



Theft Protection You Can Count On!

Passive Antitheft System

OWNER'S MANUAL

includes installation instructions

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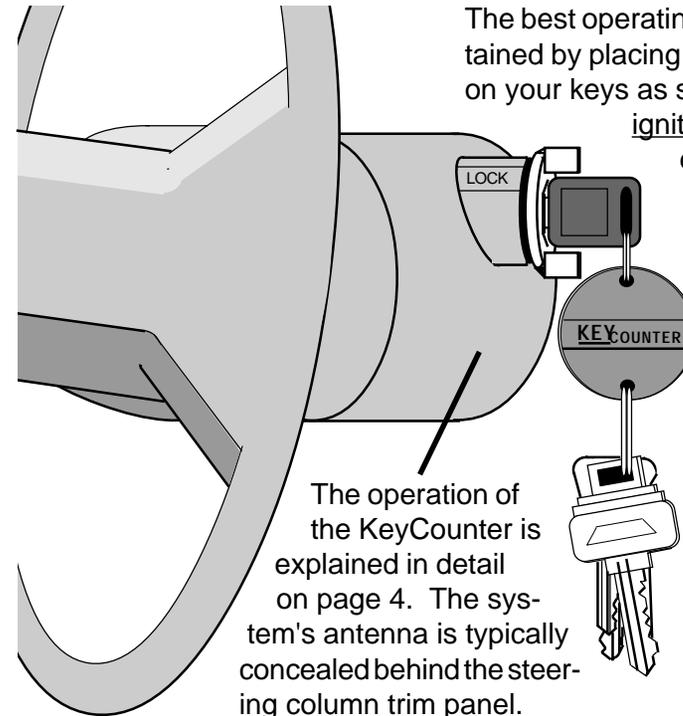
About the KeyCounter™

Congratulations on your choosing the most innovative and user-friendly antitheft system available. The Omega KeyCounter™ Passive Antitheft System utilizes state-of-the-art Radio Transponder technology incorporated with the patented unauthorized controller feature of ATV™.

With your KeyCounter system you received a special key fob, or "disc", to be used with your car's key. After KeyCounter is installed, every ignition key which will be used to start your vehicle must have its own disc attached. Each KeyCounter disc contains a "transponder", a miniature radio receiver and transmitter device, which communicates with a control unit installed in the vehicle. **The KeyCounter control unit will not allow the starter to engage unless it receives an authorized digitally-encoded radio signal from your key fob disc.**

With KeyCounter installed, even a correctly-cut key will no longer start your car. In everyday use, KeyCounter shows how many authorized discs, thus keys able to start the car, are encoded into its memory. This is the "Active Transponder Verification" feature, or "ATV". To further protect against tampering, for 48 hours after any disc programming activity, the system's status light changes to an eye-catching multicolored display as a warning.

You will be surprised at KeyCounter's no-hassle, user-friendly design, serious antitheft security, and ease of operation. The disc/transponders have no moving parts, need no batteries, and in use need no special actions by the user.



The best operating performance is obtained by placing the KeyCounter disc on your keys as shown: place your ignition key only on the disc's small ring, and place the key ring and remaining keys on the opposite side of the disc.

The operation of the KeyCounter is explained in detail on page 4. The system's antenna is typically concealed behind the steering column trim panel.

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Each KeyCounter system includes two key fob discs: a Black "Daily Use disc" and a special Red "Programming disc". KeyCounter can have up to four Black Daily Use discs programmed to operate it, in addition to the one Red Programming disc. As it is required to program additional or replacement daily use discs to operate the system, the Red Programming disc should be kept in a safe place.

Additional daily use discs are readily available, and the Red Programming disc, if needed, may be used in an emergency in place of a Black Daily Use disc. If the original Red key fob is lost, the system's control module must then be returned to the factory for reprogramming. The KeyCounter also has two other components which involve the user's interaction: a system Status Light and a Valet /Override Switch. These are typically mounted in a small housing within sight and reach of the driver.

Using the KeyCounter™

No special action is required to engage, or disengage, the KeyCounter system. Upon turning the ignition switch off, the starter circuit will automatically be immobilized 20 seconds later. This 20 second period is indicated by the Status Light illuminating Orange. When the 20 second period expires, the starter circuit is immobilized, as indicated by the Status Light changing to flash Red once every second. The Status Light will flash Red at all times while the starter immobilizer circuit is engaged, as both an indicator of the system's immobilized starter status and also as a visual theft deterrent. While the KeyCounter is in this state, the engine

cannot be started; if an attempt is made to start the vehicle, the starter will simply not operate. Any such failed starting attempt will result in the Status Light illuminating solid Red as soon as the ignition switch is turned to the "on" or "run" position. This serves as a warning of the no-start condition, and also to indicate that the system is in the process of "seeking" an authorized key fob disc. Please note that an installation option allows for the vehicle's dome light circuit to initiate the KeyCounter's seeking of the disc; if so the Status Light changes from flashing Red to solid Red as soon as the door is opened. In this case, the exchange of the digital signal between the disc and the KeyCounter occurs much faster; typically before the key is even inserted into the ignition switch.

However, when a starting attempt is made with an authorized key fob disc, the Status Light will change from flashing Red to a flashing of Green for 10 seconds (except during the ATV warning period- see page xx). When the Status Light changes to flashing Green, it is important to note that the KeyCounter is actually indicating two conditions:

First, the starter circuit is no longer immobilized, and the engine can be started.

Second, note that the Green flashes occur as a series of flashes between pauses. This is the ATV operation; the number of flashes is the number active transponder discs, hence keys, which are able to successfully start the vehicle.

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ATV™ Warning

For the first 48 hours after the KeyCounter is installed, or for 48 hours after any key fob disc programming activity, the Status Light will have a different operation when the ignition switch is turned on, and the disc/control unit exchange occurs. During this initial period, the ATV display is extended to 90 seconds, and **the Green flashes are against a Red background color**. This eye-catching display is a warning that key fob disc programming activity has recently taken place.

ATV, or Active Transponder Verification, is an exclusive patented feature. Although similar antitheft systems are available, even as factory-equipped systems, only KeyCounter indicates how keys can actually start your vehicle.

System Override and Valet Mode

Your KeyCounter system includes a push-button Valet/Override Switch. This switch can be located on the bottom of an included Status Light and Valet/Override Switch combination holder; or, the installer has the option of mounting it in a hidden, but accessible location. The Valet/Override Switch, used in conjunction with the ignition key, may be used to override the system by placing it in Valet Mode should the KeyCounter disc become lost or stolen. **As long as the system is in Valet Mode, the automatic engagement of the system will not occur**. Therefore, in addition to providing an emergency override function, Valet Mode is used to prevent the KeyCounter's automatic engagement during times when it may not be desired.

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To summarize the KeyCounter's basic operation and indications:

- Solid Orange** Status Light indicates that the KeyCounter is in the automatic process of immobilizing the starter.
- Flashing Red** Status Light indicates that the starter is immobilized.
- Solid Red** Status Light indicates that the KeyCounter is seeking a transponder disc and the starter is still immobilized.
- Flashing Green between pauses** Status Light indicates that the KeyCounter has detected the presence of an authorized transponder disc, and the vehicle can be started.

To better understand Active Transponder Verification (ATV), consider that your system includes two discs- the Red Programming and Black Daily Use discs. Therefore, every time the ignition switch is turned on, and the exchange occurs between the disc and the KeyCounter, the Status Light changes from solid Red to two Green flashes between pauses for a 10 second period. The two Green flashes represent the two discs; if for example an extra Black Daily Use was added, the Green flashes would be three times between pauses. As the KeyCounter can have as many as four Black Daily Use discs in addition to the Red Programming disc, ATV could be as many as five Green flashes between pauses.

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To place the system into Valet Mode, which will also permit the starting of the vehicle without having a key fob disc present, perform the following steps:

- 1) Enter the vehicle; the system is engaged, as indicated by a flashing Red Status Light. If the door detection circuit is connected, the Status Light will change to solid Red when the door is opened. If not, the Status Light remains flashing until the following step.
- 2) Use the ignition key to turn the ignition switch on. The Status Light will change to solid Red (if not already solid Red from the door detection circuit) indicating that system is actively seeking a key fob disc. When the Status Light is solid Red the vehicle will not start.
- 3) Press the Valet/Override Switch 3 times. The Status Light will briefly change to solid Orange before extinguishing completely. The system is now in Valet Mode, and the vehicle may be started. As an indicator of Valet Mode, when the ignition switch is turned off, and while it is off, the Status Light will be solid Green.

The system is now in Valet Mode, and the starter interrupt circuit no longer engages automatically every time that the ignition switch is turned off. Please note that if the vehicle will be left with someone, and it is desired to place the system into Valet Mode, simply allow the system to engage, then perform the System Override to obtain Valet Mode.

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The KeyCounter system will stay in Valet Mode until it is removed from Valet Mode. To remove the system from Valet Mode, turn the ignition switch on, then press and hold the Valet/Override Switch. The Status Light will briefly illuminate Orange, and then go out. Normal operation will now resume: turning off the ignition switch results in the Status Light illuminating solid Orange for 20 seconds indicating impending engagement, then changing to flashing Red indicating that the starter is immobilized. While the Status Light is solid Green the vehicle can still be started. Once it changes to flashing Red, the vehicle cannot be started.

How to Program KeyCounter™ Key Fob Discs

Each KeyCounter system comes from the factory with two key fob discs. The Black disc is for "Daily Use", and the Red disc, which is a special disc. The Red disc is used for "Programming", but in an emergency can be used in place of the Daily Use disc. **As the Red disc is essential to programming the KeyCounter, it should be kept in a secure place.** If the original Red key fob is lost, only by returning the control module to the factory can it be re-configured for programming.

KeyCounter can have up to four Black Daily Use discs programmed to operate it, in addition to the one Red Programming disc. Additional Black Daily Use discs are readily available, and adding extra or replacement discs is not difficult. Before beginning programming, have the Red Programming disc at hand along with all Black Daily Use discs which are to operate the system.

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- 5) Again present the Red Programming disc to the antenna; the Status Light will go out momentarily to indicate the disc's code is retained as the Programming disc. The Status Light returns to solid Red.
- 6) Now present the first Black Daily Use to the antenna; the Status Light will momentarily go out, then return to solid Red.
- 7) Repeat the previous step for each additional Black Daily Use disc.

After 10 seconds of no further disc presentations, the Status Light will change from solid Red to solid Orange, which indicates the exit from programming mode and the start of the normal engagement process. If all five code slots are filled, i.e. - one Red disc and 5 Black discs, the Status Light's change from Red to Orange will occur as soon as the fifth disc is presented.

Note:

The KeyCounter system has a special antenna which is designed to be mounted behind the steering column trim panel, below the ignition switch. If the vehicle's steering column structure allows optimal antenna placement, when the transponder disc is placed within approximately three inches of the antenna, the radio transmissions between the disc and control module are made and the vehicle is allowed to start. If the door circuit wire is connected, the radio transmissions will occur as the key is being inserted into the switch.

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Some important things note to before beginning the programming procedure:

- When additional Daily Use discs are added, any original disc(s) must also be reprogrammed. Have all discs at hand, but away from steering column (in which the KeyCounter's antenna is typically mounted; see note on next page).
- Before starting, temporarily remove the Black Daily Use disc from the ignition key, or use an extra key that does not have a disc attached. When the ignition switch is turned on in step 2, a disc must not be close to the antenna.
- Once programming has started, each successive step must be performed within 10 seconds of the previous step.

Programming procedure:

- 1) While the system is in an armed state (flashing Red Status Light), press and hold the Valet/Override Switch; the Status Light changes to flashing Green.
- 2) Turn the ignition switch "on"; the Status Light changes to solid Red. Now release the Valet/Override Switch.
- 3) Present the Red Programming disc to the antenna; the Status Light changes to solid Orange.
- 4) Turn the ignition switch off; the Status Light changes to solid Red.

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Installation

The KeyCounter™ is designed for professional installation!

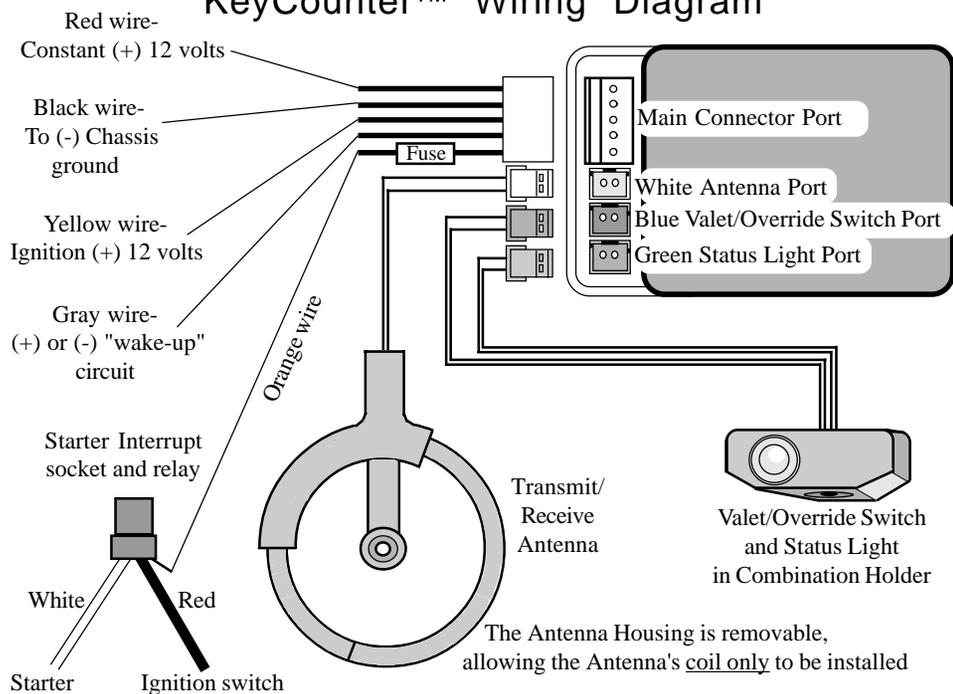
Due to the sophisticated computerization and the presence of air bag safety systems, all contemporary vehicles present many hazards to the installer. Persons lacking proper training and experience can not only damage the vehicle but suffer serious personal injury.

The KeyCounter™ system includes the following:

- The KeyCounter Control Module.
- Two transponder discs: a Red Programming disc and a Black Daily Use disc.
- A main wiring harness, with Starter Interrupt socket and relay.
- A circular transmit/receive antenna.
- A two-color Status Light.
- A Valet/Override Switch.
- A no-drill mounting combination holder for the previous two items.
- This Owner's Manual and installation instructions manual. After installation and testing, please place this manual in a conspicuous location within the vehicle.

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KeyCounter™ Wiring Diagram



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Red Wire: (+) 12 Volt Constant Power

This wire supplies constant (+) 12 volts for the unit's operation. This wire must have (+) 12 volts at all times. The recommended connection for the Red wire is to the constant (+) 12 volt supply wire at the ignition switch harness.

Yellow Wire: (+) Ignition Power

This wire supplies (+) 12 volts to the unit whenever the ignition switch is turned "on". This connection should be made at the ignition switch harness, to the primary ignition circuit. Primary ignition has 0 volts when the ignition key is in the "Lock", "Off" and "Accessory" positions; and 12 volts in the "Run" and "Start" positions.

Gray Wire: (+) or (-) "Wake-up" Circuit

The KeyCounter emits RF energy to activate the transponder inside the key fob disc. This emission only occurs for a 30 second period upon the ignition switch being turned "on" (as indicated by a steady Red Status Light). This operation reduces the parasitic current draw on the vehicle's battery well below acceptable specifications. The current draw of the system while armed and at rest is less than 10 milliamps; the current draw during the 30 second RF emission period is approximately 250 milliamps.

This wire activates the 30 second RF emission period; the activation occurs whenever the vehicle's wire changes polarity. In this regard, the Gray wire can be connected to the vehicle's circuit without concern as to the switching polarity of the host circuit.

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Wiring Instructions

Wiring Connections

A universal main harness is included. Using this harness will require cutting the vehicle's starter wire, and splice-connection of the ignition and battery power circuits. Available as an optional part from Omega is the Quick InterConnect Harness, which is designed vehicle-specific and installs by plugging directly into the vehicle's existing wiring harnesses.

Regardless, it is recommended that the (-) ground connection be made first, followed by plugging the 5-way harness connector into the KeyCounter control module. The remaining electrical connections are then made according to the following instructions (or those supplied with the Quick InterConnect Harness, if used). The mounting of the control module is one of the last steps performed in the installation.

Black Wire: (-) Chassis Ground

This wire supplies chassis ground for the unit's operation. Connect the Black wire to the metal frame of the vehicle, preferably using an existing machine-threaded fastener and the proper size ring terminal. Make sure that the Black wire's ring terminal has contact with bright, clean metal. If necessary, scrape any paint, rust or grease away from the connection point until the metal is bright and clean. A good ground connection is essential for proper operation.

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Suggested connection points of the Gray wire are to the vehicle's courtesy light circuit or the key-in-ignition switch circuit; the later must be configured to operate regardless of whether the driver's door is open or closed. A final point for the installer to note is that while this circuit is not absolutely needed for the KeyCounter's operation, its connection vastly improves the system's performance.

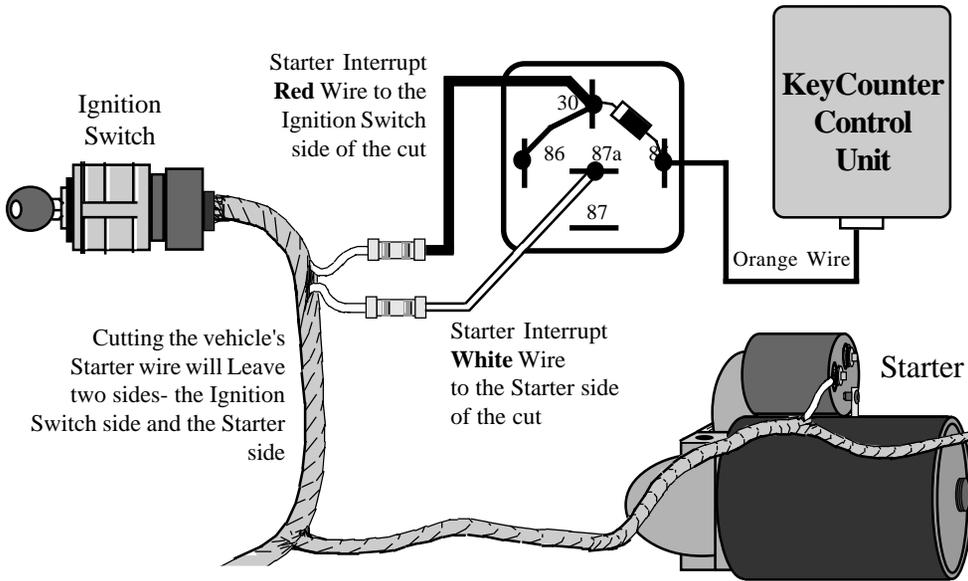
Red and White Wires: Starter Interrupt Connections

The starter disable socket and relay, already on the wiring harness, is connected by an Orange wire to the control module. This starter interrupt is what prevents the vehicle from starting, and will automatically engage 20 seconds after the ignition switch is turned off (unless the system is in Valet Mode).

The use of an Omega Quick InterConnect Harness is highly recommended; as it allows the installation of the KeyCounter system with no, or minimum, alterations to the vehicle's factory wiring. To interrupt the vehicle's starter circuit without using a Quick InterConnect Harness, the starter wire must be located and cut. It is recommended that this connection be done as close to the ignition switch as possible. Use a voltmeter, not a test light, to find the correct wire, which is the wire from the ignition switch to the starter solenoid. **CAUTION! Avoid the airbag circuit! Improper use of a test light can cause deployment of the airbag, which may result in bodily injury! Test lights can also damage on-board computers and associated sensors.** The starter wire will read Positive 12 Volts only when ignition key is in "start" position (cranking the engine). Cut this wire at a suitable location. Confirm that this is the correct wire by turning the ignition switch to the "start" position;

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the starter should not engage. Connect the optional starter disable socket's Red wire to the ignition switch side, and its White wire to the starter solenoid side. **Be sure that good, solid electrical connections are made, as this generally is a high amperage circuit.**



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Before firmly mounting the antenna, test the operation of the KeyCounter for good range performance. Once the antenna is mounted, carefully route the antenna's wiring harness to the Control Module, and plug its White connector into the KeyCounter control module's White port. **When routing the wiring harness down the steering column, ensure that all moving parts, such as the steering shaft or gear select linkage, will not be affected or impaired.**

It is not necessary to adjust the antenna, and there is no provision for any type antenna adjustment. If the antenna is correctly mounted in the proper location, range between the transponder disc and antenna will be most adequate.

The Status Light and Valet/Override Switch

The Status Light and Valet/Override Switch are enclosed in a "no drilling" Combination Holder which may be adhered to the desired mounting location (prepare the mounting area with an interior panel-safe cleaning solvent). The location selected should be easily visible to the vehicle's operator, and also to persons outside the vehicle as a theft deterrent measure. Desirable locations include any overhang of the instrument panel, which also provide hidden routing of the Status Light and Valet/Override Switch wires to the Control Module. Plug the Status Light's Green connector into the KeyCounter control module's Green port and plug the Valet/Override Switch's Blue connector into the module's Blue port.

If the Status Light and Valet/Override Switch combination holder is not utilized, be sure that the vehicle owner is shown the location of the Valet/Override Switch.

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The Antenna, Status Light and Valet/Override Switch

The Transmit/Receive Antenna

The KeyCounter's antenna installation is critical to the system's performance and operation. The ideal location is mounted behind the steering column trim panel, closely below the ignition switch (see the diagram on page 2). In this location, it is more likely that everyday operation will require no conscious action on the part of the user. However, there are some vehicles which may not allow the placement of the antenna in the optimum location by the ignition switch. In these situations, the system's antenna will be mounted behind a different dash or interior panel, and the key fob disc will have to be presented to this area before the vehicle can be started.

It is also important to firmly mount the antenna. If movement of the antenna is allowed, operational performance will vary. Several mounting methods are allowable. A screw or nut and bolt may be used in the central mounting tab; silicone adhesive may be used to glue the antenna assembly behind a trim panel. Using tape, wire ties, or wedging the antenna is not recommended, as any change in the antenna's position will affect the system's performance.

If desired, the antenna coil may be removed from the round plastic housing; the housing can be pried apart and discarded, so that the smaller antenna coil by itself can be installed. This is option is most desirable where space is at a premium within the steering column housing, **but it is important to firmly mount it so that the round shape is retained.**

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LIMITED LIFETIME WARRANTY

Products manufactured and sold by OMEGA RESEARCH & DEVELOPMENT, INC. (the Company), are warranted to be free from defects in materials and workmanship under normal use. If a product sold by the Company proves to be defective, the Company will repair or replace it free of charge within the first year and thereafter all parts to be repaired will be free with only a nominal charge for Omega Research and Development, Inc.'s labor and return shipping, to the original owner during the lifetime of the car in which it was originally installed.

All products for warranty repair must be sent postage prepaid to Omega Research & Development, Inc., P.O. Box 508, Douglasville, Georgia 30133, with bill of sale or other dated proof of purchase. This warranty is nontransferable and does not apply to any product damaged by accident, physical or electrical misuse or abuse, improper installation, alteration, any use contrary to its intended function, unauthorized service, fire, flood, lightning, or other acts of God.

This warranty limits the Company's liability to the repair or replacement of the product. The Company shall not be responsible for removal and/or reinstallation charges, damage to or theft of the vehicle or its contents, or any incidental or consequential damages caused by any failure or alleged failure of the product to function properly. Under No Circumstances Should This Warranty, Or The Product Covered By It, Be Construed As A Guarantee Or Insurance Policy Against Loss. The Company neither assumes nor authorizes any person or organization to make any Warranties or assume any liability in connection with the sale, installation, or use of this product.

This device complies with FCC Rules part 15. Operation is subject to the following two conditions, (1) This device may not cause harmful interference and, (2) This device must accept any interference that may be received, including interference that may cause undesired operation.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.