

# Getting Started Guide

## Model 8200 Commercial Web Portal



**A guide to setting up and using the features of your  
Mobile Monitoring Portal and Asset Beacon**

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## Safe Handling of Your 8200 Beacon

Your 8200 beacon is manufactured to exacting standards and is thoroughly inspected and tested prior to delivery. However, it must be used as intended to provide safe and reliable service. The following warnings are intended to ensure that incorrect usage is avoided.

- Never attempt to disassemble your 8200. If service or repair is required, return the unit to your supplier or another authorized GMMS service center. There are no user serviceable parts inside.
- Use only GMMS approved accessories or optional equipment. Use of incompatible equipment could result in fire, electric shock, or bodily injury.
- Never allow children to play with the 8200 or its components or accessories.
- Never store or transport flammable liquids, gasses, or explosives in the same compartment as your 8200 or any of its components or accessories.
- Always secure your 8200 and its accessories. Never place the units anywhere they can become projectiles during a collision or sudden stop.
- Never expose your 8200 to high temperatures such as those found near a heater or engine components. This can cause heat damage to the plastic components, the electronic components, the wiring, and the battery.
- Never drop your 8200 or expose it to impact or shock. This can cause mechanical damage.
- Never use harsh chemicals, cleaning solvents, or strong detergents to clean your 8200.
- Never attempt to dispose of your 8200 by throwing it into a fire.
- Ensure no power is connected and your 8200's battery is disconnected prior to transporting by air.
- Do not proceed into areas posted "Turn Off Two-Way Radios", such as blasting areas.
- Never connect your 8200's battery to a charger other than one specified by GMMS.
- Never connect your 8200's battery to anything other than the 8200.

## Introduction

Congratulations on your purchase of the 8200 GPS tracking beacon. With your 8200 beacon and Mobile Monitoring Portal you will have unprecedented access to information about your asset and its usage.

The 8200 is a powerful GPS tracking beacon that, when used in conjunction with the web software application, provides an end-to-end solution for a variety of tracking needs.

The location technology built into the 8200 is the most advanced in the world. By combining GPS satellite information with cellular triangulation, this beacon can be located in challenging signal environments, including many places indoors.

This guide is intended to be used after your beacon has been provisioned and set up by your provider. This guide will assist in verifying the operation of the beacon and will guide you through the steps necessary to operate the self-serve features that are accessible via your portal.



## System Requirements

In order to access the system, your computer must meet the following minimum requirements:

- Windows XP (Home or Professional) or Windows Vista
- Pentium IV or newer with a 1Ghz or faster processor
- At least 512 MB of RAM
- Internet Explorer 6.0 or greater with Service Pack 2 or newer
- Broadband internet connection

The system may also be used with Macintosh, Linux and Unix computers running a standard web browser such as Firefox (version 2.0 or greater); however the system has not been certified for these platforms and some functions may not work as described in this guide.

Please note that if you do not have Internet access, or choose not to use any self-serve features, all data can be entered and all functions can be operated on your behalf by an authorized operator using their Mobile Monitoring System. If you have not already done so, arrange a secret Passcode with your supplier to authorize their operators to access your account.

It is also important to understand that the Mobile Monitoring System uses web-based software applications which may be upgraded from time to time. For this reason, some aspects of this document may not represent exactly how the system works at the time you are using it. For the latest system information, consult the Help system within the portal.

You should keep this guide in a safe place for future reference. It is also recommended that you take a moment to write down your beacon's Electronic Serial Number (ESN) on the back page of this guide. The ESN number can be found on the beacon label (under the battery) and on the packing box.

## Provisioning

If the beacon has been registered in your supplier's Mobile Monitoring System correctly, and assigned to your account properly, the system is immediately ready to use. At the time of registration, the operator created an account for you by entering the following minimum data into the Mobile Monitoring System:

**Your Name**  
**Your desired Login ID, Password, and secret Passcode**  
**Your Primary Address**  
**Your Primary Phone Number**

This information can be edited at any time via your own Portal by navigating to the Administration section and choosing the Profile link from the left hand side.

## Logging In

To access your Portal use a web browser on a computer connected to the Internet and navigate to the URL provided by your supplier. Enter your username and password into the appropriate fields on the login screen, then select the login button.

## Setup

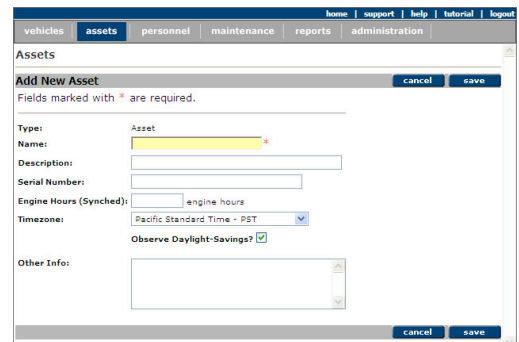
To use the beacon's functions, it must first be assigned to an asset. Before it can be assigned, the asset must be defined in the Mobile Monitoring System via your Portal.

Define the asset by selecting the Assets link from the navigation. Next, select add asset and then fill in the required details describing the asset. When all the details have been entered, click the save button. The assets page will appear again, this time with your asset displayed in the list.

If pictures of your asset are available in electronic format they can be added to the system, and can be useful in identifying and recovering the asset in case it is stolen. To upload a picture, select the Manage link under the pictures column, then select the add picture button. Fill in the required descriptions of the picture, and the path to where the picture file is located (this can be accomplished by browsing your computer's files). If additional pictures are to be added, select the add picture button and repeat the process.

**TIP:** Photos of assets of the same make, model and color as yours may be adequate. These are often available on a manufacturer's web site.

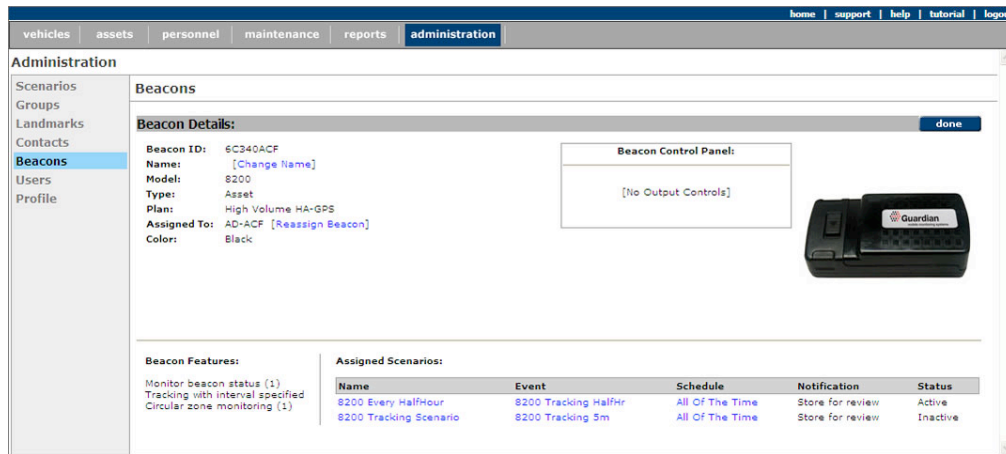
**NOTE:** Pictures should be in JPEG, GIF or BMP format, and must be no more than 500Kb each.



To assign a beacon to the asset, select the administration tab from the top of the Mobile Monitoring Portal, then select the Beacons button from the left-hand navigation block of your Portal. The Beacons page will appear containing a list of all beacons registered to you.

If no beacons appear on this page, the supplier has not registered the beacon(s) to your account correctly. Contact your supplier.

Under the first column, labeled Beacon ID, select the Beacon ID corresponding to the ESN of the 8200 beacon that was installed in your asset (you can verify the ESN number by checking the beacon label or the packaging your beacon came in). A page representing the selected beacon will appear. Select the Assign Beacon link. This will lead to a page that lists all assets available for assignment. Select the radio button beside the asset's name, then select the save button on the page. This will cause the Beacons page to appear again, this time with the asset listed as associated with the beacon.



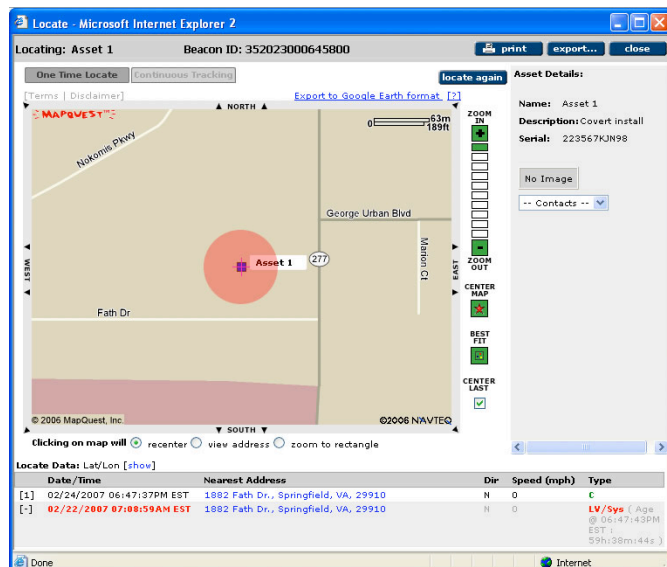
## Testing

To test the complete system, a single point locate can be performed. This function will plot the current location of the beacon on a map and verify that all components of the system are functional.

Be sure the beacon is powered and within cellular coverage. See the "Beacon Overview" section for a description of the beacon button and LED functions to ensure that the batteries are charged and the beacon is within cellular coverage.

For the first test, the asset should be outdoors in an open area where GPS signals can be readily received.

**NOTE: The 8200 beacon must be activated by your service provider before it will function correctly. If your beacon cannot be located, or if the LED is not reporting correctly, your beacon may not have been activated correctly.**



As a full test of your system, select the Assets link from the top navigation block of your Portal. On the far right-hand side of the asset's row are links called Locate/Track. Select Locate and a map window will appear.

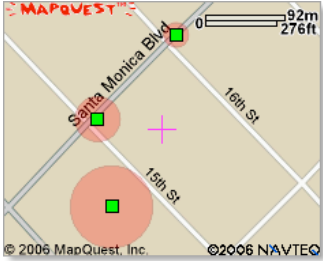
The map window will display a frame for a map on the left side, and all the identification information about the asset on the right side of the screen. Initially the system will be searching for the asset's location by polling the beacon. This may take more than a minute. When the location is acquired, the corresponding map is displayed with the asset's location indicated by an icon at its center (Note: there is a selection of available icons to choose from in the Asset details section of the portal). Along with the location is additional information such as the nearest street address and the date and time when the location was established. The map controls allow you to pan and zoom to the desired resolution. If the map correctly displayed your asset's location within the "Circle of Certainty", your beacon is functioning correctly and all features of the system will be functional.

As additional tests, you may want to move the beacon indoors, or into other challenging environments to see how the beacon performs, and how the Circle of Certainty changes in size.

## Locating and Tracking

You can use your portal to perform a single point locate or put the beacon into an automated tracking mode. While in automated tracking mode, the system will request an updated position from the beacon every 2 to 3 minutes, which is as fast as the network can return updated location results. The system will occasionally ask you to confirm that you wish to continue the tracking session. This is done to prevent cases of runaway tracking.

## Circle of Certainty (Location Accuracy)



The Circle of Certainty represents a measure of accuracy for each locate point from your 8200. If you beacon is in a good signal environment where it can receive abundant GPS signals, the circle around the beacon icon will be small, indicating that the location is highly accurate, and that there is a 95% probability that your beacon is within that circle. As your beacon moves into more challenging GPS environments, the size of the circle will increase, indicating a larger degree of error in the location calculation. While more error may not be ideal for all applications, the advantage is that in these challenging signal environments the 8200 is able to calculate a locate, whereas other GPS devices will simply fail.

The size of the circle will be small or large depending on how the location is being calculated. Rough guidelines are as follows:

Accuracy	Fix Type	Location Calculation	Typical Environment
0 – 50 yards	GPS fix	The beacon is receiving abundant GPS signals	Outdoors
51 to 300 yards	Assisted GPS fix	The beacon is receiving partial GPS signals. The location calculation is being aided by the cellular network.	Partially indoors, or in an obstructed environment (metal roof, heavy foliage, inside a vehicle).
301 yards or greater	Cell tower fix	No GPS signals are available. The location calculation is being completed entirely by the cellular network.	Indoors or in a completely obstructed environment.

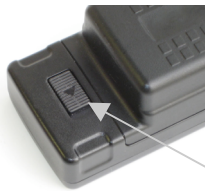
## Beacon Overview



The 8200 beacon is a self-contained device, and does not require any additional antennas or components to function in the field. An AC power adapter is required to charge the unit. It is not waterproof or weatherproof, so a sealed case must be utilized if the beacon is intended for outdoor use.

### Connecting the Battery

To connect the battery, line up the edges of the battery to the rails on the main module of the beacon, and gently slide the battery into place. The battery should click firmly into place. Once the battery has been attached, the beacon will immediately power on if the battery has any charge. There is no “On/Off” button on the 8200.



To remove the battery hold the battery release open and slide the battery out. This may require some additional effort for the first few attempts until you are used to the action.

Battery release

### Battery Life and Management

Your 8200 is equipped with either a 1800mAh or a 3600mAh battery. The sections below provide some additional details on how to get the best performance from your beacon.

#### Charging the Battery

To charge the battery, plug the AC adapter into the port on the end of the beacon, and plug the AC adapter in the wall. Charging time will vary depending on the state of the battery, but the following table outlines the approximate charging times.

	1800 mAh	3600 mAh
Charge time (from fully depleted)	3 hours	5 hours

## Battery Performance

Many factors can influence how long your battery will provide a charge, including the battery capacity, how many times the battery has been charged and discharged, ambient temperature, cellular coverage strength, and frequency of locates. The table below provides a rough guideline for what you can expect for battery performance.

Locate frequency	GPS Signal Environment					
	1800 mAh			3600 mAh		
	Poor	Average	Good	Poor	Average	Good
Every 60 mins	6 days	9 days	15 days	12 days	19 days	30 days
Every 30 mins	5 days	9 days	14 days	10 days	18 days	28 days
Every 15 mins	4 days	8 days	13 days	8 days	15 days	26 days
Every 5 mins	2 days	5 days	10 days	4 days	10 days	21 days
Every 1 min	14 hrs	2 days	6 days	1 day	4 days	13 days

## Button Actions

The 8200 has a small button on one side that can be used for a variety of functions. Each function and its corresponding LED pattern is outlined below.



Button Action	Solid Green	Flashing Red	Solid Red
Cellular Coverage (press and hold for 2 seconds)	On network	-	Off network
Battery Status (press and hold for 4 seconds)	Good	Charge soon	Charge immediately

## Installing and Mounting the 8200

The 8200 uses the most advanced location technology in the world, but its performance is still subject to the installation or mounting environment and the signals can be blocked by metal, thick concrete and other



materials that typically block cell phone signals. The accuracy of the location report will increase as the beacon can see more open sky. Remember that you can check the availability of cellular signals by pressing the button for 2 seconds.

The 8200 is not weather or dust resistant, so if you wish to use the beacon outdoors you must enclose the beacon within a weatherproof enclosure, such as a Pelican case or an Otter Box. Standard magnets will not affect the performance of the 8200, so the use of an enclosure with a magnet is acceptable. Take care to avoid placing the 8200 in direct sunlight, as heat can cause damage to the unit.

## **Setting up Automated Reports and Scenarios**

### ***Overview of Scenarios***

Scenarios allow you to remotely program the functionality of your beacon through your web interface. Within the Scenario Manager, you create Scenarios, which are made up of Events, Schedules and Notification Groups. Each component of a scenario acts like a building block that can be created once and reused across a variety of scenarios. For example, the Scenario Manager can help you create scenarios to track your assets during scheduled times, to generate a notification of a zone violation, or to alert you if the battery is low. See the Example Scenarios section for more ideas on how to use the Scenario Manager.

To create a Scenario, you must first create an Event, a Schedule, a Contact, and a Notification Group. You then associate these components together, creating a complete Scenario. Once a scenario is created, it can be assigned to one or more items at any one time.

### **Events**

The 8200 supports the following events:

- **Interval Tracking:** defines the interval at which the 8200 will automatically report its location. Note that increasing the frequency of the tracking interval will increase the number of messages used, and decrease the battery life.
- **Zone Monitoring:** set the area where your beacon is allowed or not allowed to be. Each time the beacon reports a position, the system will check to see if it is inside or outside of the zone. Note that an interval tracking scenario must be assigned to the 8200 in order for Zone Monitoring to operate.
- **Status Report:** set the frequency with which the beacon will report its status. Increasing the reporting frequency of the status will improve how quickly you will detect a low-battery situation, but this will also have a slight negative impact on the battery life.

To create an event in the portal, navigate to the Administration tab, select the Scenarios link on the left, and then click on the Events tab. Click [add event](#) to create a new event, and then follow the on-screen instructions.

### **Schedules**

The Scheduling module allows you to create a variety of schedules to meet your needs. Schedules can be set for a simple one-time schedule, recurring schedules, or an all-the-time schedule for 24/7 operation.

Once in the Scenario Manager section of the portal, click on the Schedules tab, and click the [add schedule](#) button to create a new schedule.

## Contacts and Notification Groups

Notification Groups allow you to set up different groupings of contacts that can be alerted via email or cell phone text message in the event that your beacon violates your set parameters. Notification Groups are made up of various Contacts, which must be set up first.

To create a Contact, navigate to the Administration tab, select the Contacts link on the left, and then click on the [new contact](#) button. Fill in the appropriate contact information.

Once you have created your necessary contacts, click on the [new notification group](#) button and follow the on screen steps to create your group. Note that you must create a notification group if you wish to receive alerts from the system. Even if you only wish for a single contact to receive the alert, you still must create the group for the single contact.

If you do not wish to be notified of scenario events (eg. you just want data to be stored in the database for review), then you do not need to set up any contacts or notification groups.

## Creating a Scenario

Once you have created the necessary Events, Schedules and Notification Groups, you must tie them together in a Scenario. To do this, navigate to the Scenario Manager section, and click on the Scenarios tab. Click on the [add scenario](#) button and follow the on screen steps. You will notice that your named Events, Schedules and Notification Groups all appear in the drop lists on this page. If you did not set up any notification groups, then "Store for Review" will be available as the only choice of notification group. Choose the appropriate selections and click on the [save](#) button to save your Scenario.

When the page refreshes you will have the option to assign your scenario to one or more assets. Click on the [assign items](#) link, and then simply check the boxes to the left of each asset you wish to assign, and click on the [assign](#) button. When you are finished click the [done](#) button to return to the main Scenario page.

Repeat these steps for each Scenario you wish to create. For additional information on how to configure scenarios, please consult the online help system.

## Example Scenarios

Below you will find some examples of scenarios you could create with the scenario manager module.

- Create an **interval tracking** scenario to track your assets every 60 minutes (event) from 8am to 5pm, Monday through Friday (schedule) with each locate point being stored in the system for your review (notification). Assign the Scenario to your 10 assets.
- Create a **zone** alert around the yard where the asset is stored (event) that is on all of the time (schedule) with alerts going to the security director and the guard service (notification). Assign the Scenario to the 15 assets in the field.
- Create a **status** scenario that reports battery status every 6 hours (event) that is on all of the time (schedule) with alerts going to the security director and shop manager (notification). Assign the Scenario to all of the assets.

## Unassigning and Deactivating Scenarios

If you wish to turn a Scenario off, or otherwise temporarily deactivate a scenario, go to the Scenario page and click on the [Assign Items](#) link. In the top section of the page that displays the list of active assets, check the box next to the assets you wish to deactivate, and click the [deactivate](#) button. You can leave the asset in a deactivated state if you wish to later reactivate the scenario for this asset.

If you wish to delete the scenario you must completely unassign all assets from the scenario by clicking on the checkbox beside all assigned assets, and then click on the [unassign item](#) button. Click on the [done](#) button and you should now see a small trash can icon beside the Scenario, indicating that you can delete it. Note that deleting a Scenario does **not** delete the associated events, schedules or notification groups.

## Reports

There are a variety of reports in the system that are useful to review stored data. The following reports are the reports that you will likely use the most often:

- Fleet Status: Provides a quick snapshot of the last known location for one or more selected items.
- Route Log: Shows an item's route for a selected time period with address data, and a map view.
- Message Usage: Provides a summary of message usage for selected items for the selected time period.
- Event Detail: Provides a detail view for one or more events for selected items, for a selected time period.

## Learning about your system

There are many additional features and functions of your mobile monitoring portal, some of which may not be immediately apparent. A [Help](#) button is also available near the top right-hand corner of most pages of your portal.

If you have questions or concerns that are not answered by the help system, additional information may be available at your supplier's web site. If these resources do not provide sufficient information contact your supplier.

## Tips for using your system

The following information provides a better understanding of how the Mobile Monitoring System works and why it works as it does. As you gain experience with the system, these tips will help you get the most from the system.

### When to call your supplier – and when not to call

Call your supplier any time you need their assistance to remotely locate your asset or to recover it if it has been stolen. Find out if they have a policy about calls for other kinds of assistance.

If you choose not to use your Internet accessible mobile monitoring portal, call your supplier any time you need to make changes to your contact information.

If you use the self-serve features available through your portal, do not call your supplier to learn how to use its features and functions. Use the [New User Guide](#), accessible from your home page, and the [Help](#) link accessible from most pages of your portal. Only call your supplier if you are convinced that the Mobile Monitoring System or your beacon is not working *after* you understand how it is supposed to work.

## **System Updates**

The Mobile Monitoring System is updated from time to time. Updates may include new or improved features as well as revised map data. The web-based nature of the system enables this automated upgrade aspect but it may also cause certain information in this document to be out of date at the time you are using it. The system's built-in [Help](#) pages will be updated as other upgrades are launched, so this will be the best source for ongoing up-to-date information.

## **Function Delays**

There are many reasons why there are delays in some system functions such as determining the location of your asset. It may take up to two minutes for a one-time locate, and this is normal. Continuous tracking generally provides location updates more frequently but may also experience periodic delays. The greatest part of the delay is the time it takes for the cellular network to establish a connection with your beacon. Additional delays may come from the GPS position calculation, congestion on the wireless network, and from Internet data traffic congestion.

## **Reliability and Accuracy of Location Data**

Remotely locating your asset can only be done when the asset is within range of cellular network coverage. Your 8200 communicates over the most widely available combination of cellular networks in North America but there are still some areas where no coverage exists, typically remote areas. Cellular signals may also be blocked by enclosed spaces such as underground parking garages.

The mapping interface will provide a visual indication of the accuracy of the location by overlaying a transparent red circle on top of each locate – referred to as a “Circle of Certainty”. See above for more details on the Circle of Certainty.

## **Old Locates**

Under most conditions your asset can be located and tracked in “real time”. There are circumstances, however, where the location of the asset cannot be determined immediately. Old locates are generally provided when the asset is outside of cellular range or in conditions that prohibit a location calculation (such as deep underground, or in areas where cellular coverage is weak).

When the mobile monitoring servers cannot establish wireless communications with the asset, the system will report the last location recorded in its database (unless the beacon has never before been located) along with a time stamp indicating when the asset was at that location. A location Type of “LV/Sys” means it is the last valid locate stored in the system, as opposed to being generated in real time by the beacon itself. Alternatively, a location type of “C” (for “Current”) indicates that wireless coverage and location data are available and the device is reporting an up-to-date location.

## 8200 Specifications

### Location Technology:

Qualcomm gpsOne™

### Position Accuracy

15 to 30 feet (5 to 10 meters) in open sky

<60 feet (20 meters) 95% of the time

### Cellular Communications:

Bands CDMA 900/1900 MHz

Compliance FCC parts 2, 15 and 90

### Environmental:

Operating temp -4° to +140° F (-20° to 60° C)

Storage temp -40° to 176° F (-40° to 80° C)

Humidity < 95% non-condensing

Vibration Up to 500Hz random vibration 1.25G rms

### Power Supply:

Battery Pack 3.7V Li-Ion (1800mAh or 3600mAh)

### Current draw

Standby 12mW

Transmit 0.65W

### Mechanical:

Size 2.5" x 1.25" x 0.6" (6.35cm x 3.2cm x 1.5cm) w/1800 mAh battery

Weight 5.3 oz (150g)

For future reference, record your beacon's identification here:

ESN: \_\_\_\_\_

## **LIMITED WARRANTY**

### **8200**

#### **Limited Warranty**

The 8200 is warranted to be free of defects and to operate according to its specifications for a period of one year from the date of purchase. In the event that the device fails to perform in accordance with the specifications, or is otherwise defective in materials or workmanship, Guardian Mobile Monitoring Systems, Inc. (GMMS) will repair or replace the unit, at its sole discretion. Replacement or repair does not extend the original warranty period.

#### **Warranty Exclusions**

This warranty does not extend to claims arising from misuse of the 8200. If, in the opinion of GMMS, the product was mistreated, improperly installed, or exposed to harsh environments, the warranty is null and void. There are no user serviceable parts inside. Opening the housing or removal or alteration of the original serial number label also constitutes voiding of the warranty.

The warranty does not extend to casualty, loss, or damage, nor to use of the product for purposes other than those for which it was designed. Except for the express limited warranty set forth above, GMMS grants no warranties, expressed or implied, and specifically disclaims any implied warranty of merchantability, quality, or fitness for a particular purpose.

#### **Limitations of Liability**

GMMS' entire liability for any breach of the limited warranty contained herein shall be limited to only the repair or replacement of a defective unit. GMMS shall not be liable for incidental, consequential or special damages whether or not the company has been advised of the possibility of such damages. This limitation survives the failure of any exclusive remedy.