

# “On-Glass”<sup>®</sup> Antenna

## HOW DOES IT WORK?

Conventional antennas mount in a hole on the metal roof of a car for two reasons. First, the hole allows the cable to attach directly to the antenna. Second, in most cases, the metal mounting surface is a necessary part of the electrical circuit of the antenna.

The patented “On-Glass” antenna depends on neither of these two factors. The glass actually becomes an integral part of the antenna system, and this special type of antenna (called a halfwave dipole) does not depend upon metal under it to “complete the circuit.”

## ABOUT DEFROSTER/DEFOGGER WIRES AND OTHER BARRIERS IN OR ON THE GLASS

Most vehicles today have a rear window defogger option installed. This usually consists of a number of horizontal wires either imbedded into or, in most cases, painted or deposited on the inside surface of the rear window. If these wires come between the coupler and the base, they may absorb some of the signal going to or from the antenna.

If it is impractical or impossible to mount the antenna clear of the defogger wires, it is preferable to straddle two wires rather than to center the base over a single wire. This will minimize interference caused by normally spaced defogger wires.

Some imported cars use a fine wire mesh in place of the parallel horizontal wires. An “On-Glass” antenna will not work through this window.

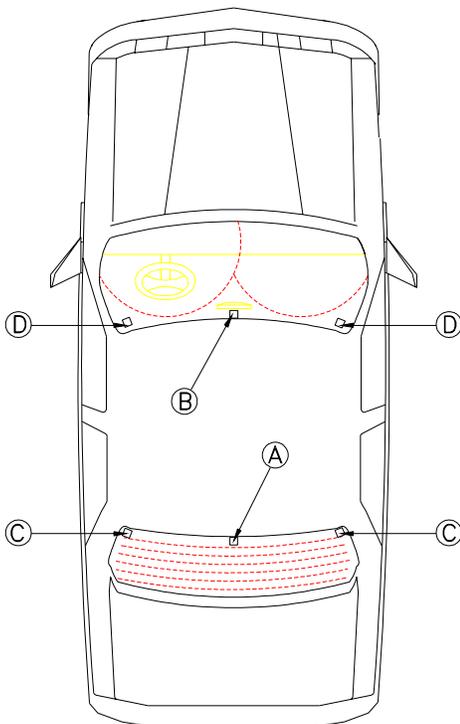
Some car manufacturers offer an optional front and rear windshield defroster film. The “On-Glass” antenna will not work on windows equipped with this feature.

Most aftermarket window tinting kits utilize metallized plastic sheeting. The “On-Glass” antenna will not work through this tinting. It may be possible to cut away an area of the tinting so it will not interfere with the antenna operation.

If your installation is to be made on this type of vehicle, you should consider an alternative Antenna Specialist antenna type for roof or rear deck mounting.

## WHERE TO MOUNT THE ANTENNA

The most common mounting location is the top center of the rear window (A), followed by the top center of the windshield, above the rear view mirror (B). Follow the guidelines listed below:



1. The antenna must not obstruct the driver's vision.
2. The mounting location surface should be as flat as possible; a slight curvature is tolerable.
3. Install the antenna with as much of the whip as possible extending above the roofline of the vehicle.
4. Defogger wires and other wires imbedded in or etched on the surface of the glass must not pass through the center of the mounting area (C).
5. Windshield wiper blades must not pass within 1/4 inch of the mounting location (D).
6. The location must be close enough to the radio so that the cable will reach and allow a neatly “dressed” installation.



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## TAKING INVENTORY

Before starting to install the "On-Glass" antenna, check to make sure you have all parts and understand how they are used. Depending on your specified model, you may have a coupling box with a separate cable assembly or with an attached cable assembly

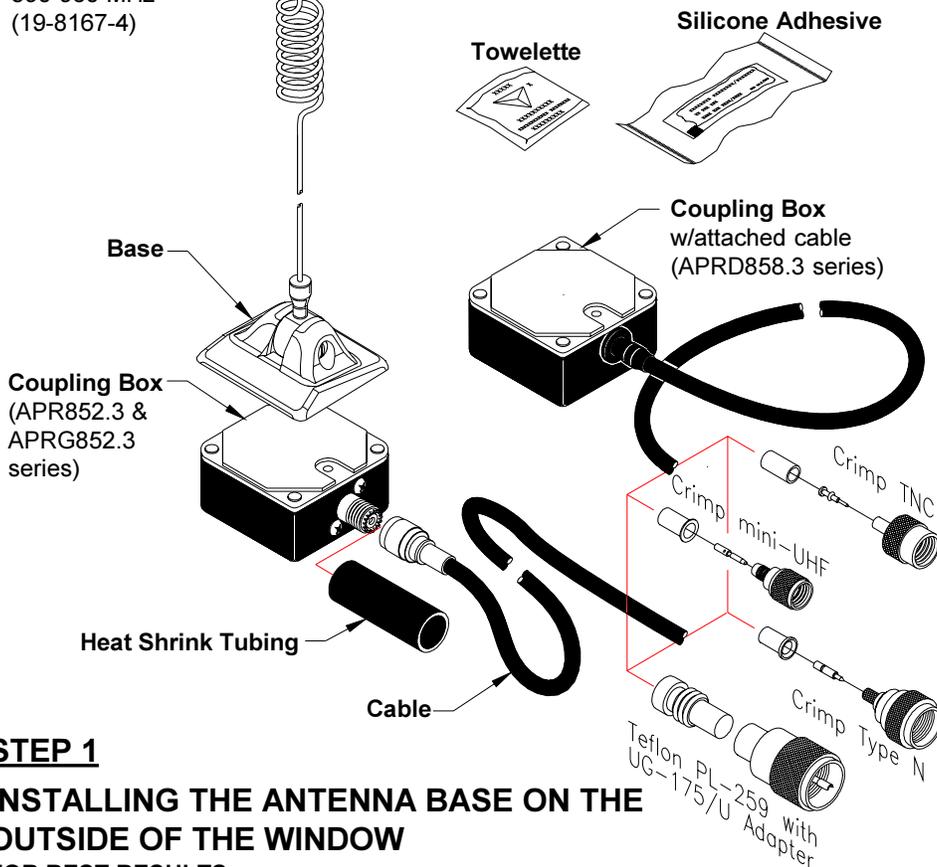
Prior to assembly, you may want to use PTFE or a similar lubricant on the threaded portion of the antenna to protect from weather and ease future disassembly.

### Whip

APR852.3 series  
806-869 MHz  
(198167-2)

APRD858.3series  
824-894 MHz  
(KD873Z or KD873/CP)

APRG852.3 series  
890-960 MHz  
(19-8167-4)



## PREPARING THE SURFACE

The surfaces involved MUST be clean and dry. Thoroughly clean window to create a clean mounting location, inside and outside. Use a clean paper towel to dry thoroughly. Finally, use the towelette provided to wipe away any residue, again drying with a clean paper towel. The ability of the base to achieve its design holding force is totally dependent on the surfaces being free from all foreign matter, such as Rain X™.

Connector  
(depending on model)

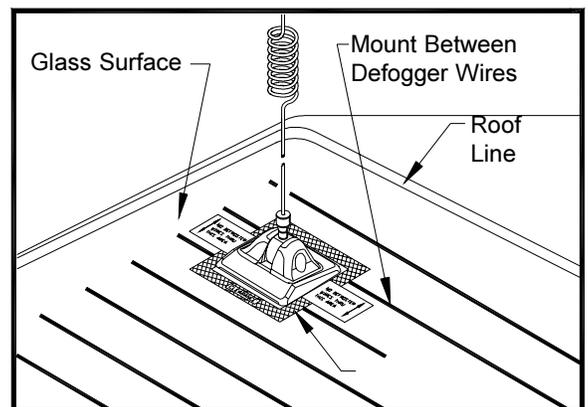
## STEP 1

### INSTALLING THE ANTENNA BASE ON THE OUTSIDE OF THE WINDOW

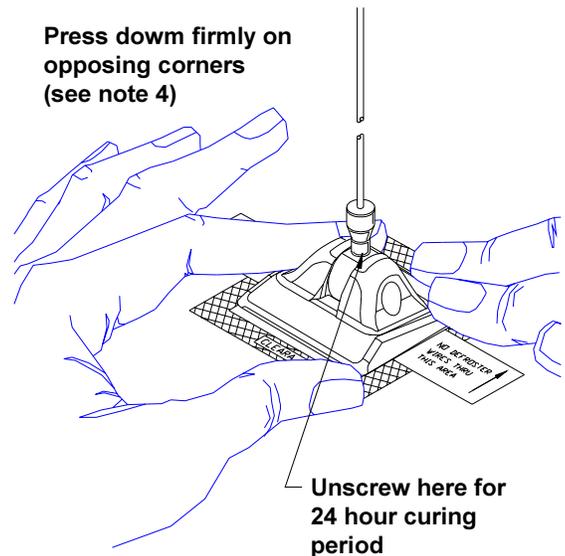
FOR BEST RESULTS:

1. Mounting surfaces must be clean and dry.
2. Perform the installation above 50°F/10°C. Heating the glass with a hair dryer or heat gun, before and/or after installation, helps promote curing.
3. Keep base adhesive pad dry and protect it from vibration for 24 hours following installation.
4. The adhesive pad will stick to the glass instantly and cannot be removed without having to replace it

The template provided can be used to help determine your mounting location. The template will aid you in placing the base far enough away from the edge of the window so the coupling box may be centered over it on the inside, and also assist you in assuring the base will be centered between defogger wires.



1. Do not remove the protective paper from the adhesive pad on the bottom of the base. Place the base in the selected location. Make sure it is possible to adjust the whip to a vertical position.
2. If an obstruction, such as a protruding roofline, prevents the whip from being positioned vertically, a new location must be found.
3. If using the template, position the template provided on the window with its hole over the exact mounting location found previously, with its side tabs positioned centered between defogger wires. (This template is now being used as a guide to insure that the whip will be vertical when mounted.) Use a level or other means to insure that the template is "square" on the window. Fasten this template to the window with any convenient tape which may be easily removed.
4. Before mounting the base, once again be certain that mounting surfaces are free of foreign matter (waxes, protectants etc.) and are absolutely clean and dry. Place base onto the hole in the template (if used) and again assure the whip is vertical. Remove protective backing from the base adhesive pad. Assure that nothing comes in contact with the adhesive after removing its protective cover. Carefully align the base in the template hole and firmly press into place taking care not to capture any template edges under the adhesive pad. It may be helpful to rest the bottom edge of the base near the bottom side of the template hole, and pivot the base down onto the glass. Press firmly in the center of the base and outward to edges. Apply maximum pressure for a minute or more to displace as much air from under the pad as possible.



**SPECIAL NOTE:** High-bonding pressure sensitive adhesive (as found in this base pad) will continue to increase its holding force over time. The vehicle may be driven away immediately after installation; however, for maximum adhesion, protect the mount from moisture and vibration during the 24-hour curing period. If the vehicle is to be exposed to moisture, temporarily cover the area around the mount with tape (electrical, masking) or any other suitable material to keep moisture away from the adhesive.

**If the vehicle is to be driven, temporarily unscrew the whip for at least 24 hours after installation. If the installation will take place in an area where temperatures are below 50°F/10°C, let the adhesive cure for at least 48 hours before attaching the whip.**

5. Remove the template and discard. If the whip needs a slight vertical adjustment, refrain from doing so until the 24 hour curing period has elapsed. When adjusting the whip, hold the base down firmly against the glass to prevent pulling the base from the glass.

## **STEP 2**

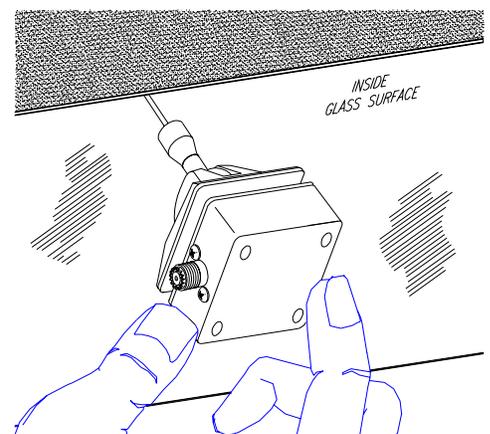
### **INSTALLING THE ANTENNA COUPLER ON THE INSIDE OF THE WINDOW**

#### **CAUTION:**

**The adhesive pad will stick to the glass instantly and cannot be removed without having to replace it. Be sure the position of the coupler is correct before it touches the glass.**

#### **COUPLER ATTACHMENT**

1. Verify the positioning of the coupler so that it will be centered over the base on the outside and that the cable can be easily attached and routed to the radio. The coupler must be mounted with the connector positioned horizontally, either direction.
2. Remove the protective paper from the adhesive pad on the coupler.
3. Apply a dab (large enough to contact the glass), of the adhesive/sealant to each of the exposed corners of the coupler. The use of the adhesive is very important as it provides the primary adhesive bond to the glass.
4. Press the coupler into place on the glass. This is a "Shunt-fed" antenna; a continuity test will show a "Short-circuit" from center to the shell of the Coupler Box cable connector.

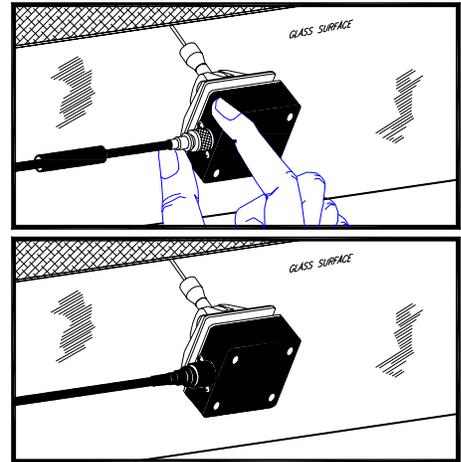


## RUNNING THE CABLE

The next step is to run the cable from the coupling box to the radio. The objective is to keep the cable hidden and away from areas where it may be chafed or pinched.

If your coupler box has a separate cable assembly, follow instructions 1 and 2 below. If the cable assembly is already attached, skip to instruction 3 below.

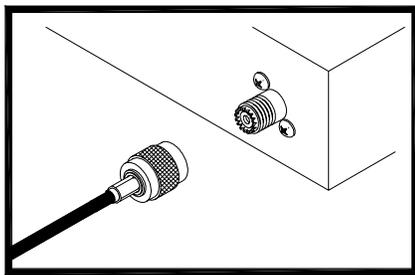
1. Place the heat-shrinkable tubing cover over the connector end of the cable and then screw the connector onto the mating connector on the coupler box.
2. Place the tubing over the connector and shrink it in place with a heat gun or high power (100 watts or more) hair dryer. (The purpose of this tubing is to eliminate the possibility of reflected sunlight from the bright connectors distracting the driver.)
3. Route the cable to the radio, concealing it wherever possible under moldings, the headliner, behind the rear seat, under the dash, etc.



## THE FINAL CONNECTION

The final step is to attach the mating radio connector to the end of the cable. Be sure to leave sufficient slack in the cable before cutting it so there will be no strain on the connector once attached to the radio.

1. Cut off excess cable after it has been routed to the radio.
2. If the connector is supplied loose, identify the type of connector packed with the antenna. Located the corresponding connector attachment & assembly instructions below. Follow these instructions exactly.
3. Attach the cable connector to the radio. The antenna installation is now complete. No further tuning or adjustment is necessary.



## KEEP THESE INSTRUCTIONS

The "On-Glass" antenna may be easily removed and reinstalled on another vehicle. Removal is best done with a wide putty knife or single-edged razor blade. Once the seal between the adhesive and the window begins to give way, a sideways force applied to the Base or Coupling Box will finish the removal.

When removing the Coupling Box from a window with defogger wires on the surface of the glass, be careful not to inadvertently cut or scrape them off. Remove the coupling box by sliding the blade of the removal tool under the connector side of the box.

Reinstallation is possible by using a KAV377 Reinstallation Kit, available from your dealer. Necessary materials and instructions are included.

| TNC CRIMP CONNECTOR INSTRUCTIONS   |  |  |
|--|--|--|
| CRIMP SLEEVE   | CONTACT  | CONNECTOR HOUSING  |
| <p>13/32" 3/16" 5/16"</p> <p>Trim cable to dimensions shown, taking care not to nick the inner conductor or the braid.</p> <p>For cable with foil strip back even with braid.</p>  | <p>13/32" 3/16" 5/16"</p> <p>Trim cable to dimensions shown, taking care not to nick the inner conductor or the braid.</p> <p>For cable with foil strip back even with braid.</p>  | <p>13/32" 3/16" 5/16"</p> <p>Trim cable to dimensions shown, taking care not to nick the inner conductor or the braid.</p> <p>For cable with foil strip back even with braid.</p>  |
| <p>Slip crimp sleeve over cable. Place inner conductor into contact. Note that the end of the contact and inner dielectric must be butting and square. Crimp with proper (.060 hex) crimp tool.</p>  | <p>Slip crimp sleeve over cable. Place inner conductor into contact. Note that the end of the contact and inner dielectric must be butting and square. Crimp with proper (.060 hex) crimp tool.</p>  | <p>Slip crimp sleeve over cable. Place inner conductor into contact. Note that the end of the contact and inner dielectric must be butting and square. Crimp with proper (.060 hex) crimp tool.</p>  |
| <p>Flare outer braid, and gently but firmly push the contact into the connector housing until a gentle snap is felt, indicating the contact is in place. Note: for cable with foil, foil shall remain attached to cable dielectric; flare braid only. Slip the crimp sleeve in place, butting the flange against the connector body, and crimp using proper (.213 hex) crimp tool.</p> | <p>Flare outer braid, and gently but firmly push the contact into the connector housing until a gentle snap is felt, indicating the contact is in place. Note: for cable with foil, foil shall remain attached to cable dielectric; flare braid only. Slip the crimp sleeve in place, butting the flange against the connector body, and crimp using proper (.213 hex) crimp tool.</p> | <p>Flare outer braid, and gently but firmly push the contact into the connector housing until a gentle snap is felt, indicating the contact is in place. Note: for cable with foil, foil shall remain attached to cable dielectric; flare braid only. Slip the crimp sleeve in place, butting the flange against the connector body, and crimp using proper (.213 hex) crimp tool.</p> |

| MINI-UHF CRIMP CONNECTOR INSTRUCTIONS  |  |  |
|--|--|--|
| CRIMP SLEEVE   | CONTACT  | CONNECTOR HOUSING  |
| <p>13/32" 3/16" 5/16"</p> <p>Trim cable to dimensions shown, taking care not to nick the inner conductor or the braid.</p> <p>For cable with foil strip back even with braid.</p>  | <p>13/32" 3/16" 5/16"</p> <p>Trim cable to dimensions shown, taking care not to nick the inner conductor or the braid.</p> <p>For cable with foil strip back even with braid.</p>  | <p>13/32" 3/16" 5/16"</p> <p>Trim cable to dimensions shown, taking care not to nick the inner conductor or the braid.</p> <p>For cable with foil strip back even with braid.</p>  |
| <p>Slip crimp sleeve over cable. Place inner conductor into contact. Note that the end of the contact and inner dielectric must be butting and square. Crimp with proper (.060 hex) crimp tool.</p>  | <p>Slip crimp sleeve over cable. Place inner conductor into contact. Note that the end of the contact and inner dielectric must be butting and square. Crimp with proper (.060 hex) crimp tool.</p>  | <p>Slip crimp sleeve over cable. Place inner conductor into contact. Note that the end of the contact and inner dielectric must be butting and square. Crimp with proper (.060 hex) crimp tool.</p>  |
| <p>Flare outer braid, and gently but firmly push the contact into the connector housing until a gentle snap is felt, indicating the contact is in place. Note: for cable with foil, foil shall remain attached to cable dielectric; flare braid only. Slip the crimp sleeve in place, butting the flange against the connector body, and crimp using proper (.213 hex) crimp tool.</p> | <p>Flare outer braid, and gently but firmly push the contact into the connector housing until a gentle snap is felt, indicating the contact is in place. Note: for cable with foil, foil shall remain attached to cable dielectric; flare braid only. Slip the crimp sleeve in place, butting the flange against the connector body, and crimp using proper (.213 hex) crimp tool.</p> | <p>Flare outer braid, and gently but firmly push the contact into the connector housing until a gentle snap is felt, indicating the contact is in place. Note: for cable with foil, foil shall remain attached to cable dielectric; flare braid only. Slip the crimp sleeve in place, butting the flange against the connector body, and crimp using proper (.213 hex) crimp tool.</p> |

| PL-259 CONNECTOR INSTRUCTIONS  |  |  |
|--|--|--|
| OUTER FERRULE  | ADAPTER  | CONNECTOR BODY   |
| <p>3/4"</p>  | <p>3/4"</p>  | <p>3/8" 1/8" 5/8"</p>  |
| <p>Cut end of cable even. Remove vinyl jacket 3/4". Slide coupling ring and adapter on cable.</p>  | <p>For braid slightly and fold back as shown.</p>                      | <p>Position adapter to dimensions shown. Press braid down over body of adapter and trim to 3/8". Note: If cable has foil, trim flush to edge of folded braid. Bare 5/8" of conductor. Tin exposed center conductor.</p>  |
| <p>Screw plug sub-assembly onto adapter. Solder braid to shell through solder hole. Use enough heat to create bond of braid to shell. Solder conductor to contact.</p> | <p>For final assembly, screw coupling ring onto plug sub-assembly.</p> | <p>Slide the tapered end of the connector body over the dielectric (and foil, if cable has foil) and under the braid, until the dielectric butts against the insulator at point E. When contact is undercut, (captive type) insert cable until it snaps into place. Trim excess braid wire even with the body shoulder at point F. Slide the ferrule over the braid, butting against body shoulder at point G. Verify pin depth and crimp ferrule over braid using proper (.213 hex) crimp tool.</p> |

| TYPE-N CONNECTOR INSTRUCTIONS  |  |  |
|--|--|--|
| OUTER FERRULE  | ADAPTER  | CONNECTOR BODY   |
| <p>Ferrule 1/4" 7/32" 5/16"</p>  | <p>7/32" 5/16"</p>   | <p>1/4" 7/32" 5/16"</p>  |
| <p>Trim cable to dimensions shown. Slide the ferrule onto the cable as shown.</p>  | <p>For cable with foil strip back even with braid.</p>                 | <p>Seat center contact firmly against cable dielectric and crimp with proper (.100 hex) crimp tool.</p>  |
| <p>Slide the tapered end of the connector body over the dielectric (and foil, if cable has foil) and under the braid, until the dielectric butts against the insulator at point E. When contact is undercut, (captive type) insert cable until it snaps into place. Trim excess braid wire even with the body shoulder at point F. Slide the ferrule over the braid, butting against body shoulder at point G. Verify pin depth and crimp ferrule over braid using proper (.213 hex) crimp tool.</p> | <p>For final assembly, screw coupling ring onto plug sub-assembly.</p> | <p>Slide the tapered end of the connector body over the dielectric (and foil, if cable has foil) and under the braid, until the dielectric butts against the insulator at point E. When contact is undercut, (captive type) insert cable until it snaps into place. Trim excess braid wire even with the body shoulder at point F. Slide the ferrule over the braid, butting against body shoulder at point G. Verify pin depth and crimp ferrule over braid using proper (.213 hex) crimp tool.</p> |