Wire the Antenna

- a. At the location you chose earlier, use a 5/8" hole saw to cut out a cable access hole in the vehicle's roof. Smooth the edges of the hole to protect the cable.
- b. Connect the RG6 antenna cable (the end with the rubber sealing boot) to the antenna. Hand-tighten, then tighten with a 7/16" wrench for 1/4 turn (see [Figure 9](#)).
- c. Slide the rubber sealing boot up the cable until it covers the connector. This boot will help protect the connector from the elements.
- d. Route the other end of the antenna cable down through the roof access hole and into the vehicle. Later, you will connect this end of the cable to the interface box.

IMPORTANT!

Do not kink the cable. Maintain a bend radius of at least 3 inches.

- e. Leave an adequate service loop - approximately 8" of slack - in the antenna cable for easy serviceability.
- f. Seal the cable access hole with a liberal amount of silicone sealant (or equivalent) to protect against leakage.
- g. Install the clamshell ventilator over the cable access hole. The clamshell's opening should face the rear of the vehicle. Secure in place with appropriate fasteners (see [Figure 10](#)).

Figure 9 Antenna Cable with Rubber Sealing Boot

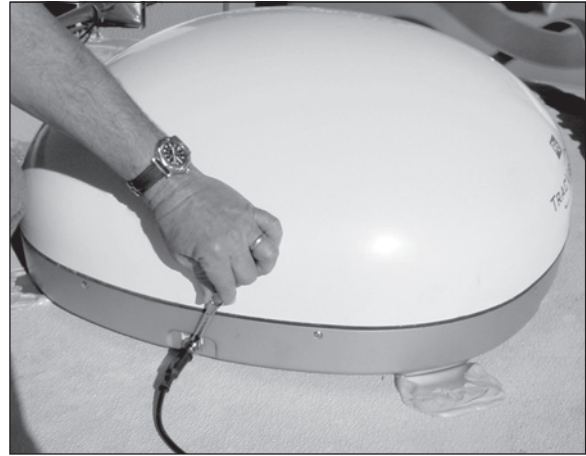


Figure 10 Clamshell Ventilator Mounting

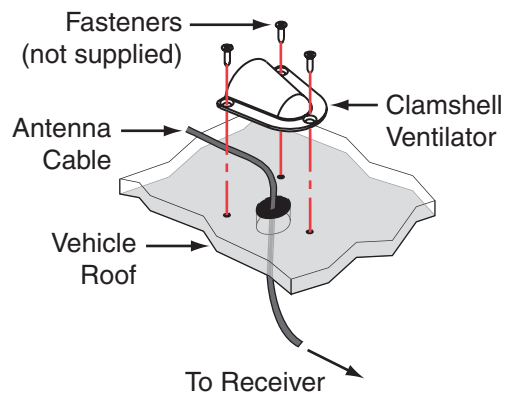


Figure 11 Antenna Installed



6 Wire the Interface Box

- a. If you cut the antenna cable, use an Augat IT1000 tool to attach a Snap-N-Seal® F-connector to the end of the connector (see [Figure 12](#)).

IMPORTANT!

Do not use a screw-on, push-on, or twist-on connector. Low-quality connectors will degrade the system performance and KVH's warranty does not cover repairs resulting from the use of such connectors.

- b. Connect the antenna cable to the "To KVH Antenna" jack on the interface box (see [Figure 13](#)).

Figure 12 Augat Tool

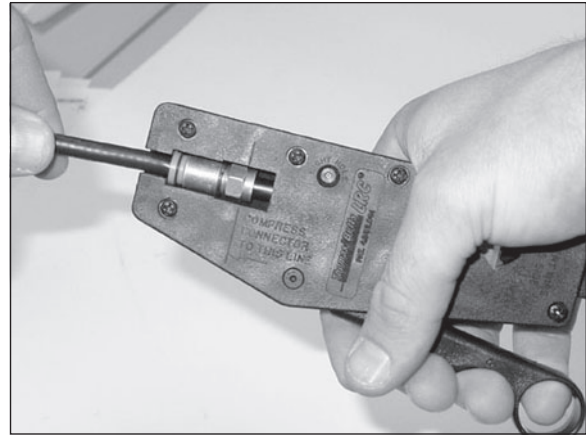
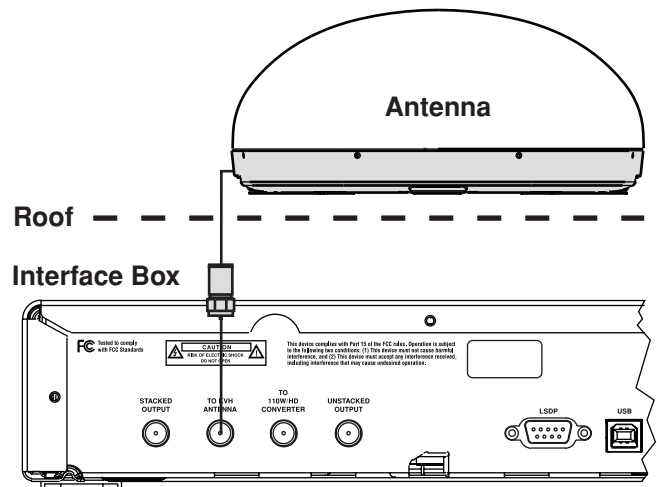


Figure 13 Interface Box Wiring



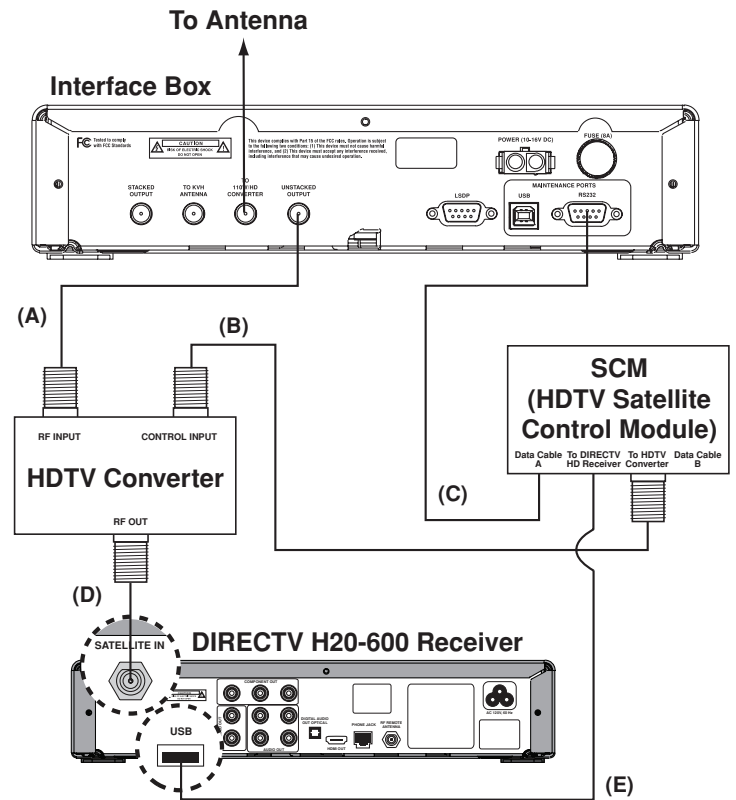
7 Connect HD Components

Follow the steps below to connect the TracVision R6DX high-definition (HD) components provided in the DIRECTV HDTV Tri-Sat AutoSwitch Kit and a DIRECTV H20-600 Receiver.

NOTE: For information on wiring additional components or wiring DISH Network and ExpressVu configurations, refer to the TracVision R6DX User's Guide.

- Connect one end of a coaxial cable (A) to the "Unstacked Output" connector on the interface box. Connect the other end to the "RF Input" connector on the HDTV Converter.
- Connect one end of a coaxial cable (B) to the "Control Input" connector on the HDTV Converter. Connect the other end to the "To HDTV Converter" connector on the HDTV Satellite Control Module (SCM).
- Connect the DB9-end of the data cable (C) to the "RS232" connector on the interface box. Connect the other end (RJ22) to the "Data Cable A" connector on the SCM.
- Connect one end of a coaxial cable (D) to the "RF Out" connector on the HDTV Converter. Connect the other end to the "Satellite In" connector on the DIRECTV H20-600 receiver.
- Connect one end of the USB cable (E) to the "To DIRECTV HD Receiver" connector on the SCM. Connect the other end to the "USB" connector on the DIRECTV H20-600 receiver.

Figure 14 Standard Configuration



8 Connect Power

The interface box requires 10-16 volts DC (VDC) power input supporting 60 watts (5 amps @ 12VDC).



CAUTION

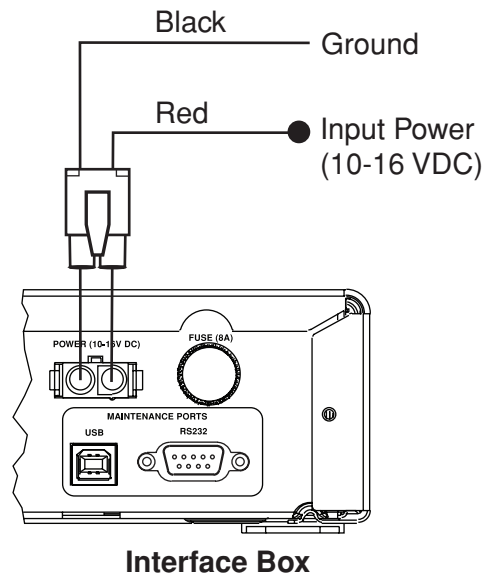
For your own safety, shut down vehicle power before you connect the wires.

- a. Before you connect the power wires, turn off vehicle power and test the circuit to ensure no power is present.
- b. Connect the individual power wires to a dedicated 12 VDC circuit. Connect the negative (black) wire to ground (power return), and connect the positive (red) wire to clean +12 VDC vehicle power.

NOTE: If vehicle power fluctuates or is noisy, KVH recommends that you use an AC/DC power supply (KVH P/N 72-0206-01) to provide stable power to the interface box.

- c. Plug the other end of the wires into the "Vehicle Power" jack on the rear panel of the interface box (see [Figure 15](#)).
- d. Connect power to the DIRECTV H20-600 receiver (refer to the receiver User's Guide for details).

Figure 15 Interface Box Power Wiring



9 Mount the Interface Box

Once all cables are connected, you need to install the interface box inside the vehicle.

- a. Attach the two mounting brackets to the sides of the unit using three #2-56 screws. Simply screw these fasteners into the vent slots (see [Figure 16](#)).

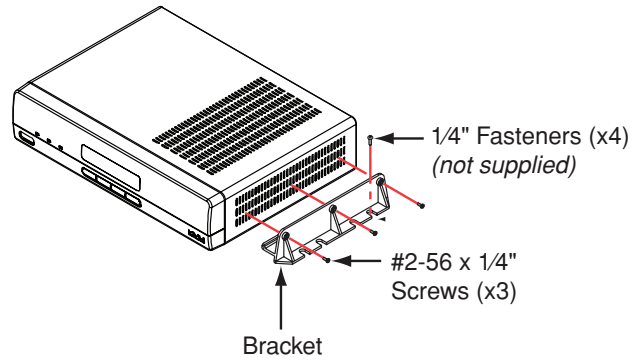
IMPORTANT!

To avoid overheating, do not block the upper vents of the interface box.

- b. Secure the brackets to the mounting surface using appropriate 1/4" fasteners (not supplied).

NOTE: Be sure to leave enough slack in the connecting cables (service loop) for easy serviceability.

Figure 16 Interface Box Brackets



10 Test the System

Now that you have installed the TracVision R6DX system, you need to turn the system on and verify that the antenna works properly.

- a. Ensure the antenna has a clear view of the southern sky.
- b. Apply power to the TV and DIRECTV H20-600 receiver, then press the power switch on the front of the interface box (see [Figure 17](#)).
- c. Wait while the antenna searches the sky for the satellite. Within a few minutes, all three status lights on the front of the interface box should be lit green (see [Figure 17](#)).

NOTE: If all three status lights are not lit green, refer to the TracVision R6DX User's Guide for troubleshooting information.

- d. Verify that the "System Needs Setup" screen is displayed (see [Figure 18](#)).

Figure 17 Interface Box Status Lights

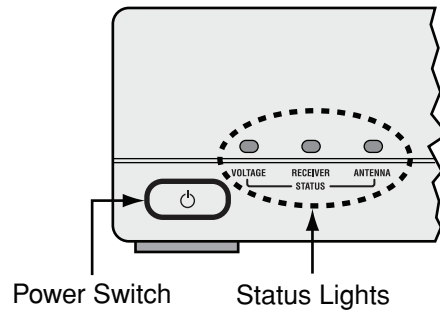
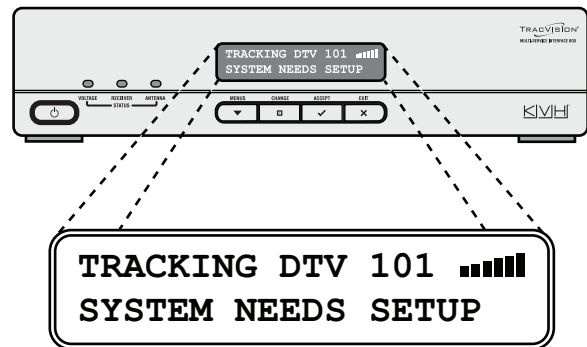


Figure 18 System Needs Setup Screen



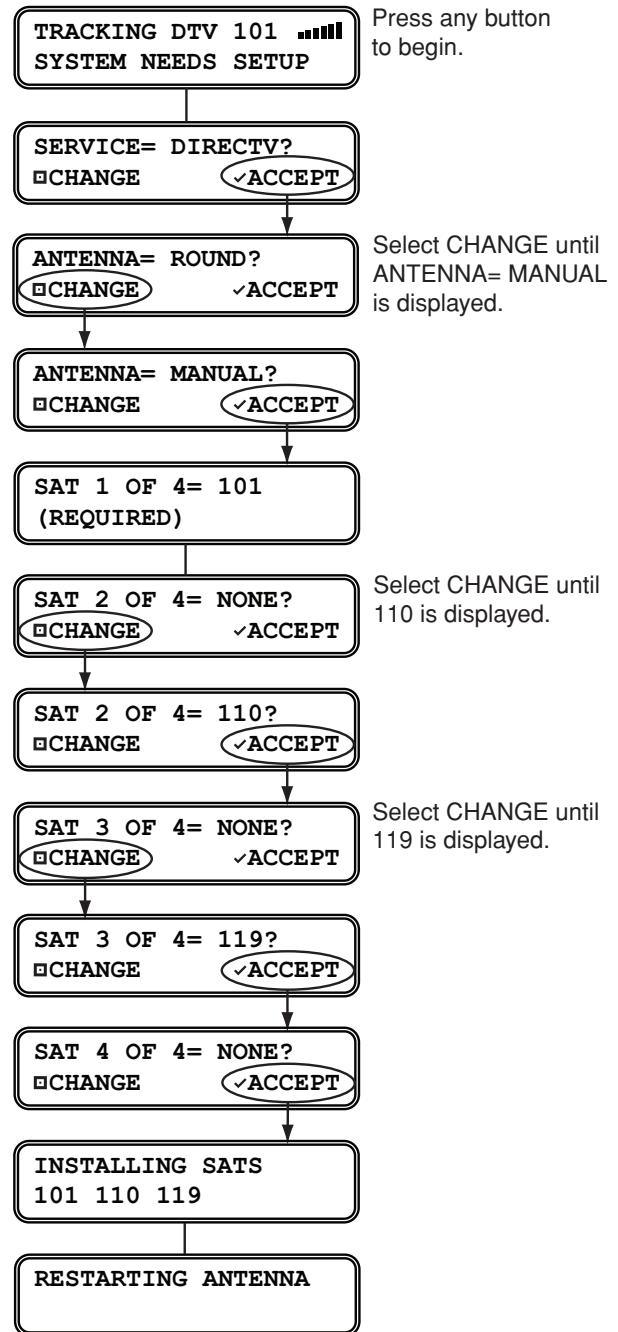
11 Set Up the System

Now that you have verified the antenna works properly, you need to use the front panel of the interface box to set up the system.

Use the flowchart in [Figure 19](#) to set up a standard DIRECTV HDTV configuration (with DIRECTV HDTV Tri-Sat AutoSwitch Kit installed).

NOTE: For setup information on DISH Network and ExpressVu configurations, follow the step-by-step instructions provided in the TracVision R6DX User's Guide.

Figure 19 Standard DIRECTV HDTV Setup



12 Educate the Customer

Be sure to give the manuals to the customer and explain how to use the product. The customer also needs to know the following:

- Keep the radome installed on the antenna at all times. The radome protects the antenna's internal moving parts from wind, rain, and debris.
- The receiver must be activated before it can receive satellite programming.
- The antenna must have a clear view of the southern sky to receive satellite TV. Common causes of blockage are trees, buildings, bridges, overpasses, and mountains. The TracVision R6DX system will not work inside a garage.
- Heavy rain or snow might temporarily interrupt reception.
- To ensure optimum reception, keep DewShield™ set to AUTO. The DewShield electronic dew elimination system prevents dew from forming on the antenna (moisture weakens satellite signals).
- The antenna should be cleaned regularly. Dirt buildup on the radome can affect satellite TV reception.
- The owner needs to register the system for product warranty validation. Refer to the Product Registration Form for details or visit: www.kvh.com/register.
- The vehicle must be located within the selected satellite's coverage area in order to receive its satellite TV signals. To view satellite coverage maps, visit: www.kvh.com/footprint.
- Refer to the *TracVision R6DX User's Guide* for complete operation instructions.

Figure 20 Blockage Example

