“On-Glass”® Antennas

HOW DO THEY 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.

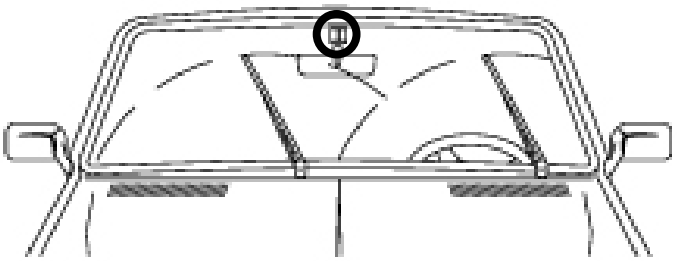
The patented “On-Glass”® antennas depend on neither of these two factors. The glass actually becomes an integral part of the antenna system, and this special type of antenna (called a halfwave dipole) does not depend upon metal under it to “complete the circuit”.

STEP 1 - SELECT MOUNT LOCATION

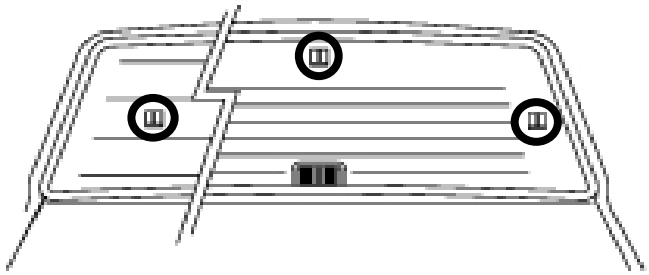
The first step requires some analysis leading to a decision where to mount the antenna. The most common mounting location is the top center of the rear window, followed by the top center of the windshield, above the rear view mirror. Follow the guidelines listed below:

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 roof line of the vehicle.
4. Defogger wires and other wires embedded in or etched on the surface of the glass must not pass through the center of the mounting area. (See **ABOUT DEFROSTER** section below.)
5. Windshield wiper blades must not pass within 1/4 inch of the mounting location.
6. The location must be close enough to the radio so that the cable will reach and allow a neatly “dressed” installation.

WINDSHIELD



BACK WINDOW



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 embedded 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 PCTEL antenna type for roof or rear deck mounting.

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PREPARING THE SURFACE

The surfaces involved MUST be clean and dry. Water-repellent products must be thoroughly removed prior to installation. Use household window cleaner to clean the entire window, inside and outside. Use the window cleaning alcohol pad* provided in the antenna kit to give a second cleaning to the actual mounting location, both inside and outside. Use a clean paper towel to dry thoroughly. The ability of the Base to achieve its design holding force is totally dependent on the surfaces being free from all foreign matter. *** If alcohol pad is dried out, use only isopropyl alcohol to re-moisten pad.**

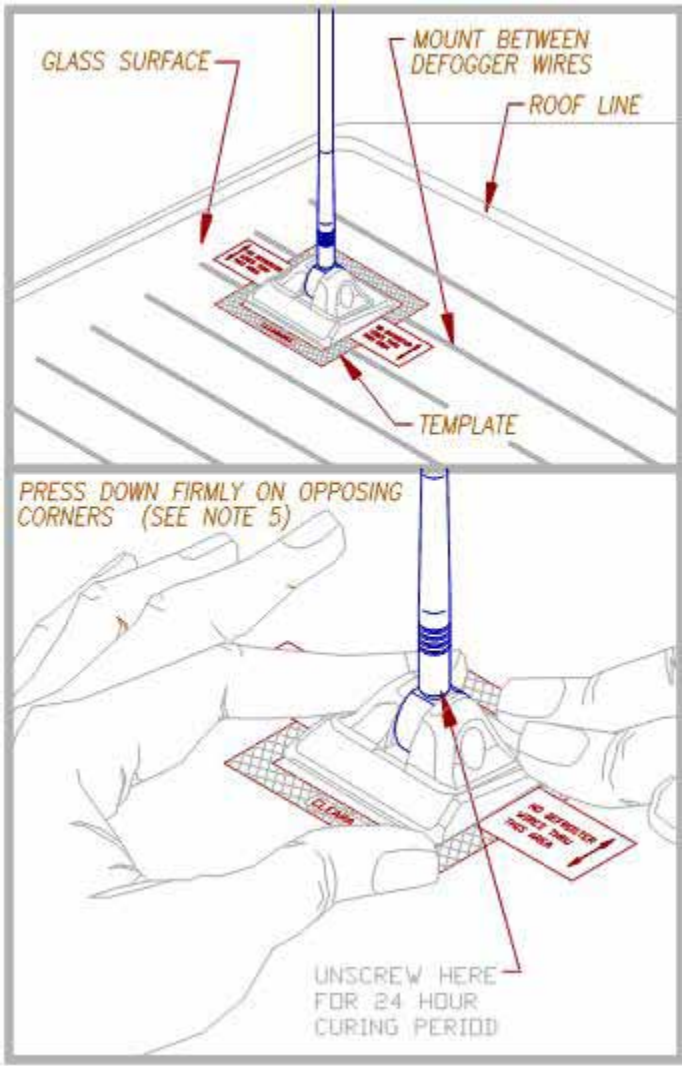
COLD WEATHER INSTALLATIONS

1. For best adhesion in cold weather applications the antenna base, antenna coupler, and automotive glass area should be kept warm to promote curing.
2. The glass surface must be clean and dry. (See **PREPARING THE SURFACE**.)
3. Heat the installation area of the glass inside and outside with a blow dryer to a minimum of 50°F/10°C to optimize curing. Heating the glass with a hair dryer or heat gun, before and/or after installation, helps promote curing.
4. Install the exterior base first to maximize cure time. The use of a single pad adhesive system on the Base requires a minimum set up time of 30 minutes. Optimum cure time for adhesive is 24 hours at 70°F. Therefore, the longer the adhesive is allowed to cure at a high temperature, the better the initial bond will be.
5. Keep Base adhesive pad dry and protect it from vibration for 24 hours following installation.
6. The use of PTFE or similar lubricant on the threaded portions of the antenna, prior to assembly, will protect from weather and ease future disassembly.

STEP 2 - ASSEMBLY AND INSTALLATION

INSTALLING THE ANTENNA BASE ON THE OUTSIDE OF THE WINDOW

Use the Template provided 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. Attach the Whip to the Base.
2. Do not remove the protective paper from the adhesive pad on the bottom of the Base. Make sure it is possible to adjust the whip to a vertical position.
3. If an obstruction, such as a protruding roofline, prevents the whip from being positioned vertically, a new location must be found.
4. Position the Template provided on the window with its hole exactly positioned over the chosen mounting location with its side tabs centered between defogger wires. (The 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 the Template to the window with any convenient tape which may be easily removed.
5. Before mounting the Base, once again, be certain that mounting surfaces are free of foreign matter (waxes, protectants, etc.) and absolutely clean and dry. Place Base onto the hole in the Template and make sure the whip is vertical. Remove the 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 the edges. Apply maximum pressure for one minute or more to displace as much air from under the pad as possible.
6. Remove and discard the Template. After the 24 hour period has elapsed, and the whip has been re-installed, you may adjust it by holding the Base down firmly against the glass to prevent pulling the Base from the glass.

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 unscrew the whip for at least 24 hours after installation. If the installation will take place in an area where temperatures are below 50ºF (10ºC), remove whip and allow the adhesive to cure for at least 48 hours before re-attaching the whip.**

EXTREME CURVED SURFACE INSTALLATIONS
(Not recommended with APDM928 series models.)

1. For applications where curvature of the windshield does not allow for uniform contact of the antenna Base to the windshield, use the silicone adhesive (not included. See **Silicone Recommendation**) for installation.
2. The windshield surface must be clean and dry (see “Preparing the Surface”).
3. Remove the corners on the adhesive pad as shown in Figure 1, leaving the center pad intact.
4. Apply the silicone adhesive/sealant (not included.) uniformly (enough to ensure contact with the glass), to the exposed surface. Avoid excessive amounts of silicone (not included) which could interfere with pad adhesion.
5. Remove the pad liner carefully and install the antenna Base onto the glass (see “Step 1” of the general instructions).
6. Wipe excess silicone off of the glass

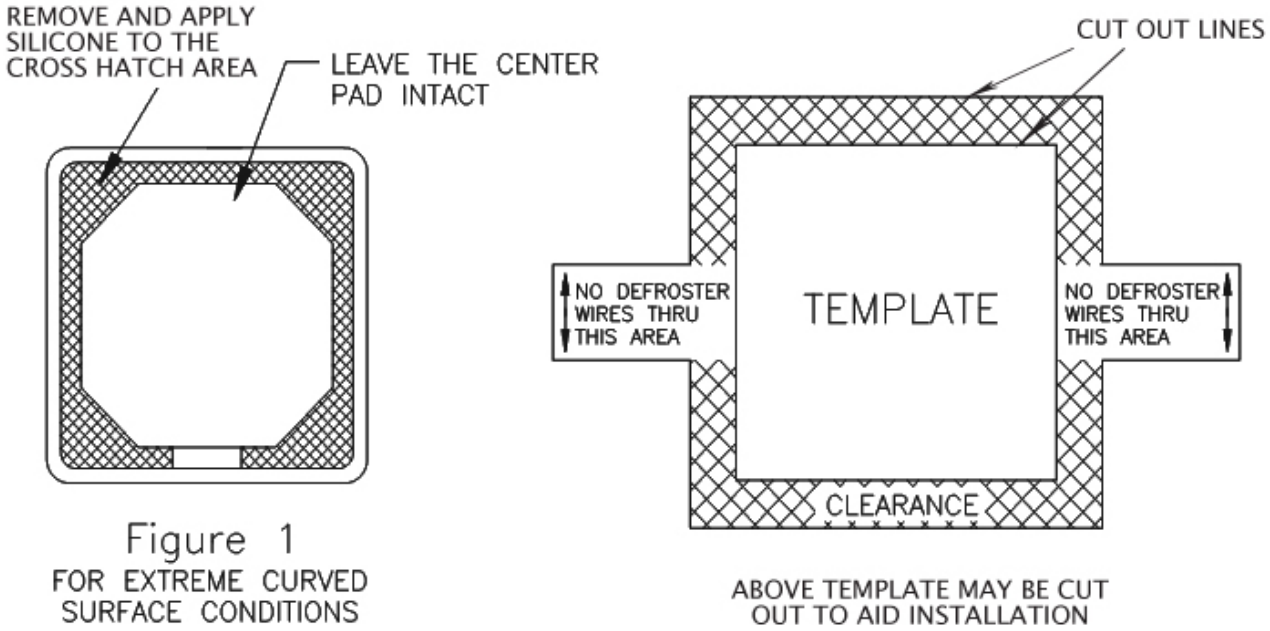


Figure 1
FOR EXTREME CURVED SURFACE CONDITIONS

ABOVE TEMPLATE MAY BE CUT OUT TO AID INSTALLATION

NOTE: Configuration of the coupler may be different from that shown in Figure 1, depending on the antenna model.

SILICONE RECOMMENDATION
For best results, use a low modulus clear silicone adhesive sealant such as **Henkel 908570 Loctite** (not included with antenna).

STEP 3 - INSTALLING THE COUPLING BOX 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 Coupling Box is positioned correctly before it touches the glass.

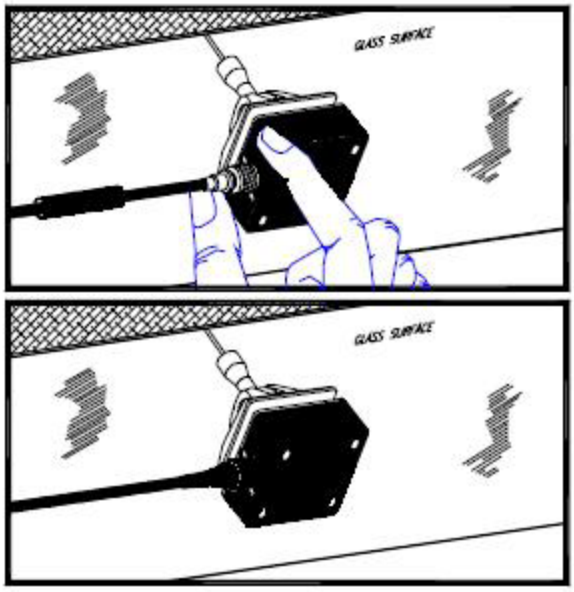
RUNNING THE CABLE
Before attaching the Coupling Box to the glass, run the cable of the Coupling Box to the radio. The objective is to keep the cable hidden and away from areas where it may be chafed or pinched.

ROUTING THE CABLE

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.

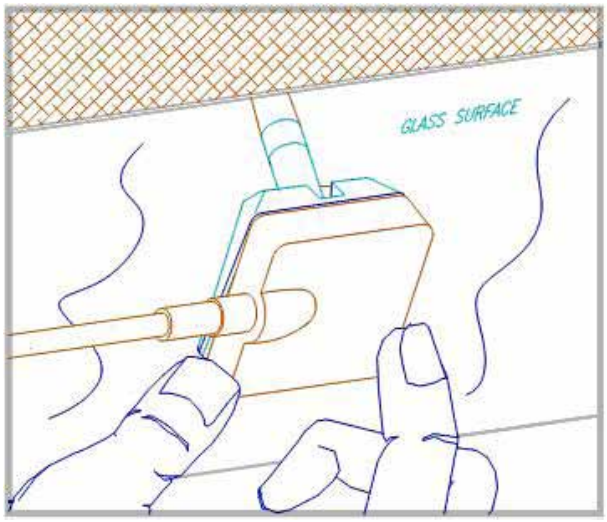
1. Place the heat-shrinkable tubing cover over the connector end of the cable and then screw the connector onto the mating connector on the coupler box.
2. Place the tubing over the connector and shrink it in place with a heat gun or a high power (100 watts or more) hair dryer. The purpose of this tubing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

NOTE: Configuration of the coupler may be different from that shown (at right), depending on the antenna model.



COUPLING BOX ATTACHMENT

1. Mounting surface must be thoroughly cleaned. (See **PREPARING THE SURFACE**.)
2. Verify the positioning of the Coupling Box so that it will be centered over the Base on the outside and that the cable can be easily routed to the radio. **The Coupling Box must be mounted with the connector positioned horizontally, either direction (see diagram).**
3. Apply a dab of silicone adhesive (not included) to all four corners of coupling box.
4. Thoroughly remove old adhesive pad from Coupling Box. Remove protective paper from one side of new adhesive pad and apply to Coupling Box.
5. Press the Coupling Box into place on the glass and apply firm pressure for 30 seconds until adhesive overcomes springing action of coupler circuit.
6. Wipe away excess silicone adhesive.



NOTE: Coupling boxes for these antennas are “Shunt Fed” devices, and provide DC continuity from center pin to ground. The exposed circuit trace is required to touch the interior glass surface for optimal performance, and must not come into contact with any exposed, surface-mounted or glass-embedded wires.

STEP 4 - 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. If the connector is already installed on the cable, loosely coil the excess and position it to the avoid damage. Otherwise, cut off excess cable.
2. If the connector is supplied loose, it will be necessary to install it on the cable. For connector installation instructions, please contact the connector manufacturer.
3. Attach the cable connector to the radio. The antenna installation is now complete. **No further tuning or adjustment is necessary.**

ON-GLASS® ANTENNA REMOVAL

Removal is best accomplished 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 or “twisting” action applied to the Base or Coupling Box, will complete the task.

When removing the Coupling Box from a window with defogger wires on the surface of the glass, be careful not to inadvertently cut or damage the wires. Remove the Coupling Box by sliding the blade of the removal tool under the side of the Coupling Box opposite to the connector. Reassembly is possible by using appropriate Reinstallation parts, available from your dealer.

WARRANTY INFORMATION

Posted on the PCTEL website at **www.antenna.com**