



## **CruiseTV® STS / RV Version**

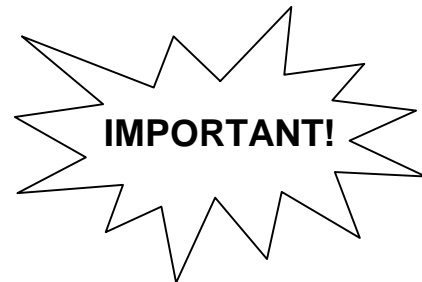
### **In-Motion Satellite Television System**

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## **User's Guide**

Includes:

- 100 Series Antennas
- 200 Series Antennas



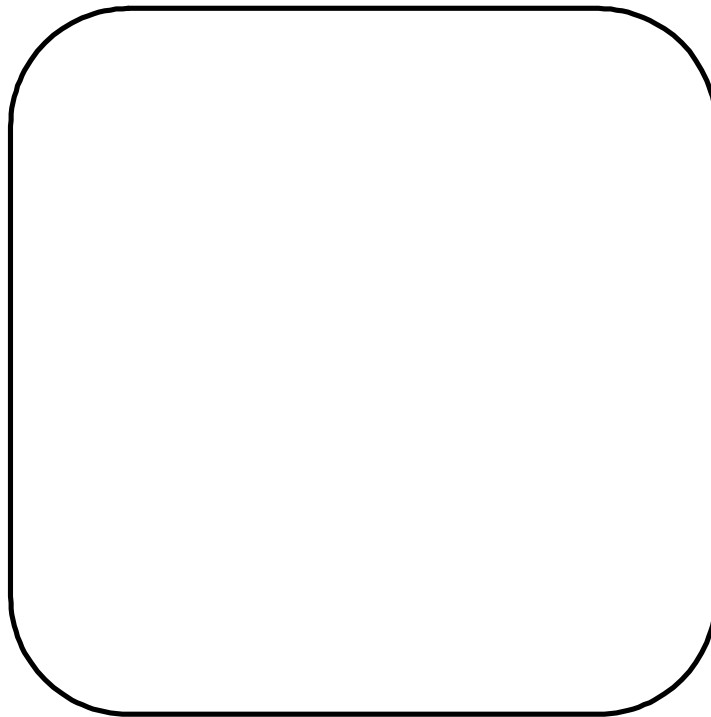
**DO NOT OPERATE THIS SYSTEM  
WITHOUT FIRST READING  
SECTIONS 3 & 7 OF THIS MANUAL.**



# NOTICE!!

## Important Warranty Information

Keep this User Guide with the Antenna System at all times.



For Customer Service, contact an Authorized Service Center nearest you, or call Datron at 1-(800)-287-5052.

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## **1. Introduction**

Thank you for purchasing CruiseTV® STS. You now own the most advanced automatic satellite system available, providing access of more than 200 channels of digital television and CD quality audio programming while your vehicle is in motion. The STS is specially designed for Direct Broadcast Satellite (DBS) television viewing while traveling on highways and thoroughfares in the lower 48 states when your antenna has a clear view to the southern sky.

### **1.1 What to Expect While Operating the STS**

The STS works best on open stretches of road, but may surprise you with its in-town capabilities. As you drive your STS you will learn its characteristics and how it works best for you. If you encounter any conditions that you don't expect, just contact us at 1-800-287-5052 and we will discuss them with you.

### **1.2 Features of your STS**

- ◆ Automatic signal acquisition from anywhere in the Continental United States on roads with an unobstructed view to the DBS satellite in the southern sky.
- ◆ Automatic satellite tracking and TV viewing while your vehicle is in motion
- ◆ Low profile – only 9.5" tall
- ◆ Continuous slip ring operation
- ◆ Compatibility with all DirecTV type receivers
- ◆ Power conservation mode when vehicle is parked
- ◆ On-board compass locates satellite quickly
- ◆ Instant ON mode

This User's Guide describes the operation and use of the STS satellite system. Operation of your satellite receiver is covered in your receiver's operating instructions.

Please take the time to read this booklet completely. Your new CruiseTV STS system by Datron represents the very latest in satellite tracking technology. Therefore it is very important that you understand the proper operation of both your receiver and your satellite antenna system.

## **2. System Overview**

Your Datron STS is specifically designed for use with the new high-power DBS television satellites. These satellites have revolutionized television in the United States and have made DBS television receiving systems the fastest selling consumer electronics product in history.

The STS has been designed for simplicity of operation with the latest solid-state satellite tracking technology and advanced computer software, providing you with true value and years of entertainment enjoyment. There are three main components to the satellite system as discussed below.

### **2.1 Antenna/Radome Assembly**

The STS uses a specially designed 4 dish x 8" phased array and an LNBF to receive the DBS satellite's signals. The antenna and its drive motors are covered by a low-profile protective cover called a radome. The dish is automatically and continuously pointed at the satellite by the antenna control electronics while the vehicle rolls down the road. The radome is specially designed and molded from a material that is strong and lightweight and must **not** be painted with metallic based paints. The metallic content of many paints will severely impair system performance.

### **2.2 Antenna Control Unit (ACU)**

The ACU is located under the radome. The ACU contains the motion sensing electronics that keeps the antenna accurately pointed at the satellite as the vehicle turns, sways and rolls over bumps. Your only interface with the ACU is "ON" or "OFF" through the remote switch in your vehicle.

### **2.3 Satellite Receiver**

The final component part of the system, other than your television monitor, is the satellite receiver. Please note that Datron does not manufacture receivers. All DirecTV type receivers are compatible with the CruiseTV STS.

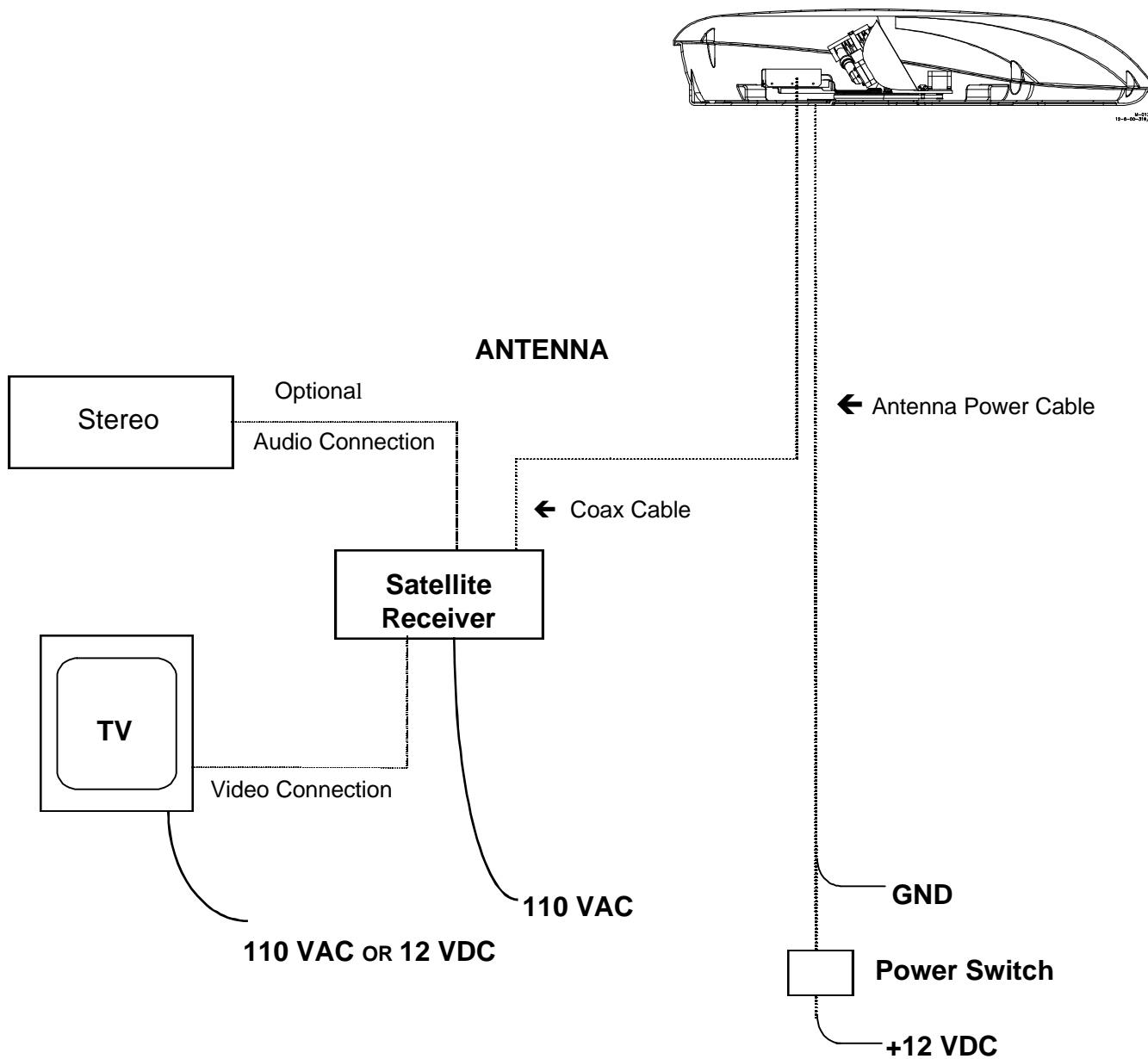


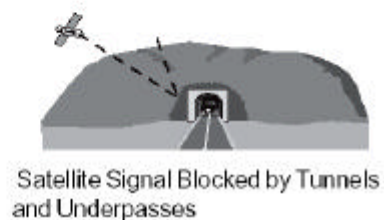
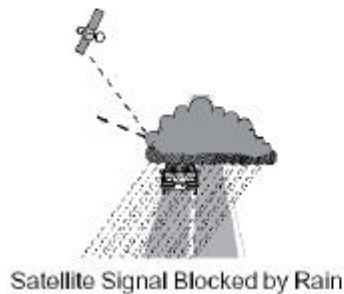
Figure 1. Diagram of STS System Connections

### 3. System Operation

This section describes the operation of the STS satellite system. It does not focus on the operation of the receiver, except where it pertains directly to the operation of the STS satellite system. For questions about your satellite receiver, refer to the receiver's operating instructions.

#### 3.1 General

The satellite system must have an unobstructed view of the southern sky. Mountains, buildings, overpasses, trees and other objects can block the satellite's signal from reaching the antenna and will result in signal dropouts. If the signal is blocked, the antenna will continue to track the satellite at its last known position. Re-acquisition should occur within seconds in most cases. If blockage is sustained for long periods of time (e.g., going through a tunnel) re-acquisition may take several minutes. For situations where there is blockage or loss of satellite signal for five (5) minutes or more, the system power should be shut down, the blockage cleared, and the system restarted. This will reboot the system, and restart the initialization process. Satellite acquisition should occur within one (1) minute. Sharp turns of the vehicle at accelerated speeds or sharp bumps and dips may also cause the antenna to briefly lose the satellite signal. This is normal operation.



### **3.2 Powering On the System**

To apply power to the system, toggle the power switch to the ON position. It is recommended that your vehicle remains stationary when first acquiring the signal. Dropouts for the first few minutes may occur if the vehicle is in motion while the system is initialized. To turn off power, return the power switch to the OFF position.

### **3.3 First Time Start Up**

The first time the STS is turned on after installation it may take several minutes for the unit to acquire the satellite. This initialization feature determines where you are geographically with respect to the satellite. Once the system is initialized, the STS will remember where you are and continually update your position as you move. Future start-ups will use this information to minimize acquisition time.

If the vehicle is moved great distances (several hundred miles), with the STS turned off, a new location finder mode will be automatically entered and the initialization may take a little longer than normal. This new location will then be stored for all future start-ups.

### **3.4 Automatic Satellite Signal Acquisition and Tracking**

Satellite signal acquisition and tracking is fully automatic. No action on your part is necessary. It is recommended that the initial signal acquisition of the satellite be done when the vehicle is not moving. Initial acquisition will occur in less than three (3) minutes. Subsequent re-acquisitions will occur in less than one (1) minute.

The rest of this section describes what to expect during the acquisition and tracking process.

Immediately after the system is turned on the message “Searching For Satellite” will appear on the video monitor. When the vehicle is stationary, satellite lock will occur in less than 1 minute. If the vehicle is moving during acquisition, satellite lock may not occur for several minutes.

When a signal has been located, your receiver will begin displaying the programming for the selected channel and the STS will automatically begin tracking the satellite.

During the tracking process, you may experience a momentary loss of picture. This behavior is normal. Your picture will return within a few seconds.

### **3.5 Power Conservation Mode**

If the vehicle has remained stationary for approximately ten (10) minutes with the unit on, it will automatically enter a reduced power mode and the antenna will stop moving. Once the vehicle is placed in motion the unit will automatically revert back to its tracking mode. A momentary loss of picture may occur during transition from Sleep to Track mode.

### **3.6 Instant On Mode**

You may also turn power off and continue to watch television if the vehicle is stationary. The antenna will remain pointing at the satellite when power is reapplied. After power on, picture and sound may take 10 seconds to stabilize before vehicle can be moved without losing track.

### **3.7 Operating Tips**

- ◆ To minimize signal dropouts in the first few minutes of use it is best to allow the STS to warm up for one (1) minute before placing the vehicle in motion.
- ◆ The antenna may be started while the vehicle is in motion. However, the vehicle should be moving in a straight path for best results. Allow approximately three (3) minutes to locate the signal while the vehicle is in motion. You may acquire the signal while traveling up or down a grade as long as the vehicle is moving in a straight path.
- ◆ When stopping in an area where the antenna will be blocked from the satellite (i.e., gas stations, parking structures, heavy foliage, etc.) it is recommended the antenna be turned off and restarted when the antenna's line of sight to the satellite is clear.
- ◆ When the vehicle is stationary for long periods of time, turn antenna system off after acquiring signal. Turning system off will reduce power drain and extend operating life of antenna and vehicle battery.
- ◆ If the antenna loses track for five (5) minutes or more switch the power off and on again to reboot the system.
- ◆ Sharp turns or curves at high acceleration may result in brief signal loss. This is normal operation. Signal should reappear in a few seconds.
- ◆ Do not attempt to remove the radome (cover). Water and/or dirt may cause contamination and or serious damage to the unit and void your warranty.
- ◆ Clean the outside radome surface of bugs, debris and other contamination with water and a mild detergent periodically.

- ◆ In heavy dew conditions operation can be optimized by wiping the excess moisture from the radome or just spraying the unit off with a water hose. The vehicle may be driven to blow the moisture from the radome. It is recommended that the antenna radome be treated with water repellent to minimize moisture buildup. Below is a list of products and availability.

Name	Stock No.	Availability
SCOTCHGARD™ Heavy Duty Water Repellent for Outdoor Fabrics	5014S	Major Grocery Chains Hardware Stores
KIWI™ Camp Dry™ Performance Fabric Protector	216000	Home Improvement Centers Military Exchanges, Commissary's
THOMPSONS™ Water Seal™ Sports Seal Outdoor for Fabric and Leather	10507	Major Sporting Goods Stores Fishing/Outdoor Stores Hiking/Backpacking Stores
TECTRON™ DWR™ Wet Guard™	941220	Ski Shops Department Stores that carry camping or fishing equipment

## 4. Regular Service and Preventive Maintenance

CruiseTV STS has been designed for trouble-free operation. You can enhance the life of your equipment by having an authorized ASA dealer inspect and service your antenna system once a year. To locate the authorized dealer nearest you, contact ASA at 1-800-287-5052.

## 5. Specifications

### 5.1 Mechanical

Antenna (Phased Array)	.....	4 dishes x 8" dia.
Operating Temperature	.....	-10°F to 125°F
Operating Wind Level	.....	No Limit
Radome Height (Beta)	.....	9.5"
Radome Outline (Contoured)	.....	40" W x 47" L
Radome Outline (Full Swept)	.....	39" diameter
Antenna Movement, Elevation	.....	20° to 66° Elevation
Antenna Movement, Azimuth	.....	Unlimited
Weight on Roof	.....	35 lbs.
Mounting Plate Footprint	.....	30" W x 34" L

### 5.2 Electrical

Operating Voltage	.....	10 VDC minimum; 16 VDC maximum
Operating Current	.....	2.0 Amps DC Nominal
	.....	3.0 Amps DC Maximum

## 6. Troubleshooting

Error conditions are described in Table 1 and possible solutions are indicated for each symptom. If you have trouble and cannot resolve it with this guide, contact your ASA dealer or call 1-800-287-5052.

<b>Table 1. Error Conditions and Solutions</b>			
<b>Symptom</b>	<b>Indication</b>	<b>Cause</b>	<b>Possible Solution</b>
Does not acquire	No screen display	<ul style="list-style-type: none"> <li>• Switch not turned on</li> <li>• Monitor not turned on</li> <li>• Receiver not turned on</li> <li>• Battery dead</li> <li>• Power not connected to battery</li> <li>• Antenna not connected</li> <li>• Bad switch</li> </ul>	<ul style="list-style-type: none"> <li>• Turn on switch</li> <li>• Turn on/plug in monitor</li> </ul> Turn on/plug in receiver <ul style="list-style-type: none"> <li>• Recharge/replace battery</li> <li>• Connect power to battery</li> <li>• Connect missing/loose cable</li> <li>• Replace switch</li> </ul>
	“Searching for Satellite” continuously displayed on monitor	<ul style="list-style-type: none"> <li>• View is obstructed</li> <li>• Antenna coax not connected</li> <li>• Radome covered with debris</li> <li>• Initialized during excessive motion</li> <li>• Radome covered with moisture<sup>1</sup></li> <li>• Compass out of calibration</li> </ul>	<ul style="list-style-type: none"> <li>• Move vehicle to new location</li> <li>• Connect all cables</li> <li>• Clean radome</li> <li>• Stop motion during initialization</li> <li>• Spray radome with hose, or wipe excess moisture from radome, or drive vehicle to remove moisture coating</li> <li>• Re-calibrate compass (see Section 7).</li> </ul>

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<sup>1</sup> Apply water repellent per Section 3.7.

**Table 1. Error Conditions and Solutions**

<b>Symptom</b>	<b>Indication</b>	<b>Cause</b>	<b>Possible Solution</b>
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Picture drops out	Momentary freeze frame	<ul style="list-style-type: none"> <li>• View obstructed</li> <li>• Large vehicular motion</li> </ul>	<ul style="list-style-type: none"> <li>• Normal operation</li> </ul>
	Continuous freeze frame	<ul style="list-style-type: none"> <li>• Receiver malfunction</li> </ul>	<ul style="list-style-type: none"> <li>• Turn receiver off and on</li> </ul>
	Picture pixeling	<ul style="list-style-type: none"> <li>• View obstructed</li> <li>• Large vehicular motion</li> </ul>	<ul style="list-style-type: none"> <li>• Normal operation</li> </ul>
	“Searching for satellite” displayed on monitor	<ul style="list-style-type: none"> <li>• Long time view obstruction or</li> <li>• Very large vehicular motion</li> </ul>	<ul style="list-style-type: none"> <li>• Normal operation; picture should return within three minutes</li> <li>• Reboot system</li> </ul>

## **7. Compass Calibration**

There are two methods that can be employed to calibrate the STS antenna compass board. The first, described in Section 7.1 below can be performed by any installer with no additional equipment required. The second method requires a Windows 95 or newer computer, a down load cable, and special software.

### **7.1 Calibrating the Compass without a Computer**

To calibrate the antenna without a computer and test port cable, the antenna must be placed in reset mode. Reset mode is invoked by cycling the antenna power switch five times (on for ten seconds, off for two seconds). At the end of this power reset the antenna will auto calibrate the rate sensors and place the antenna in compass calibrate mode. To calibrate the antenna simply turn the vehicle in a slow circle. It is better to over turn, more than 360°, than to under turn and not calibrate correctly. Calibration must be completed within three minutes. Failure to complete a full circle within the specified time will result in a calibration failure. Do not move the vehicle or cycle power to the antenna until this time as elapsed. Once calibration has been completed the antenna will automatically enter search mode and locate the correct satellite. If the antenna does not locate the satellite within 10 minutes, repeat the calibration process.

**IMPORTANT** – During compass calibration, the software will also calibrate the antenna phased array cold sky readings. To ensure proper calibration of the phased array, reset the DirecTV receiver, **before beginning the compass calibration**, by unplugging the power for 30 seconds. Alternatively, the receiver can be placed in “Searching for Satellite” mode for three minutes before beginning the calibration routine.

## **8. Precautions**

- ◆ Do not open or remove any part of the antenna control unit or the antenna/radome assembly. There are no user serviceable parts inside.
- ◆ Operate the antenna system on a clean, continuous 12 VDC supply only. Large fluctuations in voltage can degrade performance. **OBSERVE PROPER POLARITY ON THE POWER CONNECTION.**
- ◆ To locate the authorized dealer nearest you, or if you are in need of assistance, contact Datron/Transco Inc. Customer Service Department at 1-800-287-5052.
- ◆ Turn antenna system OFF after acquiring signal if vehicle is to be stationary for a long time. Power off will reduce power drain and extend operating life of antenna and vehicle battery.
- ◆ Automatic car or bus washing equipment should not be employed while the antenna is mounted on the vehicle. Rotating brushes or chamois wheels can deflect the antenna radome and damage the phased array dishes.

## 9. Glossary

The following is a glossary of terms used both within this User Guide and when talking about digital satellite television systems and DIRECTV<sup>®</sup>.

**Azimuth** – refers to the azimuth axis, indicating the rotating movement of the antenna about an axis perpendicular to the surface. Looking down on the antenna from above, the azimuth movement is either clockwise or counterclockwise.

**DBS** – Direct Broadcast Satellite. A special high power TV satellite that broadcasts to 18” dishes.

**Satellite Receiver** – an electronic device which decodes and processes the DBS data. Usually, this data produces a viewable picture which can be displayed on a television set.

**Elevation** – usually refers to the elevation axis, indicating a rotating movement of the antenna about an axis parallel to the surface.

**Elevation Angle** – the angle between the surface and the antenna’s pointing angle. The values can range from 0° (parallel with the surface) to 90° (straight up in the sky) to 180° (parallel with the surface again, but in the opposite direction from 0°.)

## **10. Limited Warranty**

Datron/Transco Inc. (“Manufacturer”) warrants to the buyer who purchases this DBS Antenna (“Product”) for his own use and not for re-sale, that the Product will be free from defects in materials and workmanship for a period of (2) years’ parts and (1) year labor, from date of installation. To obtain repair or replacement within the terms of this warranty, the Product is to be delivered with proof of warranty coverage (e.g. dated bill of sale), specification of defect(s), transportation prepaid to the company at the address provided by Customer Service. This warranty does not cover any defects that result from improper installation, misuse, neglect, accidents, or repairs performed by an unauthorized repair facility. This warranty shall be invalid if the factory-applied serial number has been altered or removed from the Product. Also, consequential and incidental damages are not recoverable under this warranty. Some states do not allow the exclusion or limitation of consequential or incidental damages, so the foregoing limitation may not apply to the buyer. The Manufacturer’s sole obligation under this warranty is, at the manufacturer’s option, to repair, replace or correct any defect that was present at the time of installation of the Product.

This warranty does not extend to the elimination of externally generated static or noise, to correction of antenna problems, to costs incurred for installation, removal or reinstallation of the Product, or to damage to speakers, accessories or vehicle electrical systems.

**NO WARRANTIES, EXPRESSED OR IMPLIED, OTHER THAN THOSE SET FORTH ABOVE, ARE GIVEN IN RESPECT TO THE PRODUCT, AND ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE IS HEREBY EXPRESSLY DISCLAIMED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE FOREGOING LIMITATION MAY NOT APPLY TO THE BUYER. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.**

In order to be eligible for service under this warranty, the buyer must return the Product to an authorized repair facility. To locate the nearest authorized repair facility, contact Customer Service at 1-800-287-5052.