



TracVision® M1 with 12V DIRECTV® Mobile Receiver



TracVision® M1 Installation Guide

TracVision M1 Installation Guide

DIRECTV® Mobile Receiver Configuration

These instructions explain how to install the TracVision M1 satellite TV antenna system on a vessel. Complete instructions on how to use the system are provided in the *User's Guide*.

Installation Steps

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Who Should Install the System?

To ensure a safe and effective installation, KVH recommends that a KVH-authorized marine technician install the TracVision M1 antenna. To find a technician near you, please visit www.kvh.com/wheretogetservice.

Related Documentation

The following additional documents are provided with the TracVision M1 system:

<u>Document</u>	<u>Description</u>
User's Guide	Complete operation, setup, and troubleshooting information
Quick Start Guide	Handy quick reference to basic operation 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

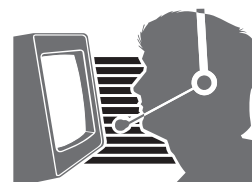
Technical Support

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

Phone: +1 401 847-3327

E-mail: techs@kvh.com

(Mon.-Fri., 9 am-6 pm ET, Sat., 9 am-2 pm ET)



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1 Inspect Parts and Get Tools

Before you begin, follow these steps to make sure you have everything you need to complete the installation.

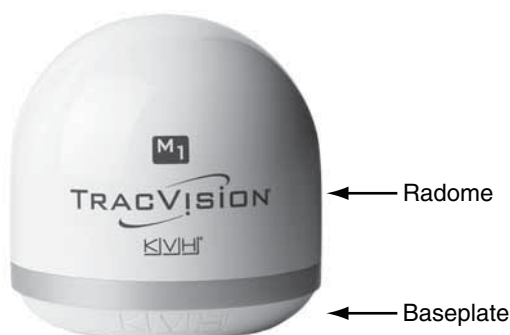
IMPORTANT!

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

- a. Unpack the box and ensure it contains everything shown on the *Kitpack Contents List*. Save the packaging for future use.
- 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.
 - #2 Phillips screwdriver
 - 7/16" open-end wrench
 - 3/8" socket or open-end wrench
 - Electric drill and 1/4" (6 mm) bit
 - Hole saw of desired diameter (for cable access hole, see [page 5](#))
 - Silicone sealant or equivalent
 - Adhesive tape
 - Light hammer
 - Center punch
 - Eight 1/4" fasteners (see "Mount the Receiver" on page 11)
- d. Peel off the extra serial number label (taped to the antenna) and affix it in the appropriate box on the red Activation Card (see Figure 2).

Figure 1: TracVision M1 System Components

Antenna



Mobile Receiver/Controller



Figure 2: Activation Card

TracVision® Activation

Before you can start enjoying satellite TV, the TracVision receiver **must be activated**. To activate, please follow the steps below.

- Call KVH's Activation Department at:
1-866-551-8004 (24 hours a day, 7 days a week)
You will need to provide the Activation Department with a credit card number and the following KVH serial numbers:
Receiver Serial Number Antenna Serial Number
(If purchased as part of a complete antenna system)

R

xxxxxxx

A

xxxxxxx

Installer: Please place antenna serial # in box above.
- The KVH representative will provide you with five ID numbers necessary for activation. Enter these in the boxes below. **You will need these numbers whenever you call DIRECTV.**
Access Card Number Receiver ID Number

DIRECTV® Serial Number Model Number

DIRECTV® Account Number
- If you have a marine TracVision system, the KVH representative will also give you a Location ID. Enter this number here and follow the instructions provided by the KVH representative.
Location ID (Marine systems only)

Please **save** this card for future reference.

54-0208-04 (rev. J)

Affix Serial Number Here

2

Plan the Installation

Before you begin, consider the following installation guidelines:

- Minimize blockage. The antenna requires a clear view of the sky to receive satellite TV (see Figure 3). The fewer obstructions, the better the system will perform.
- Make sure the mounting surface is wide enough to accommodate the antenna's base (see Figure 4). Also make sure it is flat, level (within $\pm 2^\circ$), strong enough to support the antenna's weight (7.5 lbs), and rigid enough to withstand vibration.
- Custom mounting solutions, including struts and masts, are available from several third-party manufacturers. Contact your local KVH dealer or distributor for details.
- KVH recommends that you do not mount the antenna on the same level as the radar, because the radar's energy might overload the antenna.
- Be sure to mount the antenna near enough to the supplied receiver belowdecks to allow you to connect the 50-ft. (15 m) coaxial cable between the antenna and the receiver, while still maintaining sufficient slack in the cable.

IMPORTANT!

Do not shorten or extend the antenna cable. Since the cable carries data, power, and communications, the integrity of this cable and its connections is very important.

- When choosing a location for the receiver, find a dry, well-ventilated area belowdecks away from any heat sources or salt spray. Also be sure the receiver's front panel will be easily accessible to the user.

Figure 3: Blockage from Obstruction

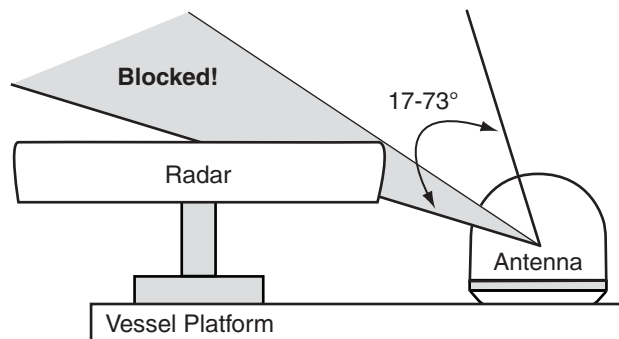
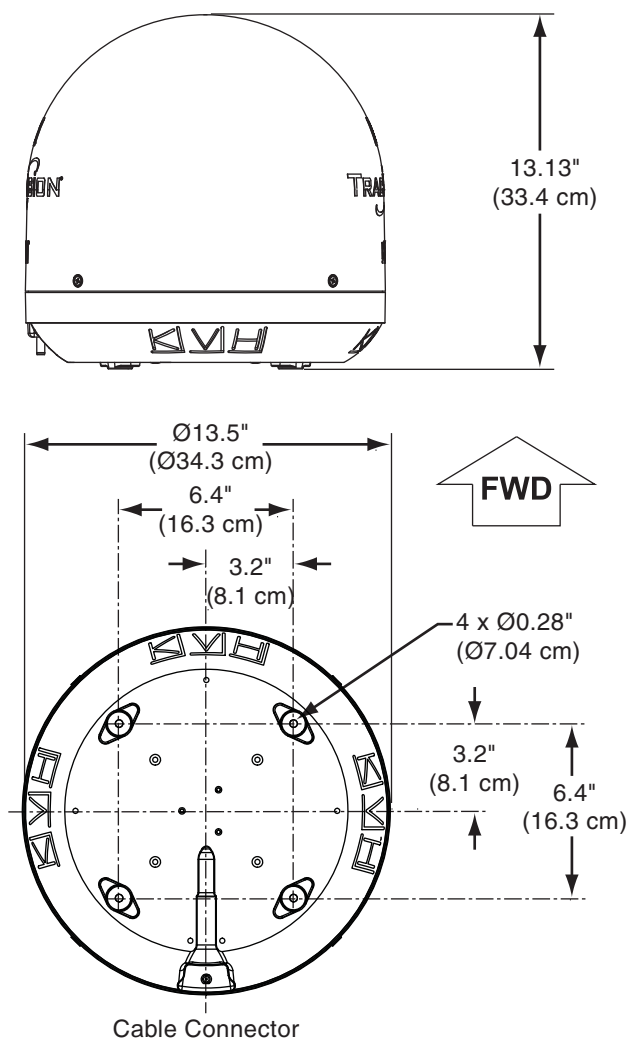


Figure 4: Antenna Dimensions



3

- a.** Unfold the antenna mounting template (supplied in the Customer Welcome Kit) and place it onto the mounting surface. Make sure the “FWD” (forward) arrow points toward the bow and is parallel to the vessel’s centerline (see Figure 5 and Figure 6). *You don’t need to mount the antenna exactly on the centerline (the closer, the better), but the antenna’s forward arrow must be parallel to it.*
- b.** Mark the locations for the four mounting holes on the mounting surface in the locations indicated on the template.

The diameter of the cable access hole must not exceed 3.5" (89 mm) to maintain the integrity of the foam seal.

- g. Clean and dry the antenna mounting surface.
- h. Peel off the paper backing from the supplied foam seal to expose the adhesive. Then press the foam seal down firmly onto the mounting surface, surrounding the guides and centered between the mounting holes (see Figure 7).

Antenna Base

13.5" (34.3 cm)

Recommended Cable Access Hole $\varnothing 1.0"$ ($\varnothing 2.5$ cm)

4 x Seal Guides

Maximum Cable Access Hole $\varnothing 3.5"$ ($\varnothing 8.9$ cm)

4 x $\varnothing 0.25"$ ($\varnothing 0.6$ cm) Mounting Holes

3.2" (8.1 cm)

1.75" (4.4 cm)

1.25" (3.2 cm)

6.4" (16.3 cm)

6.4" (16.3 cm)

3.2" (8.1 cm)

FWD

The diagram illustrates the Bow Mounting Template, a circular device used for mounting a cable. It features four mounting holes (x4) at the corners, four guides (x4) along the inner edge, a foam seal, and a cable access hole. The template is shown with a dashed line indicating the mounting area and a solid line indicating the mounting holes.

4 Wire the Antenna

Follow these steps to connect the antenna cable to the antenna.

- a. First attach the four rubber mounting feet (supplied in the kitpack) to the bottom of the antenna at the locations shown in Figure 8.

IMPORTANT!

Be sure to install the rubber feet. They are required to isolate the antenna from vibration.

- b. Route the antenna cable belowdecks through the cable access hole.

If you are routing the cable underneath the antenna (normal installation):

Keep the end of the cable with the right-angle connector and rubber sealing boot at the antenna site. You may remove the straight rubber boot at the opposite end of the cable for easier cable routing, if necessary.

If you are routing the cable straight down from the connector (alternate installation):

Keep the straight connector and rubber sealing boot at the antenna site.

- c. Connect the cable to the antenna. Hand-tighten, then tighten with a 7/16" wrench for 1/4 turn to ensure an electrical and weather-proof connection (see Figure 9).
- d. Position the rubber boot over the connector to help protect the connector from the elements (see Figure 10).
- e. Leave an adequate service loop, approximately 8" (20 cm) of slack, in the antenna cable for easy serviceability.
- f. Weatherproof and seal the cable access hole as required.

IMPORTANT!

Be sure to seal the cable access hole to prevent water from leaking into the vessel.

Figure 8: Attaching the Rubber Feet

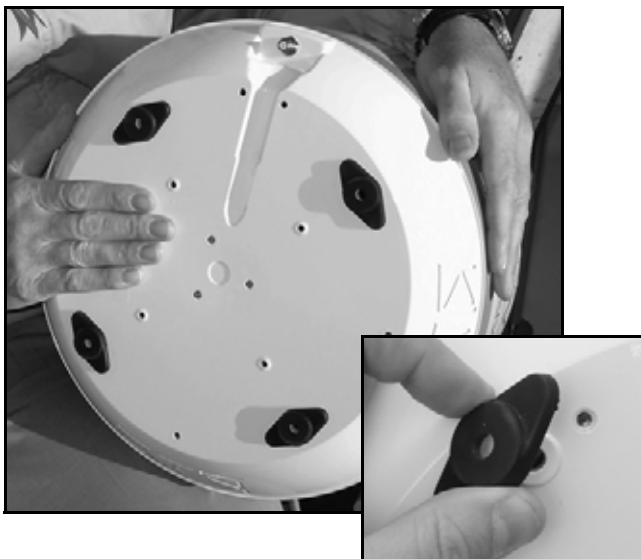


Figure 9: Connecting the Antenna Cable

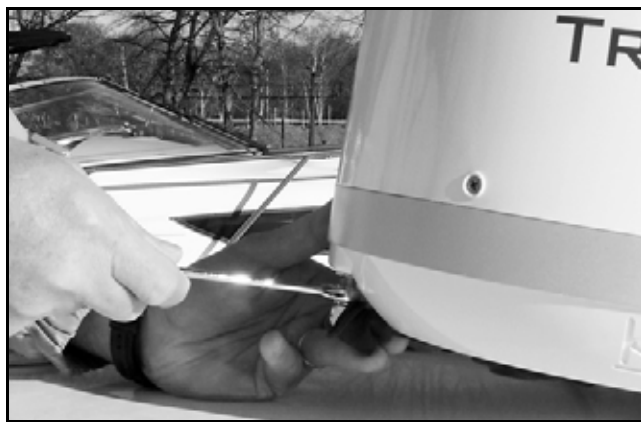


Figure 10: Protecting the Connector with the Rubber Boot



5 Remove the Shipping Restraint

Follow these steps to remove the shipping restraint, which prevents the internal antenna assembly from moving during shipment.

- a. Remove the four #8-32 screws securing the radome to the antenna (see Figure 11).
- b. Carefully lift the radome straight up until clear of the antenna assembly and set it aside in a safe place (see Figure 12).
- c. Using cutting pliers, cut and remove the tie-wrap securing the antenna assembly to the baseplate (see Figure 13).
- d. Position the antenna onto the mounting surface. The antenna's base should rest squarely atop the foam seal.

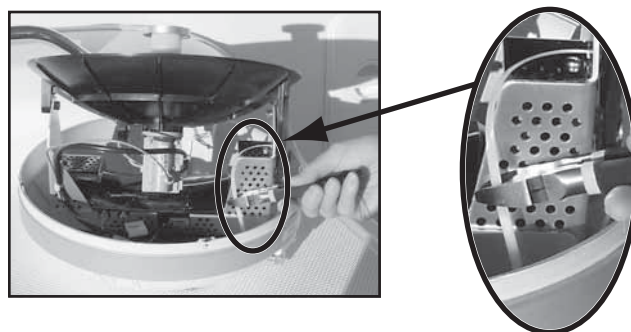
Figure 11: Removing the Radome Screws



Figure 12: Removing the Radome



Figure 13: Removing the Shipping Restraint



6 Mount the Antenna

Follow these steps to mount the antenna to the mounting surface.

- a. Place the antenna baseplate over the holes drilled in the mounting surface. Ensure the "Forward" arrows inside the baseplate point toward the bow and are parallel to the vessel's centerline (see Figure 14).

IMPORTANT!

Be sure to insert the mounting bolts from above and use the supplied hardware for a secure installation.

- b. Secure the antenna's baseplate to the mounting surface using four #10-32 Phillips screws, 0.43" flat washers, 0.75" flat washers, and lock nuts, as shown in Figure 15 and Figure 16.

IMPORTANT!

Use only manual hand tools to tighten the mounting screws. The torque from a power tool might warp the antenna baseplate.

- c. Using hand tools, tighten the bolts until the foam seal is compressed and the antenna's four rubber feet are bottomed against the mounting surface.
- d. Reinstall the radome onto the antenna. The radome's "TracVision" labels should face fore and aft. Secure the radome to the base using the four #8-32 screws you removed earlier.

Figure 14: Aligning the "Forward" Arrows

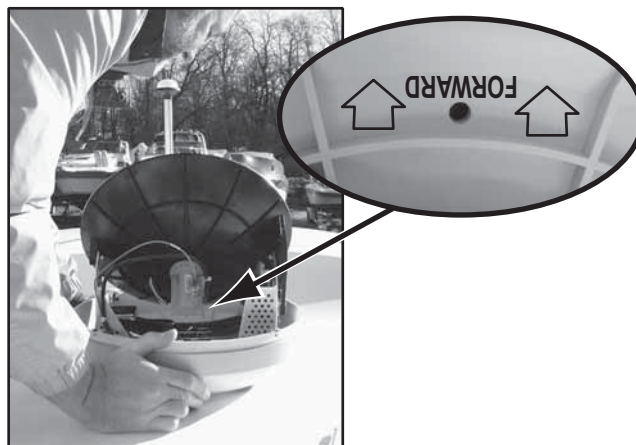
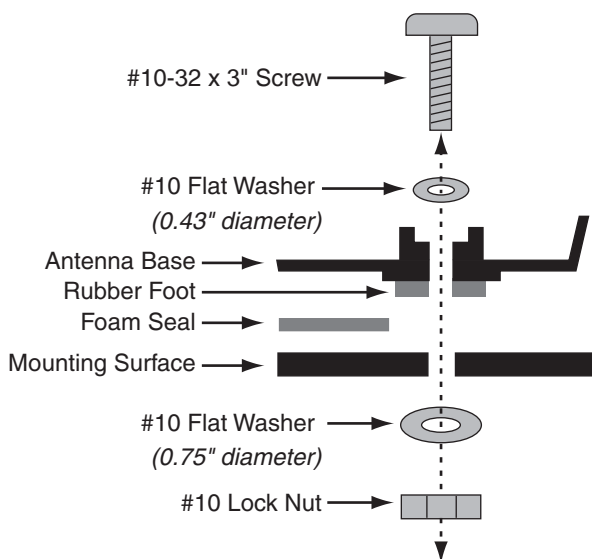


Figure 15: Tightening the Mounting Bolts from Above



Figure 16: Mounting Hardware



7 Wire the Receiver

Follow these steps to connect system cables to the receiver.

IMPORTANT!

Do not shorten or extend the antenna cable. Since the cable carries data, power, and communications, the integrity of this cable and its connections is very important.

IMPORTANT!

Be sure to route cables within the vessel appropriately to avoid damage. For example, do not route any cables through wet areas (bilges) or near hot exhaust pipes. Also be sure you do not kink the cable; maintain a bend radius of at least 3" (75 mm).

- Connect the antenna cable (A) to the "To KVH Antenna" jack (see Figure 17).
- Connect the RF converter cable (B) to the "RF Remote Input" jack.
- Connect the receiver to the TV's video input. Choose one of the following options:

Option 1 - RCA-type jack (cable included)

Option 2 - S-Video jack

NOTE: If the TV has only a coaxial input, you will need an RF modulator (KVH part #72-0292).

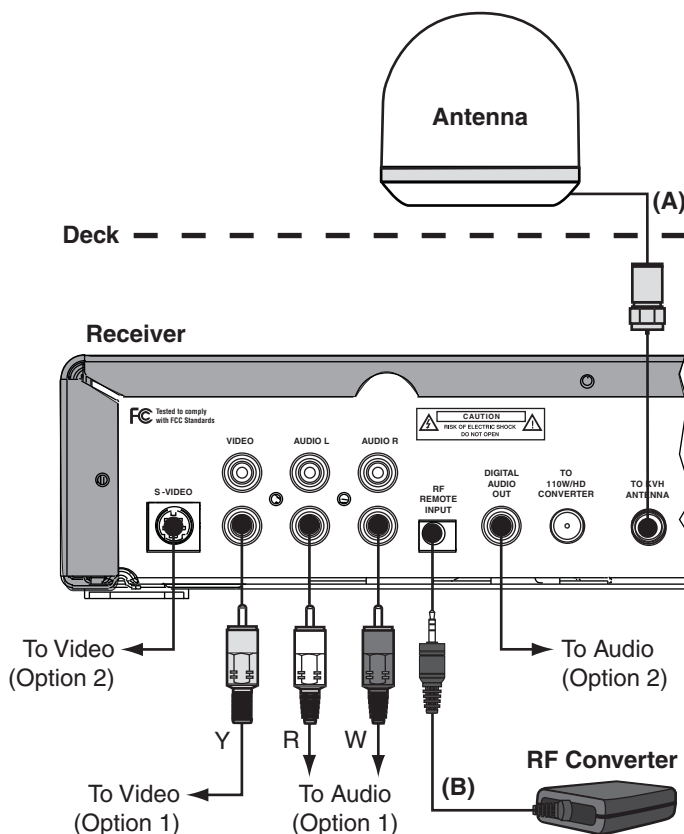
- Connect the receiver to the TV's audio input. Choose one of the following options:

Option 1 - RCA-type jacks (cables included)

Option 2 - Digital audio jack

NOTE: For details on connecting additional receivers, refer to Appendix A of the User's Guide.

Figure 17: Wiring the Receiver



8 Connect Power

The receiver requires 10-16 VDC power input supporting 50 watts (*4.2 amps @ 12 VDC*). Follow these steps to connect power to the receiver.



CAUTION

For your own safety, disconnect vessel power and make sure the circuit is dead before you connect any power wires.

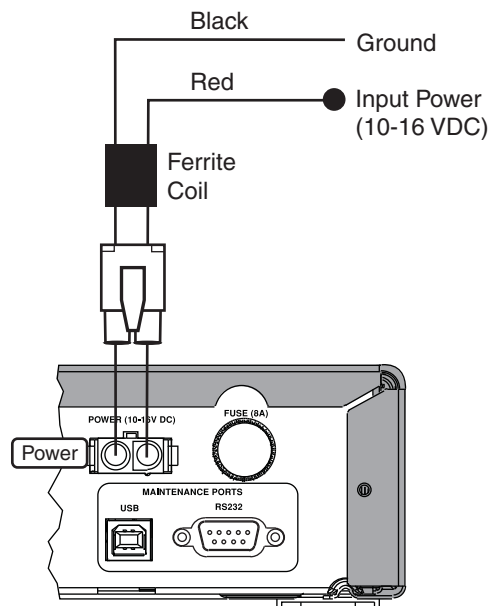
- a. Before you connect the power wires, turn off vessel power and test the circuit to ensure no power is present.
- b. Connect the individual power wires to a dedicated 10-amp or 15-amp circuit breaker. Connect the negative (black) wire to ground (power return), and connect the positive (red) wire to +12 VDC vessel power.

NOTE: As an alternative, you may use an AC/DC power supply (KVH part #72-0206-01) to supply power to the receiver.

- c. Plug the other end of the wires into the “Power” jack on the rear panel of the receiver (see Figure 18).

NOTE: Do not remove the small ferrite coil that is clamped onto the power wires. This coil suppresses EMI (electromagnetic interference) from the receiver.

Figure 18: Receiver Power Wiring



9 Mount the Receiver

Once all cables are connected, follow these steps to install the receiver inside the vessel.

- 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 19).

IMPORTANT!

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

- 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.

- c. Place the RF converter at least 3 feet away from the receiver (see Figure 20). If it is too close to the receiver, the remote control might not operate properly. Also avoid placing the RF converter behind a metal surface or in an area surrounded by metal.
- d. If desired, mount the RF converter using the supplied Velcro fasteners.
- e. Insert two AAA batteries (supplied in the kitpack) in the remote control's battery compartment (see Figure 21).

Figure 19: Receiver Mounting

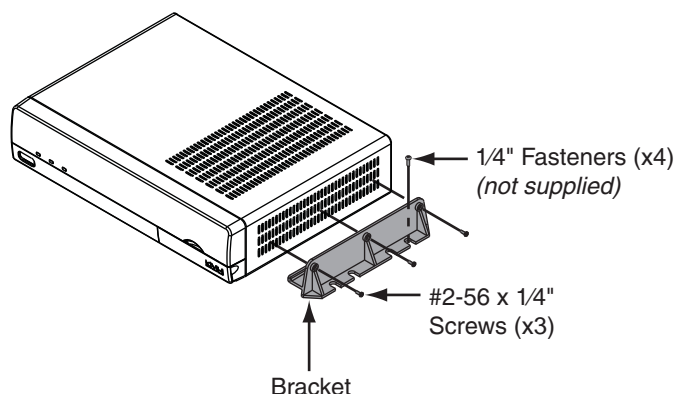
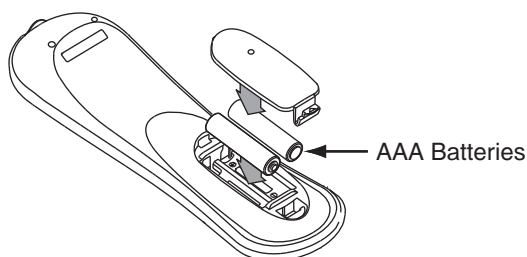


Figure 20: RF Converter



Figure 21: Remote Control Batteries



10 Test the System

Now that you have installed the system, follow these steps to turn the system on and verify that the antenna works properly.

- a. Ensure the antenna has a clear view of the sky.
- b. Apply power to the TV and the TracVision system.
- c. Turn on the power switch on the front of the receiver (see Figure 22).
- d. Wait while the antenna searches the sky for the DIRECTV satellite. Within a few minutes, all three status lights on the front of the receiver should be lit green (see Figure 22). If all three status lights are not lit green, refer to the *User's Guide* for troubleshooting information.
- e. Wait one minute for the receiver to download the program guide. A progress bar will appear on the TV. (see Figure 23).
- f. Once the program guide is loaded, verify that you can view the DIRECTV preview channel (channel 100).

Figure 22: Receiver Power Switch and Status Lights

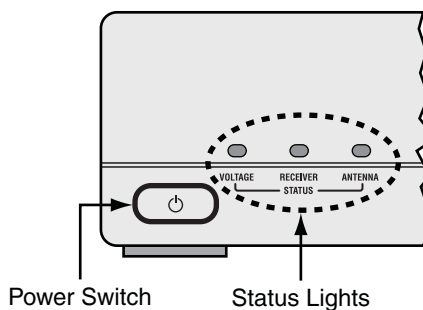
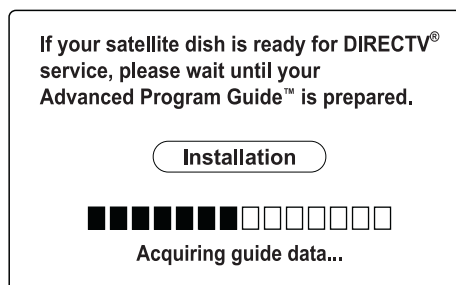



Figure 23: Program Guide Progress Bar



11 Educate the Customer

Before you leave the vessel, give the Customer Welcome Kit, the red Activation Card, and all manuals to the customer and explain how to use the system. Also be sure the customer understands the following:

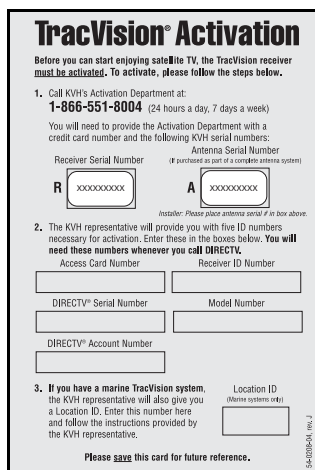
- Keep the radome installed on the antenna at all times. The radome protects the antenna's moving parts from wind, rain, and debris.

**CAUTION**

In the unlikely event that you need to remove the radome, remove power from the antenna first because the antenna's moving parts can cause injury.

- The receiver must be activated first before it can decode satellite TV signals. Refer to the red Activation Card for details (see Figure 24).
- The antenna must have a clear view of the sky to receive satellite TV. Common causes of blockage include trees, buildings, bridges, and onboard equipment (see Figure 25). Heavy rain or snow might also temporarily interrupt reception.
- Clean the antenna regularly. Dirt buildup on the radome can affect satellite TV reception.
- Please register the 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 for details.
- The vessel must be located within the selected satellite's coverage area. To view satellite coverage maps, visit: www.kvh.com/footprint.
- Refer to the *User's Guide* for complete operation and troubleshooting information.

Figure 24: Activation Card



TracVision® Activation

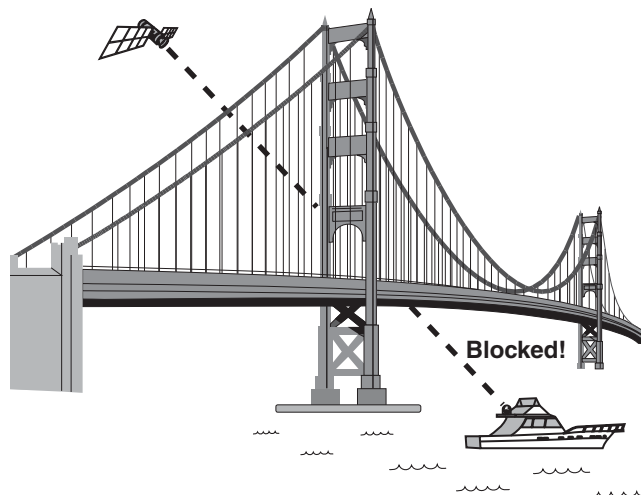
Before you can start enjoying satellite TV, the TracVision receiver must be activated. To activate, please follow the steps below.

1. Call KVH's Activation Department at:
1-866-551-8004 (24 hours a day, 7 days a week)
You will need to provide the Activation Department with a credit card number and the following KVH serial numbers:
Receiver Serial Number: R xxxxxxxxxx
Antenna Serial Number: A xxxxxxxxxx
(If purchased as part of a complete antenna system)
Installer: Please place antenna serial # in box above.
2. The KVH representative will provide you with five ID numbers necessary for activation. Enter these in the boxes below. **You will need these numbers whenever you call DIRECTV.**
Access Card Number: Receiver ID Number:
DIRECTV® Serial Number: Model Number:
DIRECTV® Account Number:
3. If you have a marine TracVision system, the KVH representative will also give you a Location ID. Enter this number here and follow the instructions provided by the KVH representative.
Location ID (marine systems only):

Please save this card for future reference.

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Figure 25: Blockage Example





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