

Leda Compact Configuration

Instructions For Use



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Configuring the Leda Compact For Online Vehicle Tracking Via Planet Pin

Ensure that the SIM card you have installed in the Leda Compact is validated and has credit on it! We recommend that you always try out a SIM card in a normal mobile phone before inserting it into your Leda Compact for the first time.

The first thing to do is to designate a mobile number that the Leda Compact will recognise commands from. You can designate up to three mobile numbers.

1) Send an SMS to the phone number of the SIM card in the Leda Compact as follows:

yourphonenumber*0000*1*

Where "yourphonenumber" is the mobile phone number you want to designate as the "Master" or controller phone. The maximum length is 20 digits. Format is the +international country code followed by your number without the leading zero: e.g. UK mobile "07827123456" would be entered as "+447827123456"

The "0000" is the default password for changing any parameters in your Leda Compact. You may wish to change these four digits to something else later on.

The "1" is the sequence number of the three possible designated phone numbers (i.e. this is the first phone number, the next one would have a number 2 here and the third one will have a number 3). Alerts will be sent to phone number 1 and, if it is unreachable, to phone number 2 and then to phone number 3.

When you send any valid SMS command to the Leda Compact it will reply shortly after with an SMS to confirm that it has processed your command.

2) Enable GPRS connection mode by sending: **7100000**

3) Setup the GPRS APN for the mobile phone network you are using by sending: **#803#0000#APNName#Username#password##**

Note, if APN for your network does not require a user name and password you can use a shorter version of this command: **#803#0000#APN Name##**

4) Configure the Leda Compact with the IP address and port number of the Planet Pin server by sending: **#804#0000#109.200.19.99#6800##**

5) Configure upload interval when ACC=ON by sending: **#805#0000#60#1##**
This would cause it to upload GPS data every 60 seconds.

6) Configure upload interval when ACC=OF by sending: **#809#0000#300#1##**
This would cause it to upload GPS data every 300 seconds (e.g. every 5 minutes)

7) Register your Leda Compact online for a free 30 day trial of the Planet Pin Online Tracking Portal! Click on the Register Today link on our web page: <http://www.planetpin.com/onlinetracking>

8) Open a web browser and enter the address: <http://tracking.planetpin.com/trackingserver>

Login using the following credentials:

Username: demo
Password: demo

Contact your local Diplomat or Planet Pin representative for your own private subscription credentials for this service.

SMS Configuration Commands

The remainder of this document covers the full set of commands supported by the Leda Compact. Automatically generated SMS sent by the Leda Compact are also described.

NOTE! These commands are designed for use by System Administrators only. Incorrect use of these commands can lead to incorrect or undesirable operation of the device. Please consult your Leda Compact dealer if in doubt about how to use these commands.

When you send any valid SMS command to the Leda Compact it will reply shortly after with an SMS to confirm that it has processed your command.

In the command examples the default user password for the Leda Compact is used extensively. The default user password is "0000" and may be changed at will by the change password command.

Controller phone number

Format: *controllerphonenumber*userpassword*sequencenumber**

Example: *13900000000*0000*1**

Reply: SET USER NUMBER 1 OK

Explanation: Parameter "controllerphonenumber" is the mobile phone number you want to designate as the "Master" or controller phone. The maximum length is 20 digits.

Parameter "userpassword" is "0000" and is the default password for changing any parameters in your Leda Compact.

The "1" is the sequence number of the three possible designated phone numbers (i.e. this is the first phone number, the next one would have a number 2 here and the third one will have a number 3). Alerts will be sent to phone number 1 and, if it is unreachable, to phone number 2 and then to phone number 3.

Switch Leda Compact to SMS Mode

Format: 700userpassword (4 figures)

Example: 7000000

Reply: SET MODE OK, CURRENT MODE: SMS P2P

Explanation : When the Leda Compact receives the 700 command with the correct user password it switches to SMS application mode.

Change user password

Format: 777NewpasswordOldpassword

Example: 77712340000

Reply: SET USER PASSWORD OK

Explanation: In this example a new password "1234" will replace the default password of "0000"

Power Management

To reduce power consumption from the vehicle or the built-in backup battery you can configure the GPS receiver to be permanently ON, permanently OFF or automatically managed by the built-in Vibration Sensor.

● GPS Permanently ON

Format: 222userpassword

Example: 2220000

Reply: GPS ON OK

Explanation: When the Leda Compact receives the 222 command with the correct user password the GPS module is switched on until commanded otherwise.

● GPS Permanently OFF

Format: 333userpassword

Example: 3330000

Reply: GPS OFF OK

Explanation: When the Leda Compact receives the 333 command with the correct user password the GPS module is turned off until commanded otherwise.

● Vibration Sensor Power Management

Format: 100userpassword

Example: 1000000

Reply: VIBRATION SENSOR ON OK

Explanation: When the Leda Compact receives the 100 command with the correct user password it will shut down the GPS module if the vibration sensor detects no vehicle movement for 5 minutes. If the vibration sensor is triggered the Leda Compact will reactivate the GPS module again.

Receiving Location Information Via SMS

The Leda Compact can send its current GPS location by SMS message to the controller phone. It can do this either On-Demand or Timer Based at regular intervals.

● On-Demand Request Location By Simple SMS

Format: 666userpassword

Example: 6660000

Reply: Location message as per the following table:

Data format:	Example Message:
Lat: Latitude (+/-)	Lat: +22.54619
Long: Longitude (+/-)	Long: +114.12378
Speed: Speed Km/h	Speed: 0.00Km/h
Direction: Direction	Direction: 315.00
Date: Date YYYY-MM-DD	Date: 2008-04-25
Time: Time HH: MM: SS	Time: 16:39:45
BS: GSM Base Station information	BS: 25ee0dff
Fix: Location state (A/V)	Fix: A ("A" means received GPS signal, "V" means poor GPS signal, inaccurate position)
ID: IMEI	ID: 353686009002030
STATE: Tracker Status	STATE: SMS

If there is currently no valid GPS fix, the Leda Compact will reply as follows:

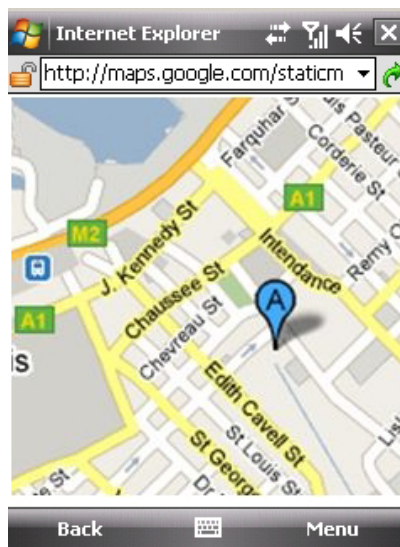
Example:
 ERROR GPS GPRMC FRAME DATA
 BS: 27971054
 ID: 353686009002030
 STATE: SMS

● On-Demand Request Location By Google Map URL

Format: 668userpassword

Example: 6680000

Reply: An SMS containing a Google map URL link. Clicking on the link contained in the message will launch a web browser (web browser enabled mobile phone required!) and will display current location in Google Maps.



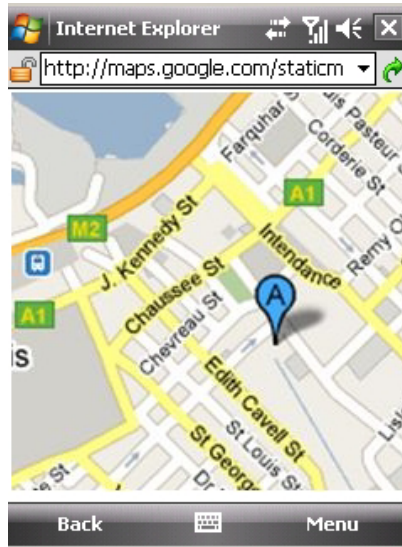
- **User-Defined Request Location By Google Map URL**

Format: 668userpassword,WWW,HHH,ZZ

Example: 6680000,480,640,15

Explanation: WWW is the width of the map you want to see (from 100 to 1000), HHH is the height (from 100 to 1000) and ZZ is the zoom factor (from 1 to 20).

Reply: An SMS containing a Google map URL link. Clicking on the link contained in the message will launch a web browser (web browser enabled mobile phone required!) and will display current location in Google Maps.



- **Alternative Request Location By Google Map URL**

Format: 669userpassword

Example: 6690000

Reply: An SMS containing a link to Google map URL link with all the pan and zoom features in Google Maps. Clicking on the link contained in the message will launch a web browser (web browser enabled mobile phone required!) and will display current location in Google Maps.

- **On-Demand Request Location By Voice Call**

As an alternative to sending the Leda Compact an SMS to request its current location you can simply call the tracker with the controller phone. Dial the number of the Leda Compact and after 5 rings hang up. An SMS with its location will be sent automatically to the controller phone with a message beginning "STATE: SMS".

Timer Based SMS Tracking

The Leda Compact can be configured to regularly report its location based on time elapsed. To manage the airtime or SMS usage it is desirable to optimise this setting according to your needs.

● Enable Timer Based Tracking

Format: 4nnuserpassword

Example: 4010000

Reply : TIMER START, REPEAT INTERVAL: nn MINUTES

Explanation: The parameter "nn" is the number of minutes between location reports and can be any number between 1 and 120 minutes.

When the Leda Compact receives the 4nn command with the correct user password it will report its location by simple SMS to the controller phone every "nn" minutes. In this example the Leda Compact will send an SMS containing its location every 1 minute.

● Disable Timer Based Tracking

Format: 400userpassword

Reply: TIMER STOP

Explanation: Regular reporting of Timer Based Tracking is disabled until commanded otherwise.

Alert Reporting by SMS or Voice Call

Alerts are generated by specific events (i.e. vehicle outside Geo-fence, Panic situations etc.) and can be notified to the controller phone in different ways.

You can choose to alert by only an SMS message or additionally by a Voice Call where you can configure your phone to use a unique ringtone for the incoming number of the Leda Compact in order to indicate the alert situation to you in an easily recognisable way.

● Report by SMS

Format: 150userpassword

Example: 1500000

Reply: SET VOICE CALL: OFF

Explanation: When the Leda Compact receives the 150 command with the correct user password it will report all alerts (i.e. Geo-fence, Panic etc.) via SMS messages only.

● Report by Voice Call and SMS

Format: 151userpassword

Example: 1510000

Reply: SET VOICE CALL: ON

Explanation: When the Leda Compact receives the 150 command with the correct user password it will report all alerts (i.e. Geo-fence, Panic etc.) by SMS messages and by Voice Call. Note that the Voice Call feature can only notify you that there has been an alert – it cannot tell you exactly what alert has been raised.

The Voice Call alert notification rings the controller phone number and the caller ID displayed on that phone identifies the vehicle that has raised the alert. You could assign a unique ringtone to the caller ID of the phone number of the Leda Compact to indicate an alert in an easily recognisable way.

● Panic Alert

If you press the Leda Compact optional footswitch accessory for more than 3 seconds the Leda Compact will send its current location as an SMS to the controller phone followed ending with the words "STATE: SOS".

If more than one controller phone number has been programmed, the Leda Compact will call controller phone numbers in sequence. If the first phone number is a mobile that is switched off, out of coverage or there is no response, the Leda Compact will start calling the second and then the third until the Panic SMS is successfully sent.

● Setting Up A Geo-fence Area

A "Geo-fence" is a way of restricting the area of permitted movement for a vehicle.

A Geo-fence is defined by the latitude and longitude co-ordinates of a base point and a permitted radius of travel from that point. If the vehicle travels outside this area or later returns the Leda Compact will raise alerts by sending SMS messages (and voice calls if so configured) to the controller phone.

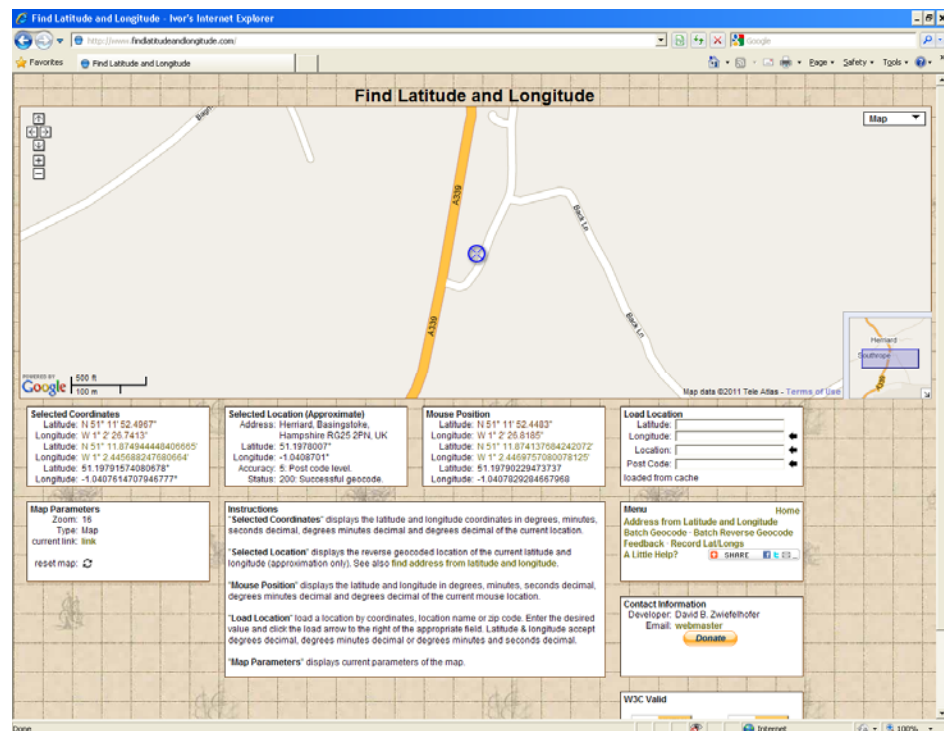
If vehicle goes OUTSIDE Geo-fence, Leda Compact sends an SMS "STATE: OS".
If vehicle RETURNS to Geo-fence, Leda Compact sends an SMS "STATE: RS".

Method 1: Setup Geo-fence base point using specific Longitude and Latitude co-ordinates

Find the point you want to use on a conventional map or online using the website:

<http://www.findlatitudeandlongitude.com>

Scroll around the map and zoom in to the place you want to use as the centre of the Geo-fence you want to create. Click on that point.



Record the longitude and latitude of that point as shown in the "Selected Location" information box just below the map. Round up or down each number to no more than 5 decimal places. The Leda Compact uses letters to replace the + and - symbols in the coordinates as follows:

If the Longitude is negative (-) write the letter "W" in front of the number.
If the Longitude is positive (+) write the letter "E" in front of the number.
Add any zeroes required to give you 3 digits before the decimal point.
e.g. Longitude -1.0408701 becomes W001.04087

If the Latitude is negative (-) write the letter "S" in front of the number.
If the Latitude is positive (+) write the letter "N" in front of the number.
Add any zeroes required to give you 2 digits before the decimal point.
e.g. Latitude +51.1978007 becomes N51.19780

Send an SMS containing the coordinates and Geo-fence radius as follows:

Format: 004userpasswordE/Wddd.dddddN/Sdd.dddddRzzz.z

Example: 0040000W001.04087N51.19780R1.0

Explanation: When the Leda Compact receives the 004 command with the correct user password it will set the centre of the Geo-fence according to the coordinates and the radius according to "Rzzz.z". In this example, the radius is set to 1.0km

Method 2: Using the Current Location as the Geo-fence Base Point

This is the easiest method to use when you simply want to leave the vehicle where it is and be alerted if it moves.

Format: 005userpasswordRzzz.z

Example: 0050000R1.0

Reply: SET GEOFENCE OK

Explanation: When Leda Compact receives the 005 command with the correct user password it will set the centre of the Geo-fence according to its current location and the radius according to "Rzzz.z". In this example, the radius is set to 1.0km

Enable or Disable Geo-fence Alerts

Once a Geo-fence has been defined you can enable or disable alerts at will.

● Enable Geo-fence Alert

Format: 211userpassword

Example: 2110000

Reply: GEO-FENCE ON

Explanation: When the Leda Compact receives the 211 command with the correct user password it will enable Geo-fence alerts (Note! A Geo-fence must be defined already for any Geo-fence alerts to work!)

● Disable Geo-fence Alert

Format: 210userpassword

Example: 2100000

Reply: GEO-FENCE OFF

Explanation: When the Leda Compact receives the 210 command with the correct user password it will disable Geo-fence alerts (Note! A Geo-fence must be defined already for any Geo-fence alerts to work!)

● **Battery Low Voltage Alert**

If external power is removed from the Leda Compact the GPS receiver and SMS module continue to be powered by an internal Lithium-Ion backup battery for a period of time (Note that the lighting for the sign will only work with external power applied)

If Leda Compact is running on its internal battery and it is nearly exhausted, it will send an SMS with its current location and the words "STATE :LP" at the end of it.

Vehicle Immobiliser Feature

The WHITE wire in the cable of the Leda Compact may be connected to the optional Immobiliser Kit. Part of the kit includes an automotive grade relay for interrupting a supply within the vehicle in order to immobilise it.

Typical applications for the Immobiliser Relay is to interrupt the power to the fuel pump or to interrupt the signal from the oil pressure sender on the engine. Other applications may exist on other vehicles.

The purpose of the Immobilise commands is to energise or de-energise the relay therefore the Immobiliser Kit must be installed in order for any of the Immobiliser commands to work!

● **Immobilise Vehicle (2 Step)**

This is a **TWO STEP** process required to immobilise a vehicle:

Format: 900userpassword

Example: 9000000

Reply: CONFIRM POWER OFF?

Explanation: When the Leda Compact receives the 900 command with the correct user password it prompts for confirmation by sending an SMS to the controller phone containing the message "CONFIRM POWER OFF". No further action will be taken unless the following SMS is sent to the Leda Compact:

Format: 901user password

Example: 9010000

Reply: POWER OFF

Explanation: When the Leda Compact receives the 901 command with the correct user password as confirmation of an immobilisation request it energises the relay in the Immobiliser Kit. The vehicle will become Immobilised.

● Immobilise Vehicle (Direct)

This is a **ONE STEP** process required to immobilise a vehicle and should be used with caution as there is no need to confirm the action once the command is sent:

Format: 940user password

Example: 9400000

Reply: POWER OFF

Explanation: When the Leda Compact receives the 940 command with the correct user password it energises the relay in the Immobiliser Kit. The vehicle will become Immobilised. Beware! The unit will not request confirmation before doing it!

● Remobilise Vehicle (2 Step)

This is a **TWO STEP** process required to remobilise a vehicle:

Format: 902userpassword

Example: 9020000

Reply: CONFIRM POWER ON?

Explanation: When the Leda Compact receives the 902 command with the correct user password it prompts for confirmation by sending an SMS to the controller phone containing the message "CONFIRM POWER ON". The vehicle will continue to be immobilised unless the following SMS is sent to the Leda Compact:

Format: 903user password

Example: 9030000

Reply: POWER ON

Explanation: When the Leda Compact receives the 903 command with the correct user password as confirmation of an remobilisation request it de-energises the relay in the Immobiliser Kit. The vehicle will become mobile again.

● Remobilise Vehicle (Direct)

This is a **ONE STEP** process required to remobilise a vehicle and should be used with care as there is no need to confirm the action once the command is sent:

Format: 941userpassword

Example: 9410000

Reply: CONFIRM POWER ON?

Reply: POWER ON

Explanation: When the Leda Compact receives the 941 command with the correct user password it de-energises the relay in the Immobiliser Kit. The vehicle will become mobile again. Note! The unit will not request confirmation before doing it.

Alerting When External Power Is Removed

If external power is removed from the Leda Compact the GPS receiver and SMS module continue to be powered by an internal Lithium-Ion backup battery for a period of time.

Because the Leda Compact stays running on its internal battery it is still able to send an SMS alert to the controller phone. Because the removal of its external power source is considered an attack on the Leda Compact, this feature is called "Defence".

If the Defence feature is enabled, when external power is removed, Leda Compact sends its current location with the words "STATE: DEF" at the end of the message.

● Enable Alert When External Power Is Removed

Command: 011userpassword

Example: 0110000

Reply: DEFENCE ON

Explanation: When the Leda Compact receives the 011 command with the correct user password it enables alerts to be sent when external power is removed.

● Disable Alert When External Power Is Removed

Command: 010user password

Example: 0100000

Reply: DEFENCE OFF

Explanation: When the Leda Compact receives the 010 command with the correct user password it disables alerts being sent when external power is removed.

Ignition-Off Movement Alert (Anti-Tow Alarm)

If this feature is enabled, every time the vehicle ignition is turned off (i.e. engine stopped) the current position is recorded as a start point. As a security measure you can define the maximum distance that the vehicle can move from that start point and be alerted if it is exceeded (i.e. if the vehicle is being towed).

The maximum distance is defined as a radius and if the vehicle travels outside this distance or later returns within it with the engine still off then the Leda Compact will raise alerts by sending SMS messages (and voice calls if so configured) to the controller phone.

If vehicle goes OUTSIDE the maximum distance, the Leda Compact sends an SMS of its current location followed by the words "STATE: ACC OS".

If vehicle RETURNS within the maximum distance with the ignition still off, the Leda Compact sends an SMS of its current location followed by "STATE: ACC RS".

● Enable Ignition-Off Movement Alert

Format: 008user passwordRzzz.z

Example: 0080000R1.0

Reply: SET MOVE RADIUS OK

Explanation: When the Leda Compact receives the 008 command with the correct user password it will set the Maximum Ignition-Off Movement Radius according to "Rzzz.z". In this example, the radius is set to 1.0km

● **Disable Ignition-Off Movement Alert**

Command: 009user password

Example: 0090000

Reply: MOVE DEFENCE:OFF

Explanation: When the Leda Compact receives the 009 command with the correct user password the Maximum Ignition-Off Movement feature is disabled.

Leda Compact Ignition ON / OFF Reporting

As a default, the Leda Compact automatically reports a change in the vehicle ignition state (GREEN wire in the cable of the Leda Compact). An SMS is sent to the controller phone when the engine is turned on and when it is turned off.

When the ignition is turned ON, the Leda Compact sends an SMS of its current location followed by the words "AUTO START"

When the ignition is turned OFF, the Leda Compact sends an SMS of its current location followed by the words "AUTO STOP"

● **Enable Ignition State Reporting (default)**

Format: 091userpassword

Example: 0910000

Reply: ACC STATE PROMPT:ON

Explanation: When the Leda Compact receives the 091 command with the correct user password the Ignition State Reporting is enabled.

● **Disable Ignition State Reporting**

Format: 090userpassword

Example: 0900000

Reply: ACC STATE PROMPT:OFF

Explanation: When the Leda Compact receives the 090 command with the correct user password the Ignition State Reporting is disabled.

GPRS Mode

As an alternative to SMS messaging the Leda Compact can use GPRS. In this mode the Leda Compact sends its location data to a server via a GPRS connection. Data

is transferred by TCP/IP packets either on-demand or at specifically defined intervals.

In order to use a GPRS connection the Leda Compact must be configured with the correct Access Point (APN) and login credentials for the mobile network that the SIM belongs to.

In order for the Leda Compact to report its data back to a server, it needs to be configured with that server's IP address and the port number it is to communicate on.

● Switch to GPRS mode

Format: 710userpassword

Example: 7100000

Reply: SET MODE OK, CURRENT MODE: GPRS

Explanation: When the Leda Compact receives the 710 command with the correct user password, it will use a GPRS connection to send its location information.

● Set up the access point name (APN)

Format: #803#userpassword#APNname#APNusername#APNpassword##

Note, if APN for your network does not require a user name and password you can use a shorter version of the same command: **#803#0000#APN Name##**

Example (long version): #803#0000#internet#web#web##

Example (short version): #803#0000#internet##

Reply: SET GPRS ACCOUNT OK

Explanation: When the Leda Compact receives the 803 command with the correct user password it will configure itself to use the GPRS login details included in the command. Consult FAQ pages or similar online resources on the GPRS network provider's website for details of what you will need to fill in here.

● Set up TCP/IP server IP address and port number

Format: #804#userpassword#IPaddress#portnumber##

Example: #804#0000#220.165.9.225#2332##

Reply: SET SERVER IP AND PORT OK

Explanation: When the Leda Compact receives the 804 command with the correct user password it will configure itself to send TCP/IP packets over GPRS to the specified server IP address and port.

● On-Demand Location Upload by GPRS

Format: #806#userpassword##

Example: #806#0000##

Reply: START GPRS UPLOAD

Explanation: When the Leda Compact receives the 806 command with the correct user password it will send its current location via GPRS to the appointed server.

Data upload Interval

Two different upload intervals can be defined according to whether the vehicle ignition is ON or OFF. This feature is useful in controlling airtime usage because location information updates are less critical when a vehicle is stationary (engine off) rather than when it is driving around (engine on).

As a further control of airtime usage, instead of sending location information as individual transmissions you can configure the Leda Compact to record position data over a period of time and to upload the information as a 'bundle' to the server.

• Data upload Interval When Ignition Is ON:

Format: #805#userpassword#T#N##

Example: #805#0000#30#2##

Reply: SET GPS SAMPLING TIME AND QUANTITY OK

Explanation: In the message format, "T" is the interval in seconds between location data being recorded (any number from 10 to 59999) and "N" is the number of records required (from 1 to 50) for a data transmission to be sent.

For the example above, when vehicle ignition is ON, the Leda Compact will record its current position once every 30 seconds and will upload data to the server when it has collected 2 data records (i.e. GPRS transmission once every minute).

• Data Upload interval When Ignition Is OFF:

Format: #809#userpassword#T#N##

Example: #809#0000#120#5##

Reply: SET GPS SAMPLING TIME AND QUANTITY OK

Explanation: In the message format, "T" is the interval in seconds between location data being recorded (any number from 10 to 59999) and "N" is the number of records required (from 1 to 50) for a data transmission to be sent.

For the example above, when vehicle ignition is OFF, the Leda Compact will record its current position once every 120 seconds and uploads data to the server when it accumulates 5 data records (i.e. GPRS transmission once every 10 minutes).

Data Logger

This useful feature continually runs in the background and ensures that no location information is lost because of poor GPRS connections. The Leda Compact constantly stores the last 864 location records in memory at a defined interval that can be set independently of all other location gathering intervals.

By configuring the Data Logger with an appropriate sampling interval any unaccounted for 'jumps' in a vehicle's location can be 'filled-in' by requesting an instant upload of points stored over a previous number of hours.

A maximum of 864 location points are stored with the oldest records being continually overwritten by the most recent.

● **Configure Data Logger Interval**

Format: #807#userpassword#X##

Example: #807#0000#5##

Reply: SET SAMPLING OK

Explanation: In the message format, "X" is the interval in seconds between location data being written to memory.

For the example above, the Leda Compact will save instantaneous location data to internal memory every 5 seconds. The Leda Compact will always save the most recent 864 locations, constantly overwriting the oldest records with new ones.

If the Leda Compact has been configured with Vibration Sensor Power Management it will automatically stop recording data if the vehicle stops moving and will start again when the vibration sensor detects the vehicle moving once more.

● **On-Demand Upload Data Logger To Server**

Format: #808#userpassword#H##

Example: #808#0000#24##

Reply: START UPLOAD 24H HISTORY RECORD

Explanation: In the message format, "H" is the number of hours of stored records that should be uploaded.

When the Leda Compact receives the 808 command with the correct user password it will begin an upload of records from the Data Logger memory.

In the above example, the Leda Compact will upload the previous 24 hours of stored location records.

● **Upgrade device by GPRS**

Format: !-userpassword

Example: !-0000,88.212.165.127,user,logon

Reply: None

Explanation: This special command should not be used without advice from Diplomat Support or your Local Representative.

This command will cause the Leda Compact to connect to the Diplomat UK based FTP server and upgrade its firmware to the latest version. Other servers are available in other countries across the world. Diplomat Support or your Local Representative will advise the correct command to use in your country