# AVS GSM Communicator
# Installation Manual

March 2011 EDITION


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## Contents

## 1. Introduction

AVS is proud to introduce the AVS GSM Communicator. This Module allows for any existing alarm with a negative on alarm pager output to have TXT capabilities giving you the security in knowing that you can be notified via your cell phone whenever your car alarm is triggered.

The AVS GSM Communicator provides notification of alarm activation via text messages using the Vodafone GSM network. The system can text to and be controlled by any mobile.

## 2. General system features

< Remote notification by TXT if the alarm has been triggered sent to up to three phone numbers.

< Up to three mobile numbers can be stored and sent notifications

< Programmable four-digit PIN code for secure operation

< Control two outputs from the alarm by TXT (100mA negative outputs)

< Positive acknowledgement of all TXT commands sent to the AVS GSM Communicator

< Negative pulse locking & unlocking outputs give the added ability of the AVS GSM Communicator to lock and unlock the vehicles doors via text messaging.

< Included Microphone provides a live audio track to monitor your car

< Text controlled arming and disarming of your AVS Alarm system

< Low credit warning text

## 3. Parts checklist

Below is a list of parts included with system.

| Item | Description | Quantity | Image |
|---|---|---|---|
| **1.** | **Main control unit**<br><br>This All-In-One unit incorporates the mobile phone engine, the SIM cardholder, and the main security alarm electronics module. | 1 |  |
| **2.** | **GSM Antenna**<br><br>The phone antenna plugs directly into the main control unit. The antenna enables the phone signals to be transmitted and received via the mobile network used. | 1 |  |
| **3.** | **Microphone**<br><br>The microphone plugs directly into the side of the main control unit. This is used to listen in on what is happening in your car for up to one minute at a time. | 1 |  |

## 4. Mobile phone unit safety precautions

### *4.1 Aircraft safety:*

Mobile phones can interfere with an aircraft's navigation system and its mobile network. The use of mobile phones on board aircraft is forbidden by law and the phone should be switched off.

### *4.2 Electronics in medical equipment:*

Radio transmitters, including mobile phones can interfere with the operation of inadequately protected medical devices. Please address all questions to a doctor or manufacturer of the medical device.

### *4.3 Precautions in the event of loss/theft:*

If your mobile phone / mobile phone unit, your SIM card or both go missing, notify your network operator immediately in order to avoid misuse.

### *4.4 Important information:*

Under no circumstances shall AVS be responsible for any loss of data or income or any special, incidental, consequential or indirect damages howsoever caused.

## 5. Installation

The AVS GSM Communicator is user friendly and easy to set up. The installation of the unit should be carried out by a professional installer, i.e. alarm technician, auto electrician etc. To prevent electro static discharge, it is highly recommended to connect ground (GND) first when connecting the GSM Communicator with the power supply. Furthermore, it is recommended to operate the unit with an optional backup power supply to insure operation if main power is lost.

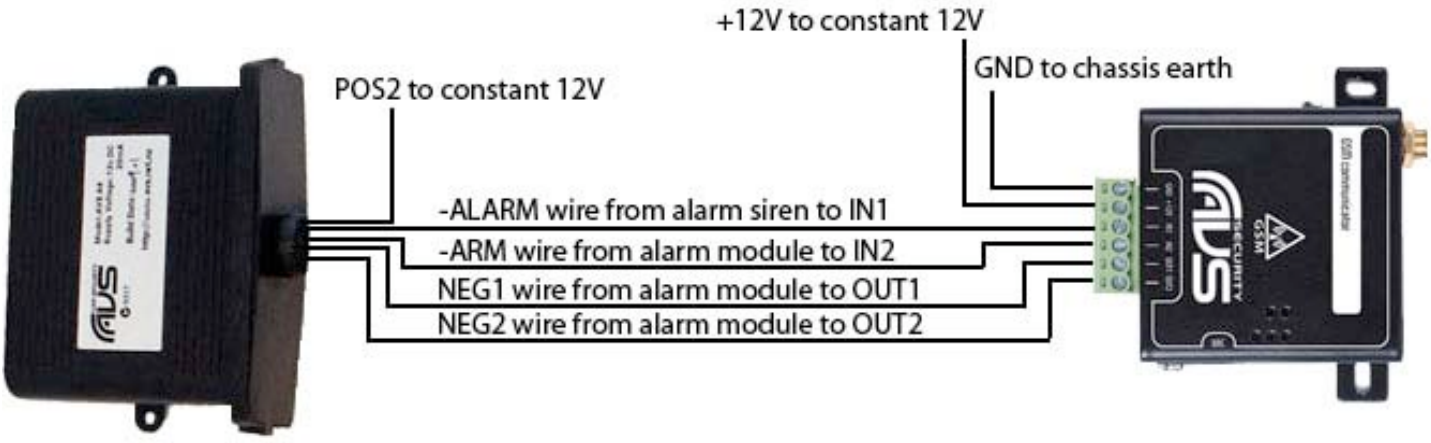
### 5.1 Planning and wire routing

| | |
|---|---|
| **Main Unit** | The AVS GSM Communicator main unit should be located under the dashboard, securely fastened and out of sight from any would be thief. The main module does not have to be on the driver's side, but is probably more convenient to install on the drivers side near the alarm module as most of the wires used will be found on the driver's side. |
| **GSM Antenna** | Connect the aerial to the SMA connector. If the GSM signal is not sufficient (below 40%), the use of an optional external aerial is recommended. This should be mounted away from metal objects and as close to the underside of the dash as possible. |

### 5.2 Wire description

| Terminal | Connection |
|---|---|
| GND | **GROUND** Connect to the chassis of the vehicle. |
| +12V | **+12v** Connect to constant +12 Volts via the fuse box at the point where the interior light circuit is powered. Current consumption when the system is in an un-triggered condition is typically less than 60mA. |
| IN1 | **-ALARM** Connect to "negative on alarm" output wire from your alarm system or siren i.e. a wire that switches to negative when the alarm is activated. When this wire changes to negative, the system will send the TXT alarm message "AVS GSM COMMUNICATOR: ALARM ACTIVATION!" |
| IN2 | **-ARM** Optional: Connect to "negative on arm" wire from your alarm i.e. a wire that switches to negative when the alarm is armed. |
| OUT1 | **ARM** Optional: Negative Pulse Arm Signal (100mA Max). Connect to AVS MAP wire Neg1 to enable disarming of AVS alarm and unlocking of the vehicle via TXT message |
| OUT2 | **DISARM** Optional: Negative Pulse Disarm Signal (100mA Max). Connect to AVS MAP wire Neg2 to enable disarming of AVS alarm and unlocking of the vehicle via TXT message |
| MIC | **MICROPHONE** Plug the supplied microphone into the mic socket |

*Note: When connecting Arm and Disarm wires to the AVS MAP system, POS2 requires a constant 12V source to operate. The AVS alarm MAP system must also be programmed to operate in Enable mode and have the central locking system wired to the alarm as normal.*




### 5.3 Installing the antenna

Screw the GSM Antenna into the antenna socket on the GSM Communicator. An optional remote antenna is available for more flexible installs.

***<u>NB</u>: The antenna plug has a very small & delicate centre pin and so care must be taken when screwing in the antenna and mounting the module in the vehicle as to ensure the aerial does not get damaged.***

## 6. Inital setup

### 6.1 Setting up the SIM card

1. Place the new SIM card in an **existing mobile phone.**
2. Deactivate (turn off) 'PIN code request.' You may need to refer to your mobile phone manual on how to do this.
3. Call the automated customer services line to select an account PIN and activate the card. **This must be done or you will be unable to top up the SIM card and the TXT part of the alarm will cease to operate.**
4. Insert the SIM card into the AVS GSM Communicator Module.

**<u>IMPORTANT</u>:**
**DO <u>NOT</u> INSERT OR REMOVE THE SIM CARD WHILE THE UNIT IS POWERED. ENSURE THAT THE POWER IS OFF AND THE AVS GSM COMMUNICATOR MODULE IS UNPLUGGED FIRST!!!**

## 6.2 Powering up the GSM Communicator

After the GSM Communicator is connected to the power supply and switched on, the unit will undergo a self-test cycle. During this mode, 3 LED's (Power, Status, and Alarm) will be continuously on. This process will take approximately 10 seconds to one minute, depending on the SIM card type and information stored.

It is recommended to only use new SIM cards with no data stored. After the self-test cycle, the unit will attempt to connect to the sim cards GSM network. Once successfully connected to the network, all LED's will be switched off except LED 1 (green) which will start flashing continuously, indicating that the unit is ready for programming.

# 7. Programming and operating functions

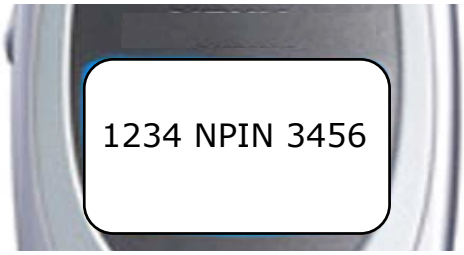
The AVS GSM Communicator is programmed via TXT message from any mobile phone on any network worldwide or via Internet texting facilities. All commands and setting must always start with the four-digit security PIN, pre-set to *1234.* It is recommended to change this PIN. The PIN is followed by a space and the appropriate TXT command. Commands must only be written in upper case (capital letters).

Example: **1234 STAT?** (to receive the status of the unit)

All commands are confirmed and acknowledged by the GSM Communicator with a reply TXT confirmation. Even if the command was incorrect the unit will send an error message.

## 7.1 Changing PIN numbers

Send the following TXT message to your GSM Communicator: 1234 NPIN XXXX – where XXXX is the new pin number you want to have consisting of numbers 0-9 only.




If the process is done correctly, a confirmation TXT will be sent stating "Save OK"

**THE DEFAULT PIN NUMBER IS 1234**

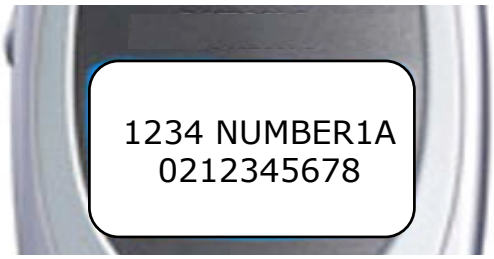
## 7.2 To add phone numbers to the system by TXT

You can add a mobile phone number to the GSM Communicator by typing your four digit PIN number and NUMBERXX YYYY from a mobile phone to the GSM Communicator. The mobile phone number 'YYYY' will go in location 'XX'. (X must be 1, 1A or 1B).

e.g. PIN number Location:1A

EG: 1234 NUMBER1A 0212345678

Command New phone number




You will then receive a reply TXT message back stating '*Save OK*'

## 7.3 To read phone numbers from the system by TXT

The AVS GSM Communicator can be programmed with up to three different mobile phone numbers. When the alarm is armed and activates or put into panic mode it will send a TXT message to each of the phone numbers in the system's memory.

To find out what mobile numbers are programmed into the system type your PIN number and LISTN and send it to your GSM Communicator.


(Where 1234 is your PIN number)

You will receive a reply TXT message back stating all the phone numbers in the alarm systems memory. e.g. 'AVS: SAVE NUMBER: N1: 0212345678, N1A: 0278901234, N1B: 0223456789, N2:--, N2A:--, N2B:--,'

The numbers in N1, N1A and N1B are programmed to receive messages from the AVS GSM Communicator.

## 7.4 To erase phone numbers from the system by TXT

There are three memory locations for mobile phones. To erase a mobile phone number stored in one of the locations, type your PIN number and NUMBERX DELETE (where X stands for the location number), and send it to your GSM Communicator.

e.g.: 1234 NUMBER1A DELETE – will erase the phone number stored in location 1A in the alarm memory (where 1234 is the PIN number).

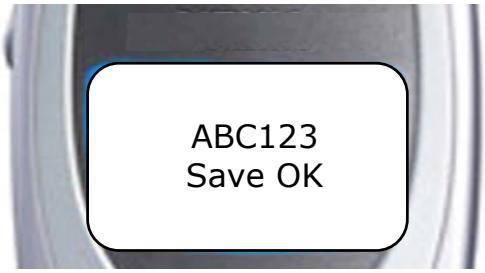

You will then receive a reply TXT message back stating "Delete OK"

## 7.5 To change the ID of the alarm system

You can change the ID Message that is displayed at the start of the TXT messages you receive. For example you can change it to your vehicles registration. Up to 16 characters can be used for the ID.

e.g.: 1234 NAME ABC123 – will change the current ID to ABC123.


You will then receive a reply TXT message back saying: ABC123 Save OK



## 7.6 To receive TXT module status report

A status report can be sent to your mobile giving you important information from your GSM Communicator. To receive a status report, type your PIN number and STAT? and send it to your GSM Communicator.

e.g.: 1234 STAT?


If the command was correct, you will receive an TXT message back containing the following information:

- Name of The GSM Communicator
- Armed/disarmed status (requires negative on arm wire to be hooked up)
- Output ports active/deactivate
- GSM network provider
- GSM signal strength
- Processor temperature
- Input ports Counters

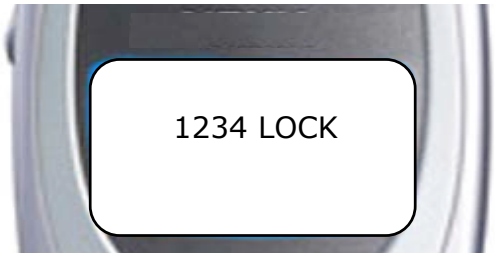
## 7.7 TXT controlled arming and disarming of your AVS Alarm

The AVS GSM Communicator has two onboard TXT controlled relay outputs that can be switched on with a simple message. These outputs are used to arm and disarm the alarm system and can also be hooked up to lock and unlock the doors accordingly (requires two extra relays).

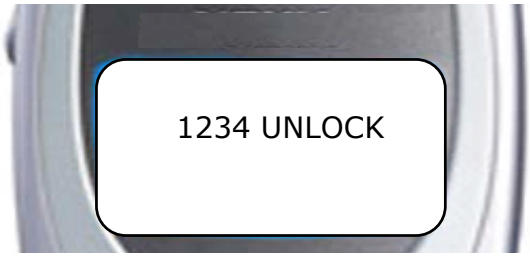
*To arm the alarm (and lock doors if hooked up):*
Type your **PIN** number and **LOCK** from a mobile phone, and send it to the alarm to activate the relay output. Once the message is sent the alarm will respond with "ARMED"

*To disarm the alarm (and unlock doors if hooked up):*
Type your **PIN** number and **UNLOCK** from a mobile phone, and send it to the alarm to activate the relay output. Once the message is sent the alarm will respond with "DISARMED"

To arm the alarm




To disarm the alarm




*To arm the alarm via phone call:*
Alternatively, you can arm your AVS alarm (and lock doors if hooked up) by ringing the GSM Communicator. Let it ring for three rings and then hang up. You will receive a conformation text to confirm the alarm has armed. This saves you the cost of a text when wanting to arm you alarm remotely.

## 7.8 Audio surveillance of your GSM Communicator

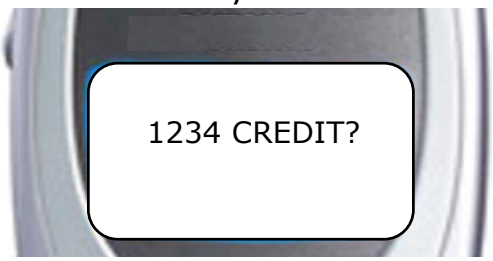
The AVS GSM Communicator has an audio surveillance option. Any of the numbers stored in the GSM Communicator can ring and listen into what is going on using the supplied microphone. To activate this mode, the unit has to receive a minimum of five ringing tones in order to turn audio surveillance on. The maximum audio surveillance time is one minute as this is not a listening device.

## 7.9 Checking your pre paid balance

The AVS GSM Communicator has the ability to check your Vodafone prepay balance via TXT. To receive your balance simply send 'CREDIT?' to your AVS GSM Communicator and you will receive a message with your credit remaining.

*e.g: 1234 CREDIT?*

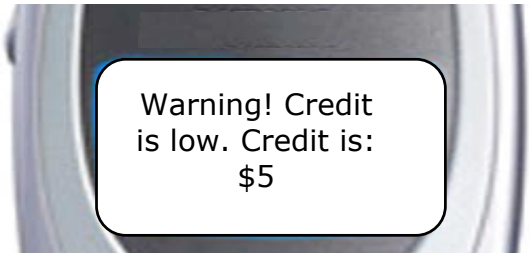
To check your credit




You will then receive a message stating for example: "Credit is: $3.00"

**<u>Automatic low balance warning</u>**

When your pre paid sim reaches $5 you will receive a message stating:




This is an automatic message designed to alert you to top up your sim card to reduce the risk of not receiving alerts from your AVS GSM Communicator due to having no credit on the sim card.

The low credit warning text will be sent to the service number of GSM Communicator. To set this simply set the number like you have for your text alerts (see page 9) by sending your unit the following message:

e.g.: 1234 NUMBERS 0213456789

*These functions only available with a Vodafone pre-pay sim card.*

# 8. GSM Communicator reference section

## 8.1 TXT commands glossary

Use this guide as a reference for all AVS GSM Communicator commands:

1. The AVS GSM Communicator is case sensitive and all commands must be in upper case, i.e. 1234 ARM
2. The default pin code is 1234
3. Messages that contain no valid PIN code that are sent to the AVS GSM Communicator will not get responded to
4. Messages that contain a valid PIN with a command that is not recognised will receive an error message i.e.
**< ERROR. For help use command HELP. (Err. Code: #E5)**
5. Your four digit PIN MUST be in front of all commands.
6. The ID (identification) is at the start of every TXT received from the AVS GSM Communicator.

**>Send this to AVS GSM Communicator.**
**<Receive this from AVS GSM Communicator.**

>**LOCK**
<Lock car/Arm alarm – *If connected*.

>**UNLOCK**
<Unlock car/Disarm alarm – *If connected*.

> **LISTN** (read phone memory)
< AVS: SAVE NUMBER: N1: 0212345678, N1A: 0278901234, N1B: 0223456789

> **NUMBERX DELETE** (X=1, 1A or 1B) so for example you wanted to erase 1A from phone memory
< AVS: SAVE NUMBER: N1: 0212345678, N1A:, N1B: 0223456789

>**NUMBERX YYYY** (phone memory location X = (1, 1A or 1B with phone number = Y)
>NUMBER1 0212345678 (example)
<AVS: SAVE NUMBER: **N1: 0212345678**, N1A: 0278901234, N1B: 0223456789

> **NAME XXXX** (write rego or other message to be at the start of every message received from the GSM Communicator up to 16 characters)
< XXXX. Save OK.

*To change the PIN if you know your PIN*
>**NPIN XXXX** (write new pin) i.e. NPIN 0000
<Save OK

>**CREDIT?**
<Credit is: $3.00

## 8.2 LED status glossary

| | |
|---|---|
| Green LED<br>LED 1 | Flashing slow (1sec. interval):<br>System ready for operation, all ok. |
| | Flashing fast:<br>No GSM signal |
| | Permanently on:<br>Equipment out of service |
| | Pulse flashing (1 sec. rapid flashing):<br>Unit receives TXT command |
| Yellow LED<br>LED 2 | Permanently on:<br>AVS alarm armed |
| | Permanently off:<br>AVS alarm disarmed |
| Red LED<br>LED 3 | Permanently on:<br>Unit sending TXT or calling. |
| | Flashing slow (1sec. interval):<br>Unit tries to TXT or call but the GSM signal is not sufficient. |
| | Blitz flashing:<br>Audio tapping |
| | Pulse flashing (LED flashing rhythm of incoming ringing call):<br>Any authorized incoming call. |
| Orange LED<br>LED 4 | Flashing fast:<br>Output port (Relay 1) Arming AVS alarm |
| | Permanently off:<br>Output port (Relay 1) off. |
| Orange LED<br>LED 5 | Flashing fast:<br>Output port (Relay 2) Disarming AVS alarm |
| | Permanently off:<br>Output port (Relay 2) off. |

# 9. GSM Communicator guidelines and warranties

## 9.1 Guidelines for safe and efficient use

Please read this information before using your AVS GSM Communicator. These instructions are intended for your safety. Please follow these guidelines. If the product has been subject to any of the conditions listed below or you have any doubt as to its proper function, make sure you have the product checked by a certified AVS dealer before using it. Failure to do so might entail a risk of product malfunction or even a potential hazard to your health.

## 9.2 Recommendations for safe use of the GSM Communicator

Always treat your product with care and keep it in a clean and dust-free place.
Do not expose your product to liquid or moisture or humidity.
Do not expose your product to extreme high or low temperatures.
Do not drop, throw or try to bend your product.
Do not attempt to disassemble or modify your product. Only authorised personnel should perform service.
Do not use your product in an area where a potentially explosive atmosphere exists.

## 9.3 Antenna

The GSM Communicator has an antenna. Use of antenna devices not marketed by Manta Electronics Limited specifically for this model could damage your GSM Communicator, reduce performance, and produce SAR levels above the established limits (see below).
Radio Frequency (RF) Exposure and Specific Absorption Rate (SAR)

The GSM Communicator is a low-power radio transmitter and receiver. When it is turned on, it emits low levels of radio frequency energy (also known as radio waves or radio frequency fields).

Governments around the world have adopted comprehensive international safety guidelines, developed by scientific organizations, through periodic and thorough evaluation of scientific studies. These guidelines establish permitted levels of radio wave exposure for the general population. The levels include a safety margin designed to assure the safety of all persons, regardless of age and health, and to account for any variations in measurements. Specific Absorption Rate (SAR) is the unit of measurement for the amount of radio frequency energy absorbed by the body. The SAR value is determined at the highest certified power level in laboratory conditions, but the actual SAR level of the SMS module while it is operating can be well below this value. This is because the SMS module is designed to use the minimum power required to reach the network. Variations in SAR below the radio frequency exposure guidelines do not mean that there are variations in safety. While there may be differences in SAR levels among GSM communicator modules, all GSM communicator models are designed to meet radio frequency exposure guidelines.

## 9.4 Disposal of old electrical and electronic equipment

All electrical and electronic equipment included shall not be treated as household waste. Instead it shall be left at the appropriate collection point for recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

## 9.5 End user licence agreement

This wireless device, including without limitation any media delivered with the device, ("Device") contains software owned by Manta Electronics Limited and its affiliated companies ("AVS Car Security") and its third party suppliers and licensors ("Software"). As user of this Device, Manta Electronics Limited grants you a non-exclusive, non-transferable, non-assignable license to use the Software solely in conjunction with the Device on which it is installed and/or delivered with. Nothing herein shall be construed as a sale of the Software to a user of this Device. You shall not reproduce, modify, distribute, reverse engineer, decompile, otherwise alter or use any other means to discover the source code of the Software or any component of the Software. For avoidance of doubt, you are at all times entitled to transfer all rights and obligations to the Software to a third party, solely together with the Device with which you received the Software, provided always that such third party agrees in writing to be bound by these rules. You are granted this license for a term of the useful life of this Device. You can terminate this license by transferring all your rights to the Device on which you have received the Software to a third party in writing. If you fail to comply with any of the terms and conditions set out in this license, it will terminate with immediate effect.

## 9.6 Disclaimer

This device is designed for indoor use only unless protected in appropriate enclosure. The GSM Communicator is reliant on adequate GSM coverage. In the event of inadequate or no GSM coverage, Manta Electronics Limited cannot be held liable for any damages. The GSM communicator was tested with SIM cards provided by "Vodafone New Zealand and 2 Degrees Mobile New Zealand". Manta Electronics Limited can not be held liable for any malfunction with the use of other SIM cards. The GSM Communicator is only for the use within the borders of NEW ZEALAND. Only use auxiliary equipment tested and approved by Manta Electronics Limited. Do not attempt to take apart, open, service, or modify the hardware device. Doing so could present the risk of electric shock or other hazard. Any evidence of any attempt to open and/or modify the device, including peeling punching, or removal of any labels, will void the Limited Warranty. Never pass security code or the mobile number of the GSM Communicator to an unauthorised third party. 
Information in this document is subject to change without any notice. Manta Electronics Limited reserve the right to change or improve its products and to make changes in the content without obligation to notify any person or organisation of such changes or improvements.

## 9.7 Warranty

Manta Electronics Limited (Seller) warrants its products to be in conformance with its own plans and specifications and to be free from defects in materials and workmanship under normal use and service for twelve months from the date of original purchase. Sellers obligation shall be limited to repairing or replacing, at its option, free of charge for materials or labour, any part which is proved not in compliance with Sellers specifications or proves defective in materials or workmanship under normal use and service. Seller shall have no obligation under this Limited Warranty or otherwise if the product is altered or improperly repaired or serviced by anyone other than Seller. For warranty service, call 0800 438 862 for a service centre return address. Be sure to include your contact phone number and address with all returns. Seller has no obligation to attend the buyer's location to retrieve the goods or make repairs onsite.

There are no warranties, expressed or implied, of merchant ability, or fitness for a particular purpose or otherwise, which extend beyond the description on the face hereof. In no case shall seller be liable to anyone for any consequential or incidental damages for breach of this or any other warranty, express or implied, or upon any other basis of liability whatsoever, even the loss or damage is caused by its own negligence or fault.

Seller does not represent that the products it sells may not be compromised or circumvented; that the products will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; or that the products will in all cases provide adequate warning or protection. Customer understands that a properly installed and maintained alarm system may only reduce the risk of a burglary, robbery, or fire without warning, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss as a result.

Consequently, seller shall have no liability for any personal injury; property damage or other loss based on a claim the product failed to give any warning. However, if seller is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regard less of cause or origin, seller's maximum liability shall not in any case exceed the purchase price of the product, which shall be the complete and exclusive remedy against seller.

**This warranty replaces any previous warranties and is the only warranty made by the Seller on this product. No increase or alteration, written or verbal, of the obligations of this Limited Warranty is authorised. This warranty does not affect your rights under the Consumer Guarantees Act.**

## 9.8 Technical support

Manta Electronics Limited
PO Box 302-396, North Harbour
North Shore, Auckland 0751

AVS Car Security
Contact No: 09 476 8052
E-mail: sales@manta.co.nz
Web: www.avscarsecurity.com

## 9.9 Programmed numbers reference

Record the programmed numbers for your future reference:

| |
|---|
| **Vehicle ID (eg. registration plate)** |
| |
| **AVS GSM Communicator SIM card number:**<br>**This is your AVS GSM Communicator 's cellular modem number** |
| |
| **AVS GSM Communicator secure operation PIN:** |
| |
| **Vodafone account PIN:** |
| |
| **Stored mobile numbers:** |
| **1:** |
| |
| **2:** |
| |
| **3:** |
| |
| **Service #:** |
| |

**IMPORTANT**
Each time the module sends an SMS it is charged at the normal Vodafone network rate. It is your responsibility to have enough money on the SIM card for the module to send SMS.


CAR SECURITY
AVS