Tri-Americas™ LNB Installation

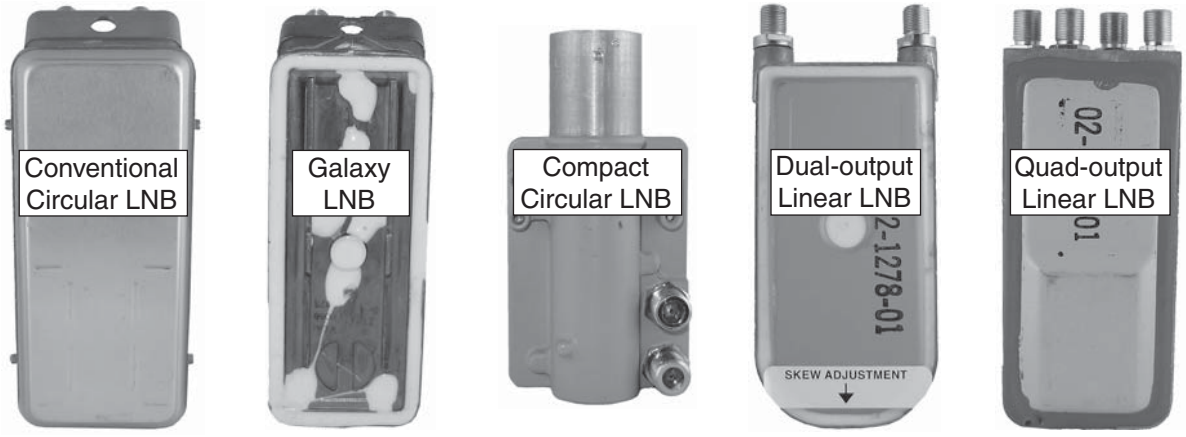
TracVision M7 Configuration

These instructions explain how to install the Tri-Americas LNB in your TracVision® system. With the Tri-Americas LNB, you no longer need to climb up to the antenna and change the LNB when you travel between North America, the Caribbean, Central America, and South America.

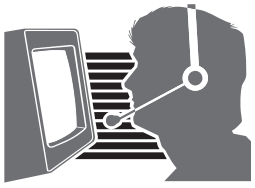
Depending on the LNB currently installed in the antenna, you might need to bypass the inverter PCB. Follow the guidelines below.

Steps Required

Currently Installed LNB:	Perform Steps:
• Conventional Circular • Galaxy	1. Initial Steps (page 3) 2. Bypass the Inverter PCB (page 4) 3. Install the Tri-Americas LNB (page 7) 4. Install the Tone Generators (page 10)
• Compact Circular • Linear Dual-output • Linear Quad-output	1. Initial Steps (page 3) 2. Install the Tri-Americas LNB (page 7) 3. Install the Tone Generators (page 10)



Technical Support



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54-0622-02 Rev. B

Initial Steps

Follow these steps to begin the LNB installation.

IMPORTANT!

If your TracVision antenna has a serial number earlier than **090500117**, you should have received a PCB upgrade kit in addition to this Tri-Americas LNB kit. Follow the instructions in the PCB upgrade kit first, before installing the Tri-Americas LNB. If you did not receive a PCB upgrade kit, please contact the KVH Sales Team at 401-847-3327.

a. Gather all of the tools listed below. You will need these tools to complete the process.

- #2 Phillips screwdriver
- 2 mm allen hex key
- Wire cutters
- 7/16" open-end wrench

CAUTION

For your own safety, disconnect power from all system components before you start working on the antenna.

b. Disconnect power from all system components, including the receiver(s).

c. Using a #2 Phillips screwdriver, remove the six #10-32 screws securing the radome to the antenna's baseplate (see Figure 1). Remove the radome and set it aside in a safe place.

d. Cut and remove the tie-wrap securing the RF cables to the LNB (see Figure 2).

IMPORTANT!

Avoid causing sharp bends in cables when securing or routing cables. Sharp bends or kinks can degrade antenna performance.

IMPORTANT!

Trim the excess portion of any tie-wraps you install and collect all tie-wrap trimmings to avoid damage when the antenna rotates.

Figure 1: Removing the Radome

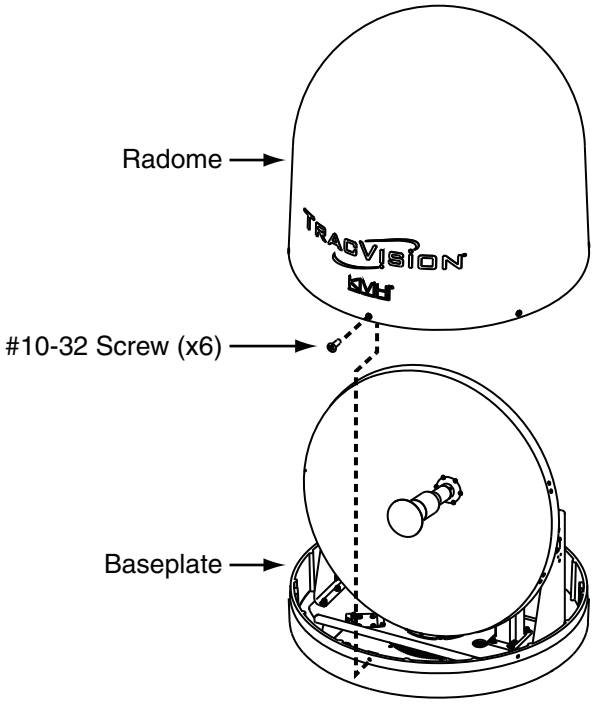
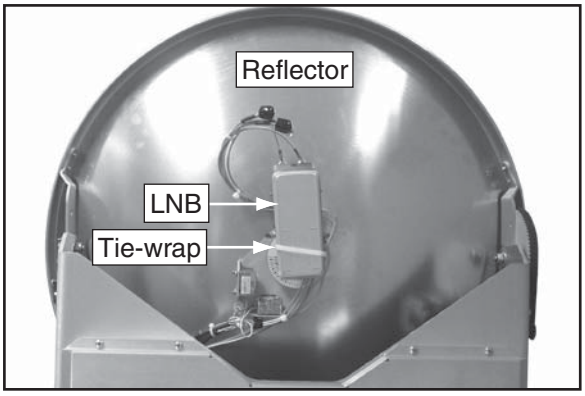


Figure 2: Tie-wrap Securing RF Cables to the LNB



Bypassing the Inverter PCB

If your TracVision system is currently equipped with a **Galaxy** or **conventional circular LNB**, you must first bypass the inverter PCB (see Figure 3).

The following instructions explain how to bypass the inverter PCB.

a. Using a 7/16" open-end wrench, disconnect and remove the RF cable connecting the inverter PCB to the RF PCB (see Figure 4).

b. Disconnect the RF cable from the inverter PCB's "RF1 TO LNB" connector and connect it to the RF PCB's "TO LNB" connector (see Figure 5).

Figure 3: Location of Inverter PCB

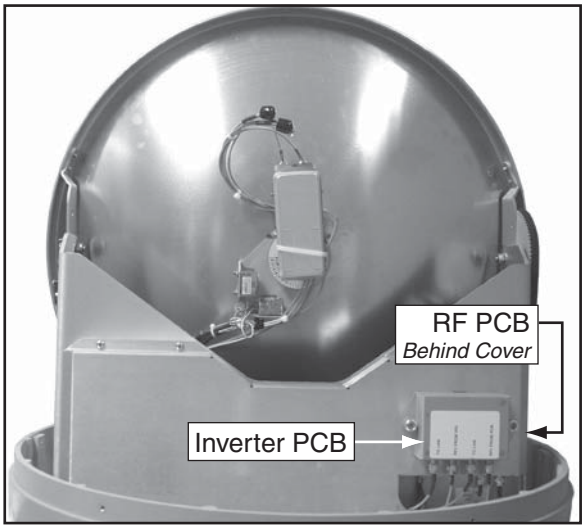


Figure 4: Cable Connecting the Inverter PCB to the RF PCB

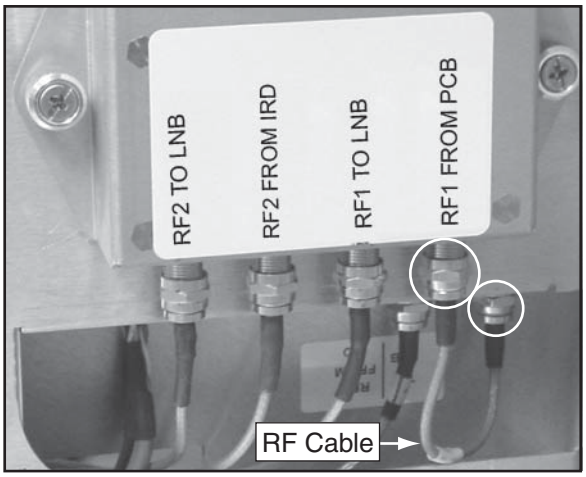
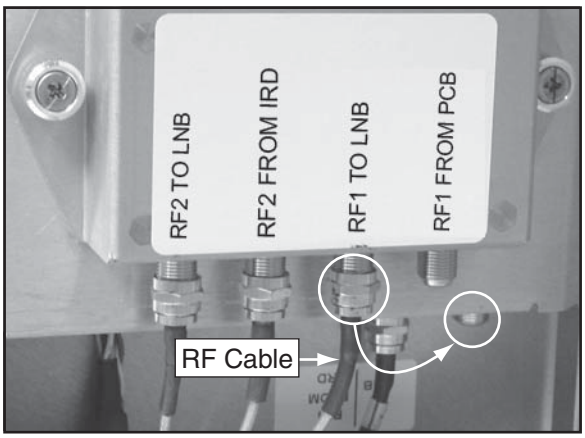


Figure 5: Moving the RF1 Cable



Continued Bypassing the Inverter PCB

c. Disconnect the RF cable from the inverter PCB's "RF2 FROM IRD" connector (see Figure 6).

d. Pass the end of the cable through the cable access hole and route it to the LNB (see Figure 6).

e. Apply an "RF2" label to the cable (see Figure 6).

f. Using five tie-wraps *(supplied in the kit)*, secure the "RF2"-labeled cable to the cable bundle at locations 1-5 shown in Figure 7. Don't cut the ends of the tie-wraps yet, so you can easily distinguish these new tie-wraps from the original tie-wraps.

g. Using wire cutters, cut and remove the original tie-wraps at locations 1-5 shown in Figure 7.

h. Cut the excess ends of the new tie-wraps. Be sure to collect the trimmings from the antenna.

Figure 6: "RF2 FROM IRD" Connector on Inverter PCB

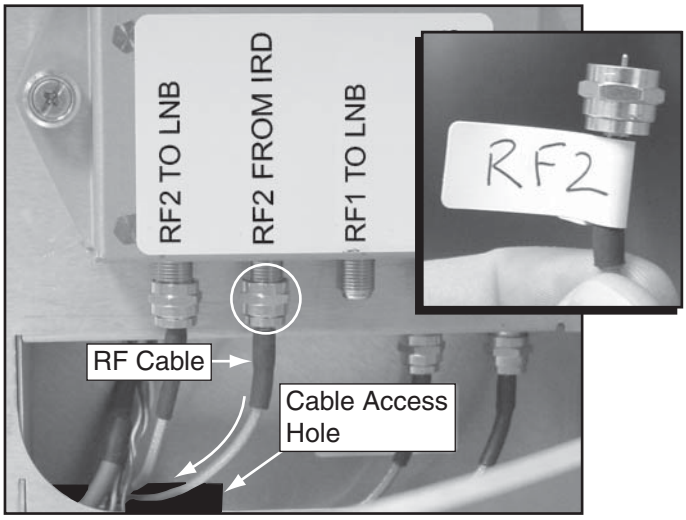
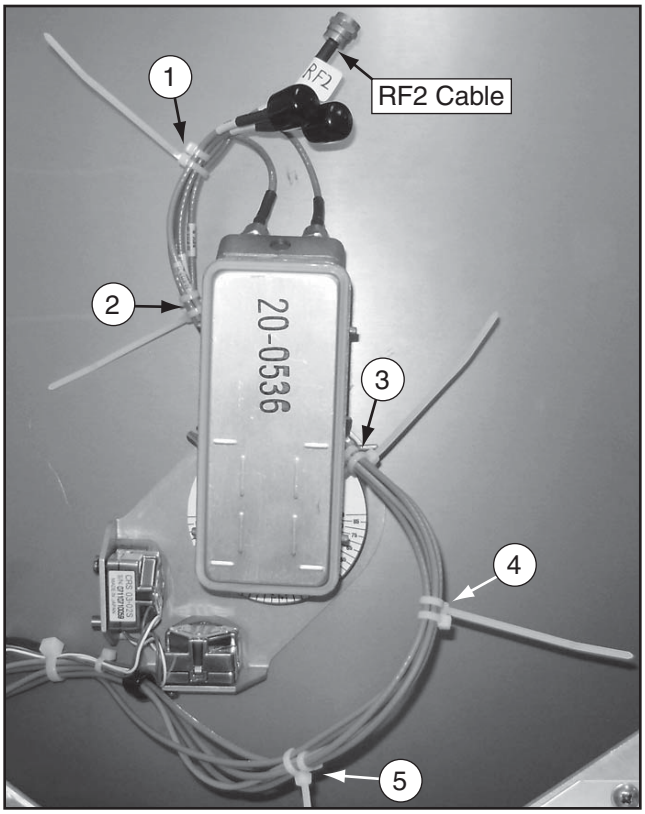


Figure 7: Cable Bundle Tie-wrap Locations



Continued Bypassing the Inverter PCB

i. Disconnect the RF cable from the LNB's RF2 connector (see Figure 8).

j. Attach a connector cap *(supplied in the kit)* onto the RF cable you disconnected from the LNB. Using a tie-wrap *(supplied in the kit)*, secure the cable to the cable bundle as shown in Figure 9.

NOTE: *Leave the other end of this cable connected to the inverter PCB's "RF2 TO LNB" connector.*

k. Apply an "RF1" label to the RF cable that is still connected to the LNB (see Figure 10).

l. Connect the "RF2"-labeled cable (from step f) to the LNB (see Figure 10).

Figure 8: RF2 Connector on LNB

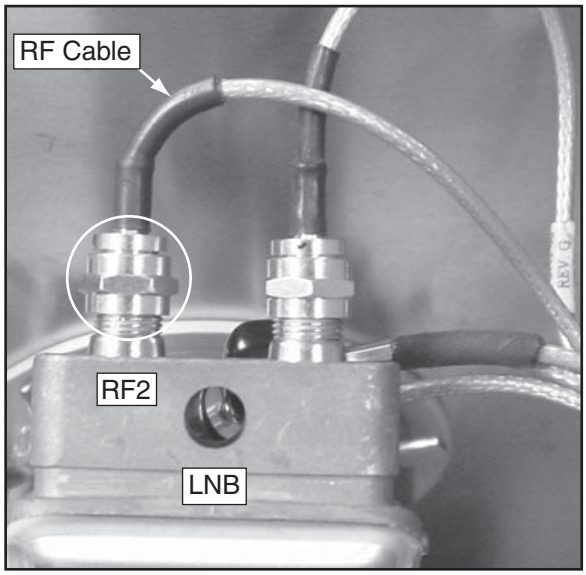


Figure 9: Storage Location for Unused RF2 Cable

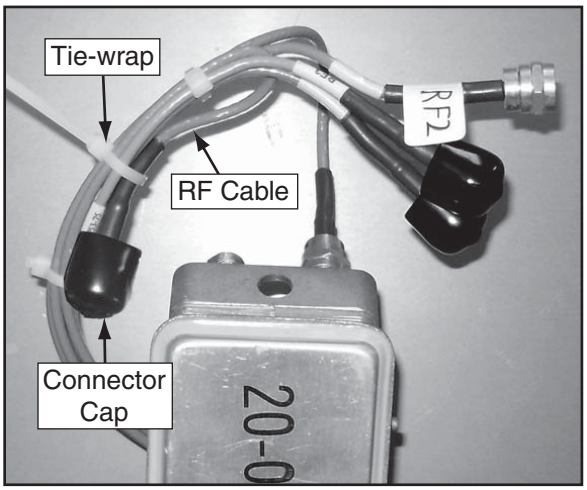
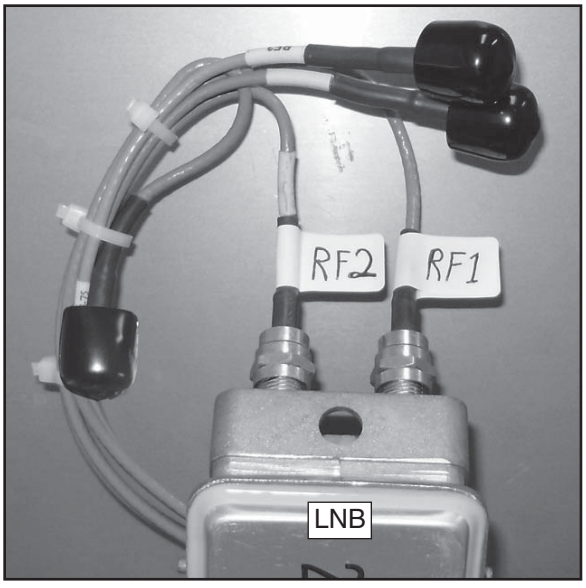


Figure 10: RF Connectors on Old LNB



Installing the Tri-Americas LNB

Follow these steps to disconnect and remove the old LNB and install the new Tri-Americas LNB in its place.

a. Check the RF cables that are connected to the current LNB. Make sure the cables are labeled as shown in the associated figure (Figure 11 through Figure 15). Label the cables as necessary.

b. Disconnect the RF cables from the current LNB.

Figure 11: Linear Dual-output LNB

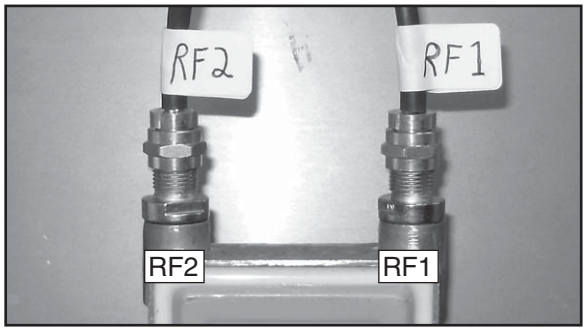


Figure 12: Linear Quad-output LNB

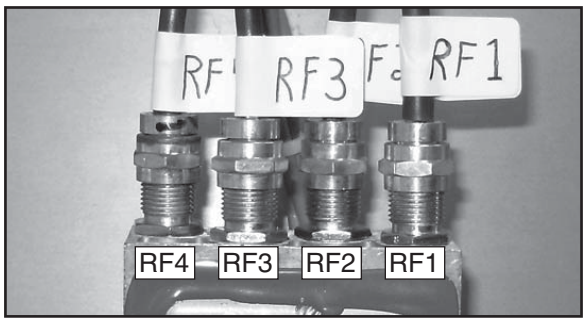


Figure 13: Compact Circular LNB

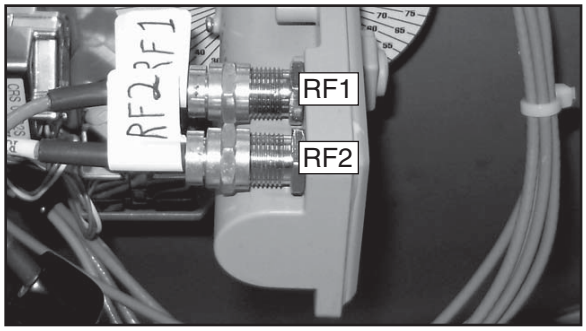


Figure 14: Conventional Circular LNB

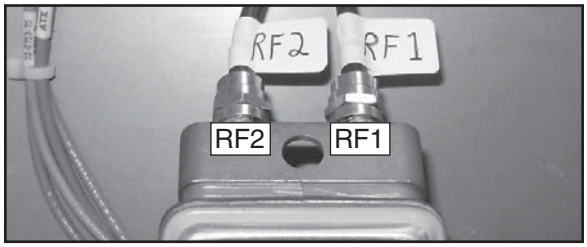
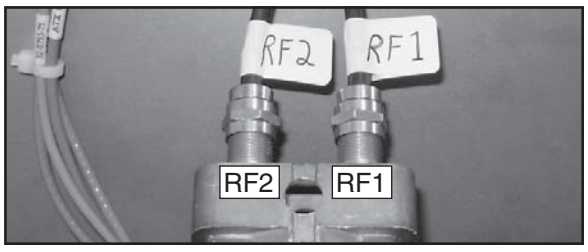


Figure 15: Galaxy LNB



Continued Installing the Tri-Americas LNB

c. Connect the RF1 and RF2 cables to their corresponding connectors on the Tri-Americas LNB (Figure 16).

d. **If you are replacing a linear quad-output LNB**, apply rubber caps over the connectors of the unused RF3 and RF4 cables to protect their center conductors (see Figure 16).

e. **If the antenna has a serial number later than 080201076:** Using a 2 mm allen hex key, loosen the two M4 socket set screws securing the current LNB to the reflector (see Figure 17).

If your antenna has a serial number earlier than 080201077, loosen the two wing screws securing the current LNB to the reflector (see Figure 18).

f. Remove the old LNB.

g. Insert the new Tri-Americas LNB fully into the choke feed with the connectors aligned to the left, as shown in Figure 19 on page 9.

IMPORTANT!

Orient the Tri-Americas LNB so that its RF cable connectors are pointing 90° to the left. The LNB must be positioned in this manner to ensure proper operation.

h. **If the antenna has a serial number later than 080201076:** Tighten the two M4 socket set screws to secure the LNB in place. Apply 9 in-lbs (1 Nm) of torque, if possible.

If your antenna has a serial number earlier than 080201077: Tighten the wing screws to secure the LNB in place.

Figure 16: Tri-Americas LNB RF Connectors

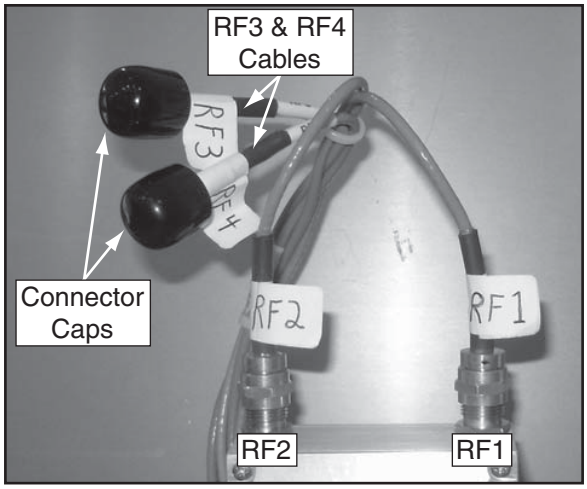


Figure 17: LNB Retaining Screws, Newer Antenna

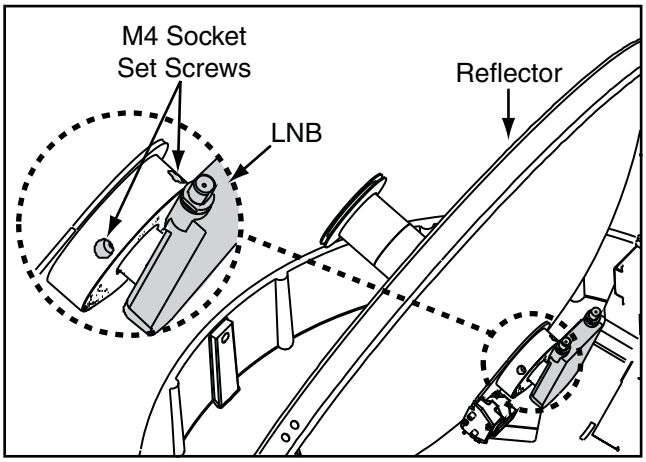
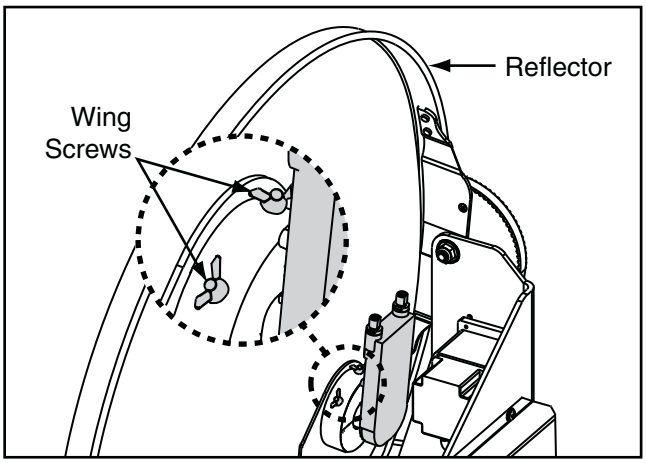


Figure 18: LNB Retaining Screws, Older Antenna

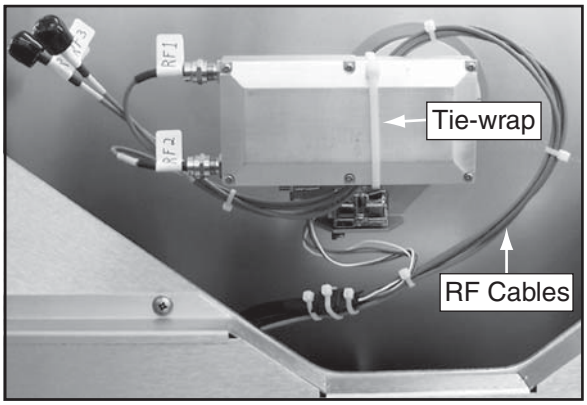


Continued Installing the Tri-Americas LNB

i. Using a tie-wrap *(supplied in the kit)*, secure the RF cables to the LNB to prevent them from getting snagged when the antenna is in motion (see Figure 19).

j. Reattach the radome (see Figure 1 on page 3).

Figure 19: Securing RF Cables to the LNB



Installing the Tone Generators

One or Two Receivers

Two 22KHz tone generators are supplied in the kitpack. Install these devices in-line with the antenna's RF cables as explained below. **If a multiswitch is installed, skip to page 11.**

a. Disconnect the RF1 cable from the primary receiver's "Satellite In" connector.

b. Connect the RF1 cable to the 22KHz tone generator's "LNB" connector.

c. Connect a supplied RG-179 RF cable from the 22KHz tone generator's "REC" connector to the primary receiver's "Satellite In" connector.

d. If you have a second receiver installed, repeat steps a-c to install the second 22KHz tone generator between the secondary receiver and the RF2 cable.

e. Set the 22KHz tone generator's "22KHz OFF/ON" switch to the proper position for the satellite TV service you wish to receive:

OFF = DIRECTV, DISH Network, ExpressVu

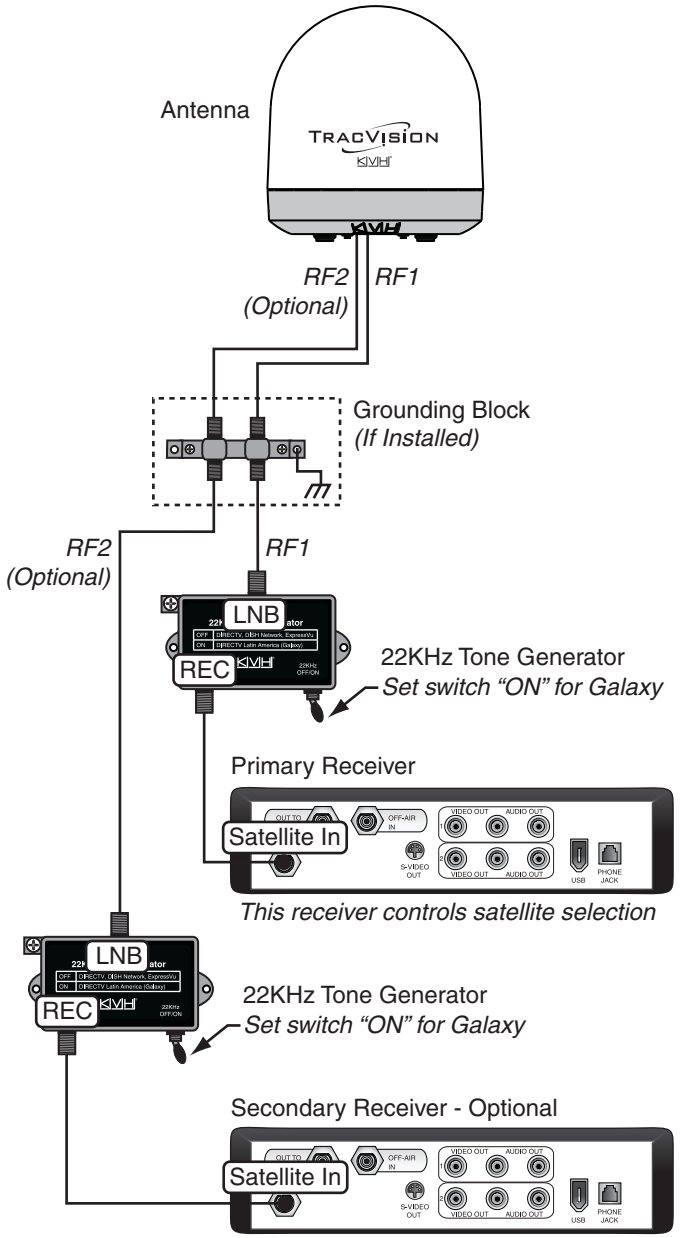
ON = DIRECTV Latin America (Galaxy)

If you have two receivers installed, set the switch on both 22KHz tone generators.

f. Reconnect power to the TracVision system components.

g. Turn on the TracVision antenna and configure it to track satellites that are compatible with the Tri-Americas LNB. These include DIRECTV, DISH Network (EchoStar), ExpressVu, or Galaxy. *Refer to the TracVision M5/M7 User's Guide for details.*

Figure 20: Tone Generator Wiring



Installing the Tone Generators

Three or More Receivers

If a multiswitch is installed, follow these steps to install the supplied 22KHz tone generators.

a. Disconnect the RF1 cable from the multiswitch's "13V" connector.

b. Connect the RF1 cable to the 22KHz tone generator's "LNB" connector.

c. Connect a supplied RG-179 RF cable from the 22KHz tone generator's "REC" connector to the multiswitch's "13V" connector.

d. Disconnect the RF2 cable from the multiswitch's "18V" connector.

e. Connect the RF2 cable to the second 22KHz tone generator's "LNB" connector.

f. Connect a supplied RG-179 RF cable from the second 22KHz tone generator's "REC" connector to the multiswitch's "18V" connector.

g. Set the "22KHz OFF/ON" switch on both 22KHz tone generators to the proper position for the satellite TV service you wish to receive:

OFF = DIRECTV, DISH Network, ExpressVu

ON = DIRECTV Latin America (Galaxy)

h. Reconnect power to the TracVision system components.

i. Turn on the TracVision antenna and configure it to track satellites that are compatible with the Tri-Americas LNB. These include DIRECTV, DISH Network (EchoStar), ExpressVu, or Galaxy. *Refer to the TracVision M5/M7 User's Guide for details.*

Figure 21: Tone Generator Wiring, Multiswitch Configuration