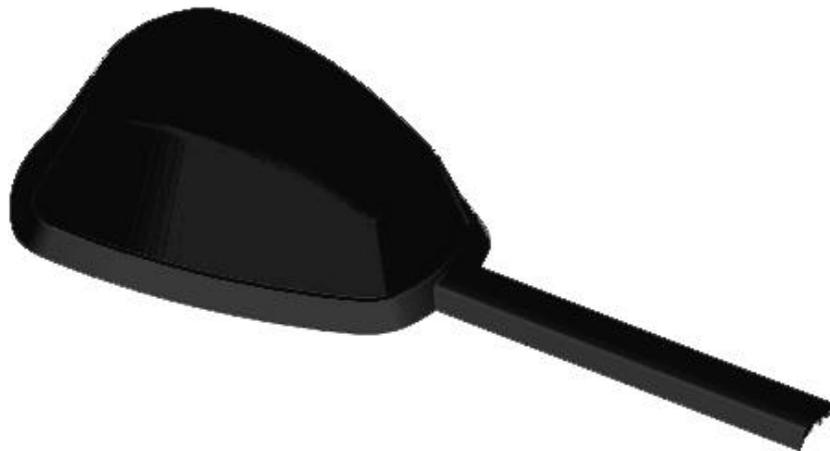




**Installation Guide  
For the  
Roof Mount Satellite Antenna for  
SIRIUS/AVX Based Receiver Unit**



**MODEL SRANT-RMSIR**

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# 1 Introduction

Your new Sirius satellite antenna, approved by Sirius Satellite Radio, Inc., has been specially designed to receive signals from Sirius’ three satellites and Sirius’ network of ground-based “repeater” transmitters.

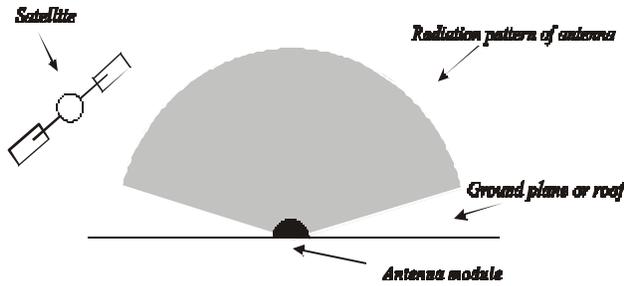


Figure 1: Ideal reception pattern

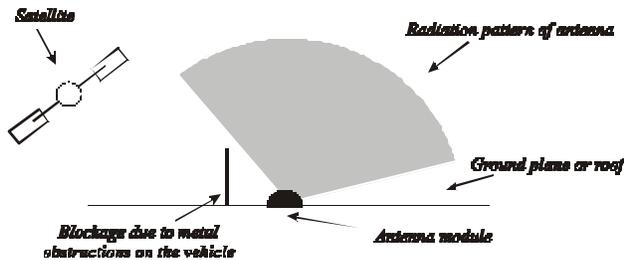


Figure 2: Effect of obstruction on reception pattern

# 2 Roof-Mount Antenna



Figure 3: Low Profile Roof-mount Sirius Antenna

## Mechanical data:

|            |   |
|------------|---|
| Shape      | “Beveled teardrop”                              |
| Color      | Black   |
| Dimensions | 95mm x 70mm x 38mm (approx)                     |
| Weight     | 150 grams (5.25oz) (excl. cables)               |
| Cables     | 4 meters (13 feet) micro low loss               |
| Connectors | 2 x FAKRA / SMB (keyed per specification)       |
| Mounting   | Acrylic foam adhesive pads                      |
| Cover      | Impact resistant glass filled nylon (paintable) |

## Electrical data:

|                       |  |
|-----------------------|--|
| Sirius                | Per specification Sirius RX000002-010300 |
| Peak Gain (SAT)       | 6 dBic                                   |
| 3 dB beam width (SAT) | 130 degree                               |
| 4 dB beam width (SAT) | 140 degree                               |
| Noise figure (SAT)    | 0.7 dB                                   |
| Peak Gain (Ter.)      | 6 dBi                                    |
| Noise figure (Ter.)   | 1.1 dB                                   |

## Environmental data:

|                                  |                  |
|----------------------------------|------------------|
| Functional operating temperature | -40 to +105 degC |
| Storage temperature              | -45 to +120 degC |
| Humidity                         | Power wash proof |

### 3 General Instructions

Satellite antennas are extremely sensitive and finely specified to facilitate reception of satellite signals under a variety of conditions across the whole of North America. It is important to read these “Instructions” carefully to ensure that the antenna is mounted properly in the best location in order to provide optimum reception quality.

#### 3.1 Mounting location

The satellite antenna should be mounted horizontally on a metal surface measuring at least 18 inches by 18 inches. The best reception quality is achieved at the highest point of the vehicle (i.e. the roof) but the trunk lid is an alternative location for convertibles and for some sedans.

It is important that the antenna has a clear “view” to the satellites and ground-based repeaters and should therefore be mounted in an unobstructed location (i.e. clear of roof racks, sunroofs, other antennas). Use the table below as a guide for the required distance (A) between the antenna placement and a possible obstruction with a height of (B).

| A   | B   |
|-----|-----|
| 12” | 4”  |
| 18” | 6”  |
| 24” | 8”  |
| 30” | 10” |

(Glass sunroofs, which open outwards and cover the rear roof area, should not affect the location of the antenna module).

#### 3.2 Installation temperature

Installation should be carried out when conditions are at room temperature or above. Firstly, colder temperatures could affect the curing time of the antenna module’s adhesive. Secondly, when mounting the antenna module on a sedan, it will be easier to work with the rubber molding around the window.

#### 3.3 Shortening the antenna “tail”

The antenna module is supplied with a 6 inch tail. For vehicles with flat roofs (SUV’s, Minivans) and for convertibles, it is possible to shorten the tail by up to 2 inches.

**For vehicles with a sloping roof, or if the module is mounted on the trunk of a sedan, the tail should not be shortened!**

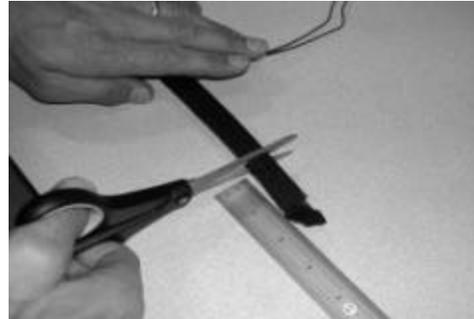


Figure 4: Shortening the antenna tail

As soon as the precise length of the tail has been determined, the adhesive strip may be cut to length and applied to the antenna tail.



Figure 5: Applying adhesive tape

#### 3.4 Removing the antenna

The antenna module may be removed, using a nylon cord (e.g. fishing line) to cut through the adhesive pad between the antenna module and the vehicle. Work from the front to the tail in a side to side cutting motion. Any remaining adhesive may be removed with an appropriate cleaner.

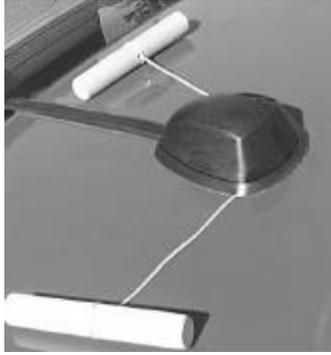


Figure 6: Removing antenna

## 4 Sedans



Figure 7: Installed antenna

The antenna module should be located along the centerline of the roof, at least 4 inches from the rear window.

The antenna cables should be tucked and routed underneath the rubber molding around the rear window and into the trunk

1. Clean the general area where the antenna is to be mounted (using alcohol wipe provided).
2. Identify and mark the precise location of the antenna module.
3. Peel off protective liner from adhesive pads.
4. Starting with the tail in position, work towards the module while applying pressure of approximately 12 psi for a minimum of 15 seconds.

**Note:** Maximum adhesion occurs within 72 hours, during which time car washes and other contact with the antenna should be avoided.



Fig. 8: Applying the antenna

5. Carefully tuck the cables under the rubber molding, working from the tail of the antenna, around the window and into the trunk area.

(A flat tip dental pick or cotter-pin remover is ideal for lifting the rubber molding and tucking in the cables.)

**Note:** Determine whether there is enough space under the molding to conceal both cables, in which case they may be run together. If not, route a single cable around each side of the window. (If there is no space available, it is possible to mount the antenna module on the trunk. Refer to “Convertibles”).

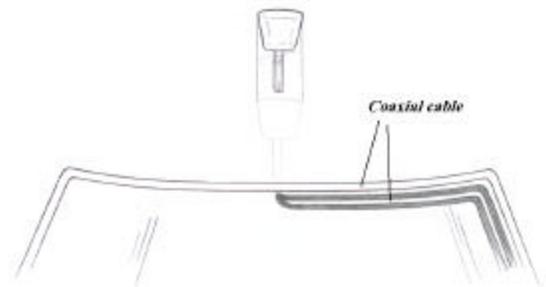


Figure 9: Cables routed together

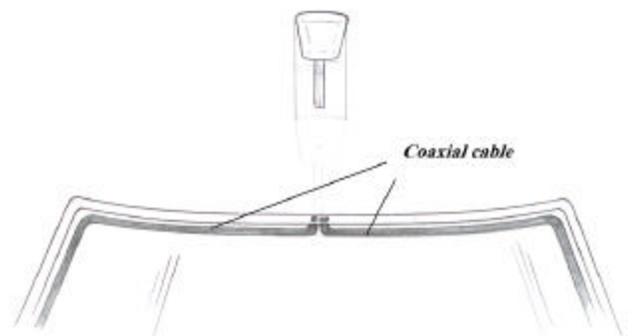


Figure 10: Cables routed separately

There are two types of window moldings, used on most vehicles. Both are suitable for concealing the antenna cable.

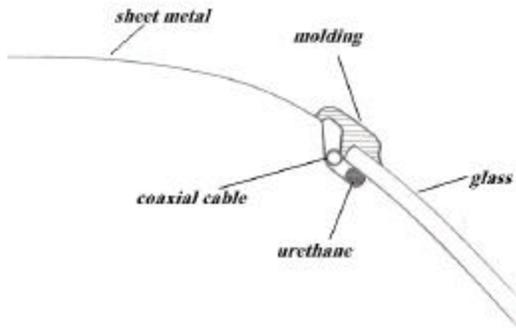


Figure 11: Outside rubber molding (most common)

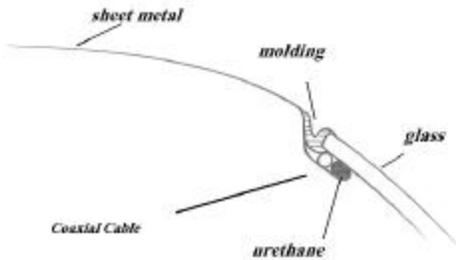


Figure 12: Encapsulated molding (less common)

**Note:** The window molding will be more flexible and easier to work with at room temperature or above. Ensure the molding is clean, and if necessary apply a small amount of oil to make the process easier.

***It is important that the coaxial cable is not damaged or kinked during the installation procedure. Routing the cable in the window molding will not affect the sealing of the window.***



Figure 13: Cables routed in standard molding



Figure 14: Lifting up difficult molding for routing each cable in both directions

6. Route the cable from the lowest point of the rear window into the trunk area. Take advantage of any existing cable channel or wiring conduit.



Figure 15: Entering the trunk through cable channel

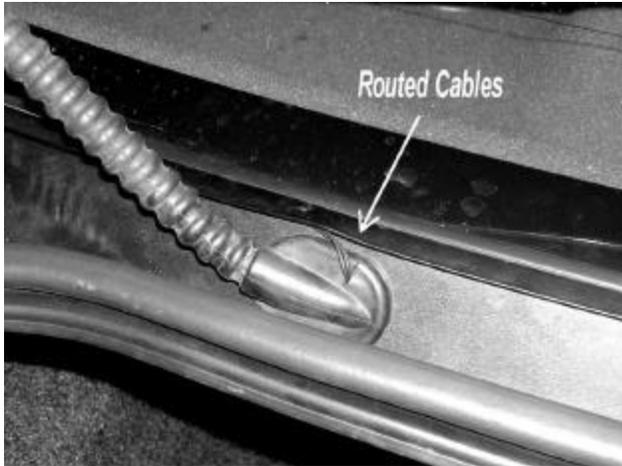


Figure 16: Cables routed directly through the molding and through the cable channel to the interior

7. If there is no suitable cable channel, the cable may be routed directly from the window molding to the right or left corner of the trunk.



Figure 17: Cable routing along the trunk rubber molding

It may be necessary to remove the plastic housings from the antenna connectors in order to feed the cables through narrow openings.

**Note:** Remember to reconnect the correct housing to its corresponding cable.

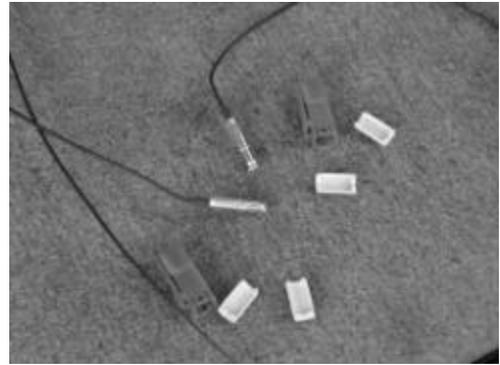


Figure 18: Removing connector housings

Most Sirius receivers have two antenna inputs with the same color-coding as the antenna cable – white = terrestrial; curry = satellite. However, some receivers use only one SMB connector, in which case the plastic housing must be permanently removed and the connector inserted directly into the receiver.

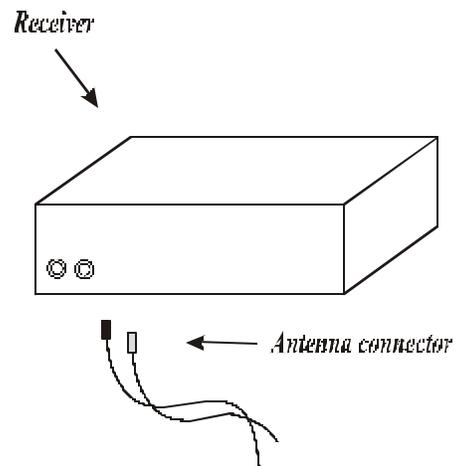


Figure 19: Connecting the receiver

## 5 Convertibles



Figure 20: Mounted on trunk of sedan



Figure 21: Mounted on trunk of convertible

On convertibles (and some sedans which have insufficient space under the window molding) the antenna module should be located on the centerline of the trunk approximately 6 inches from the rear window.

1. Follow steps 1 to 4 under “Sedans” to attach the antenna module to the vehicle.



Figure 22: Routing the cables around the trunk lid rim

2. Route the cable from the rim further underneath the lid (use some telephone wire clips) to the cable channel. Attach the cable to the cable channel with some zip-ties.



Figure 23: Attaching the cable to the cable channel

3. Drill a small hole or cut a gap into the rubber sleeve and lead the cable through the interior trim to the receiver.



Figure 24: Entering the interior through the cable channel

***It is important that the coaxial cable is not damaged or kinked during the installation procedure.***

**Note:** Many convertibles have composite trunk lids. In such cases it will be necessary to create a metal “ground plane”. This can be done by gluing aluminum foil (at least 2 square feet) underneath the trunk lid between the composite lid and the liner.

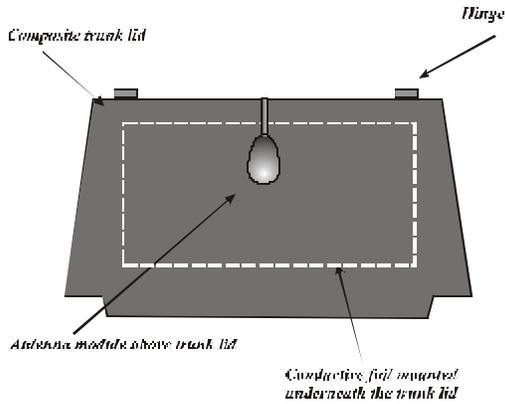


Figure 25: Antenna mounting on composite

## 6 SUV's, Minivans and 5 Door Vehicles



Figure 26: Minivan with Antenna Module

The antenna module should be located on the centerline of the roof, not less than 4 inches from the gap between the roof and tailgate.

### Note the following:

- If the vehicle is equipped with a roof rack, the crossbar should be placed at least 6 inches away from the antenna module.

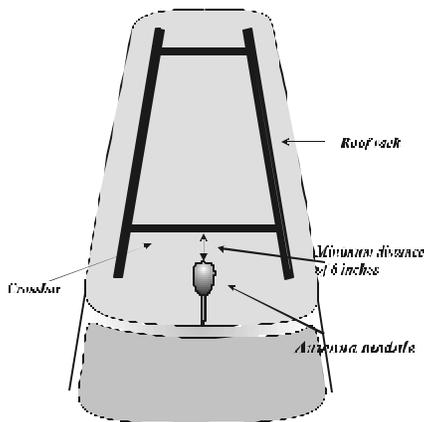


Figure 27: Preferred mounting location

- It may be necessary to locate the antenna to the right or left of center in order to avoid "skid ribs" or brake light.



Figure 28: "Skid Ribs" and brakelight

Other roofs have a brake light in the back and the cable may be routed through the brake light (see Pickup Trucks).

1. Follow steps 1 to 4 under "Sedans" to attach the antenna module to the vehicle.

2. Route the cable between the roof and the tailgate to the inside. Take advantage of any existing cable channel or wiring conduit.

3. There are two alternative methods to route the cable under the headliner and to the receiver:

a. The cable may be routed to the cable channel, lift up the channel and go through the small opening and push the cable directly between sheet metal and headliner. This option is recommended. The cable and the receiver may be concealed behind the interior trim in the back of the vehicle.



Figure 29: Cable routed through roof end and tailgate under the rubber molding

b. Alternatively, the cable may be hidden under the rubber molding following the metal groove underneath the molding to the interior.



Figure 30: Hiding the cable under the rubber molding



Figure 31: Going inside under the interior trim

## 7 Pickup Trucks



Figure 32: Pickup truck with antenna module

The antenna module should be mounted on the centerline of the roof approximately 4 inches from the rear of the cab.

The cables may be routed into the cab through the brake light cavity.

1. Follow steps 1 to 4 under “Sedans” to attach the antenna module to the vehicle.

**Note:** If the molding of the brake light is made of rigid plastic/composite, it may be necessary to drill a small hole or slot to route the cable. Seal the hole with silicone compound after the installation.



Figure 33: Brake light cavity

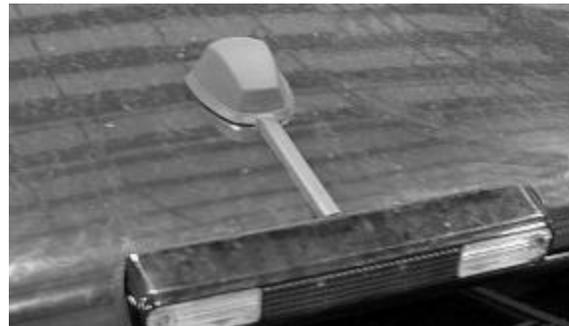


Figure 34: Completed installation

2. Route the cable through the interior trim to where the receiver is located.

3. See Figure 19 under “Sedans” for connection to the receiver.

***It is important that the coaxial cable is not damaged or kinked during the installation procedure.***

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