Introduction

Congratulations on your purchase of CarDefender, the only way to protect your vehicle against theft. This document will guide you through the installation process. Please remember, the better you plan for the installation the easier it will be.

What you will need

To install CarDefender you will need tools required to remove the kick panel & bottom portion of your driver's side dash. This will vary from one vehicle to another, but generally a screwdriver and a small ratchet set will get the job done. You will also need a pair of wire cutters/strippers. We also recommend that you use a circuit tester or multi-meter. You can usually purchase an inexpensive circuit tester from a hardware or electronics store for not more than a couple of dollars.

Pre-installation Check List

Your CarDefender kit should include the following components

Quantity	Description
1	Controller Unit
1	Wiring Harness
1	Transceiver (antenna)
1	Light Emitting Diode (LED)
2	Transponders (RF tags)
1	Harness bypass plug

Pre-installation Planning

Before you install your CarDefender you should perform the following pre-installation planning.

1. Identify the critical device you are going to disable.

CarDefender recommends that late model vehicle owners disable the Electronic Control Unit (ECU). This is the computer on your vehicle that supports the electronic functions of your engine such as electronic fuel injection. Without the control unit enabled, your vehicle will neither start nor run. If you own an earlier model car, you may disable an electric fuel pump or the distributor. The steps below guide you through the process to disable the ECU. The easiest way to find the power source for your ECU is to perform the following.

a. Find your fuse box. (Remember that some cars have two fuse boxes. Generally, one is located under the driver's side dash and the other under the hood.)
b. Locate the label on the fuse box cover that says ECU or ECM.
c. Pull the corresponding fuse out of the fuse box.
d. Attempt to start your vehicle.
e. If your vehicle does not start you have located the fuse for the critical device.
f. Replace the fuse & mark the wire.

2. Identify a constant source of 12vdc

Your CarDefender will require a constant supply of +12vdc. You will need to locate a wire near where you mount the controller (under dash installation is recommended) that has a continuous supply of +12vdc even when your vehicle is off. To find the wire, we recommend that you perform the following:

a. Turn your vehicle off and remove the key.
b. If you have a circuit tester or multi-meter, affix one probe on a good ground.
c. Locate the fuse box under your dash.
d. Look at the labels on the fuse box and pick a circuit that you believe will have a continuous supply of power, such as "accessory" or “interior lights". If you have access to a circuit tester, push one probe into the socket for the corresponding fuse until it makes contact with the metal. If the light on the circuit tester illuminates, you have most likely found your source. To verify the source, turn your vehicle ON and make sure the **light on the tester stays illuminated**.

e. You will now have to find the wire that leads out off the fuse box for this circuit. If you cannot visually confirm this wire you may have to remove the screws that attach to the fuse box and locate the wire on the back.

3. Identify a source of switched 12vdc

Your CarDefender will require a source of +12vdc that is only hot when your key is in the **ON & CRANK** positions. To find this source, follow the same procedure as above to identify the constant source of 12vdc, but with the key in the **ON & CRANK** positions **ONLY**.

a. Turn your key to the **ON** position
b. If you have a circuit tester, affix one end to a good ground.
c. Locate the fuse box under your dash.
d. Look at the labels on the fuse box and pick a circuit that you believe will have a switched supply of power, such as air conditioning or "AC", **be sure not to use the circuit for the critical device you found in step one**. Push the probe end of the test light into the socket for the corresponding fuse until it makes contact with the metal. If the light on the circuit tester illuminates, you have most likely found your source. To verify the source turn the ignition key to the OFF position and make sure the **light on the tester goes off**.
e. You will now have to find the wire that leads out of the fuse box for this circuit. If you cannot visually confirm this wire you may have to remove the screws that attach to the fuse box and locate the wire on the back.

4. Find a location to mount your hidden Transceiver (antenna)

Your hidden Transceiver must be mounted behind a **NON-METALLIC** surface inside your vehicle. To locate an appropriate location, sit in your driver's seat and find an area of the dash, center console, or under the carpet that is convenient to hold your Transponder (RF tag) up to. Remember that you will need to hold your Transponder in front of this area before you start your vehicle every time. Be sure not to install the Transceiver where obstructions such as soda cans in your cup holder may interfere. Once you have located an appropriate location remove the console from in front of it and verify that there is no metal behind it, and that you have ample space to mount the Transceiver. Note that we recommend adhering the antenna to the inside of your selected surface with silicon adhesive or double stick tape.

5. Find a location to mount your LED

The LED will flash when your critical device is disabled. (5 seconds after the vehicle is turned off) The LED is supplied simply as a theft deterrent, it does not affect the operation of CarDefender in any way and is completely optional. If you don't wish to have the LED light visible the wiring can be wrapped up and tucked up under the dash and held with electrical tape or a zip tie.

If you would like to install the LED you will need to use a 1/4 inch drill bit to drill a hole somewhere in your dash. The location is completely up to you. We recommend somewhere where the light will be visible to a thief. If you have any factory "blank buttons", or pieces of plastic that look like buttons and are used for an option such as fog lights or traction control that you did not purchase on your vehicle, we recommend mounting the LED in one of these. If you drill through a blank button and make a mistake you can always order a replacement blank from your dealer for a few dollars.

If you don't wish to have the LED light visible the wiring can be wrapped up and tucked up under the dash and held with electrical tape or a zip tie.

6. Find a location to mount your controller

Your controller should be mounted in a location that is not easily accessible to a thief. We recommend that you remove the bottom portion of your driver's side dash to look for a suitable location. We recommend that you mount your controller by:

a. Placing one of the mounting holes over an existing bracket and "piggy-backing" on top.
b. You may drill two new holes into a support structure under your dash and use self-tapping screws to mount.
c. Use one of the supplied tie wraps to attach the controller to a support structure.

d. You may use silicone adhesive to glue it to a support structure.

Installing CarDefender

You are now ready to install your CarDefender. Just complete the following steps in sequence.

1. Mount Transceiver

Using silicon based adhesive or double-sided tape, mount your antenna behind the **NON-METALLIC** surface you located in step 3 of the pre-installation planning. Route the wire back to the controller.

2. Mount LED (Optional)

If you've decided to use the theft-deterrent LED, drill a ¼ inch hole in the location where you want the LED. Push the LED into the hole until it locks in place. Note that if the LED is loose, you can wrap some electrical tape around the base to "snug" up the fit. Route the wire back to the controller.

3. Mount Controller

Using one of the methods described in step 5 of the pre-installation planning, mount your controller.

4. Connect switched 12vdc power source

Select the wire with the **BLACK** spade connector in the wiring harness, cut off the spade (it is used for identification only) and twist and solder this wire to the switched power source.

5. Connect continuous 12vdc power source

Select the wire with the **BLUE** spade connector in the wiring harness, cut off the spade (it is used for identification only) and twist and solder this wire to the continuous power source.

6. Connect chassis ground

Connect the ring terminal on the wiring harness to a chassis ground. Usually, a screw into the metal frame of your vehicle will be appropriate.

7. Connect harness, transceiver and LED (optional)

a. Plug the antenna and LED wires into the end of the controller.
b. Plug the wiring harness into the 6-pin connector.

8. Test Controller

At this point we recommend that you test your CarDefender before immobilizing your critical device. To test your CarDefender perform the following:

a. Turn vehicle off and remove the key
b. Hold one of the supplied transponders within one inch of your hidden transceiver for about one (1) second. If you hear CarDefender "Beep" (twice), your unit is installed properly.

9. Interrupt and connect critical circuit

You are now ready to connect your critical device. To do this, locate the wire you marked in step 1 of the pre-installation planning. Cut this wire and strip both ends. Place one of the wires into a "butt-connector" on the wiring harness and crimp it firmly. Repeat this process for the other wire. It does not matter which wire attaches to which "butt-connector". We would also recommend that you wrap these connections in electrical tape. The "butt connectors" may be removed, the wires twisted and soldered, then taped.

10. Test CarDefender and reassemble vehicle

You are now finished with your CarDefender installation. Test the unit by holding your Transponder within one inch of the hidden Transceiver for about one second. When you hear CarDefender "beep" twice put your key in the ignition and start the vehicle.