LAIPAC TECH

S-911 GPS Personal Locator

User's Manual & Reference Guide

Revision 3.0

SAFETY PRECAUTIONS

Remember to comply with legal requirements and local restrictions when using the S-911. For example in Airplanes, Gas Stations, Hospitals and any other environment where usage of GSM/CDMA equipment is prohibited. The S-911 can interfere with the functionality of pacemakers and hearing-aids. Users should use caution when keeping the S-911 in close proximity to such devices. For more information consult your physician. You may only open the S-911 to replace the battery or SIM card. Only authorized battery replacements should be used and failure to comply will void the warranty and can cause serious injury. Under no circumstances should the user open the battery.

DISCLAIMER AND LIMITATION OF LIABILITY

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Laipac Technology Inc. and its suppliers assume no responsibility for any damage or loss resulting from the use of this product and user's guide. Laipac Technology Inc. and its suppliers assume no responsibility for any loss or claims by third parties that may arise through the use of the software. Laipac Technology Inc. and its suppliers assume no responsibility for any damage or loss caused by no connection of cell phone network, GPS network, and misconduct of monitoring operation, dead battery, or repairs

FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and receiver.*
- *Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer or an experienced cell phone, radio/TV technician for help.*

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the device

Table of Contents

1 INTRODUCTION

1.1 Welcome!

Congratulations on purchasing the S-911 Personal Locator!

The S-911 Personal Locator is a real-time personal tracking device which operates over GSM/GPRS networks and utilizes a built-in high sensitivity GPS receiver. Your S-911 contains…

- A high-sensitivity GPS receiver with Omni-directional GPS antenna
- A GPS data logger which can plot more than 1300 waypoints
- A real-time emergency assistance button
- One-key dialing for 2-way voice communication over GSM
- Real-time location reporting over SMS/GPRS
- Speed limit alerting, mileage reporting, G-Sensor/Crash detection alerting, and out of Geo-Fence alerting are all standard
- And much more…

The S-911 is an all-in-one compact and unique personal safety device.

The following guide will help you set up the S-911 Personal Locator and quickly instruct you on usage and operation.

1.2 S-911 Personal Locator™ Features

- Available for GSM/GPRS 850/1900 MHz & 900/1800 MHz
- Complies with FCC, CE, and PTCRB certifications
- Compact and robust design for portable usage
- GPS, GSM/GPRS & Battery/Status Indicator LEDs
- Internal Li-Ion rechargeable battery
- Built in High-Sensitivity GPS receiver and Omni-directional GPS antenna
- 3 x Emergency buttons
    - 2 x Fixed phone number 2-way communication buttons
    - Emergency Call button with silent call feature by digital voice with GPS position report
    - SMS message sending feature and instant Geo-Fence button
- 1 x Power button and 1 x Function button
    - Power On-Off button and sleep mode feature
    - Function button for SMS, Geo-Fence, and SOS features
    - Communication mode switch from GSM <-> GPRS
- Multi-language support allows users to select between English and Spanish for Emergency Calls to police stations, monitoring centers, or other authorities
- NMEA 2.0 Output to USB for In-Car navigation
- Instant Geo-Fence capability with in-out of fence reporting
- Intelligent 256Kb data logger with dynamic distance & time settings for recording up to 1350 positions
- GSM/SMS and GPRS real-time position reporting by time interval or distance travelled
- The ability to set parameters either remotely over the air or locally through the S-911 Data Port
- Distance accumulator built in for mileage reporting
- Over-speed warning report
- G-Sensor/shock reporting
- Sleep/awake mode for extended battery life

2 ELECTRICAL SPECIFICATIONS

2.1 Electrical & Environmental Specs

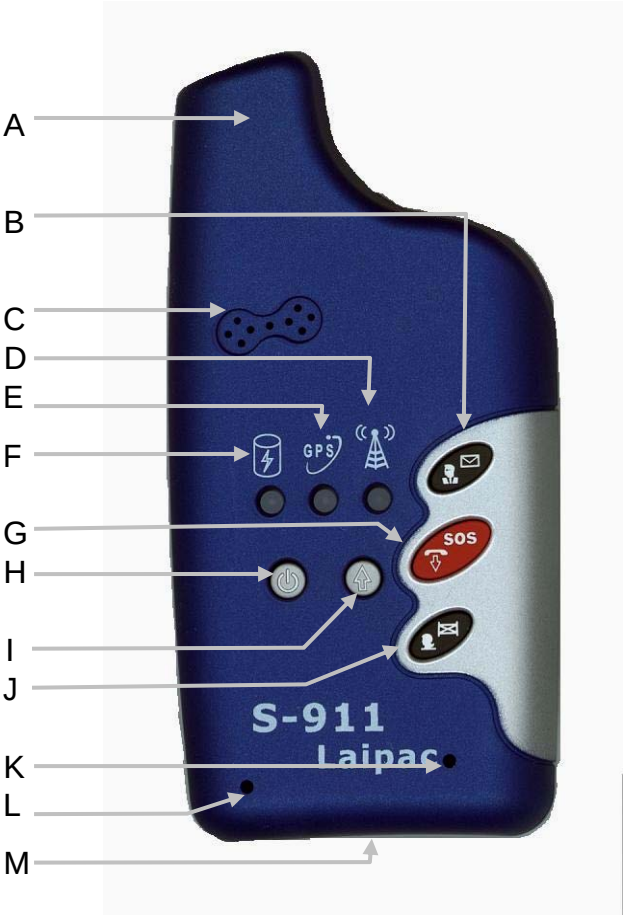
	Min	Typical	Max	Units
Li-Ion Battery Voltage	3.6	4.2	-	V
Current Consumption in operation mode	-			mA
Current Consumption in Sleep Mode	-	1.5	-	mA
Peak Current (< 100mS)	-	-	1500	mA
Supply ESD susceptibility	-	-	12	kV
Ambient operating temperature	-30	-	70	° C
Storage temperature	-40	-	100	° C

2.2 GPS Engine Specs

	Value	*Units*
Channels	20	Channels
Position accuracy	< 10	Meters
Velocity accuracy	0.1	m/s
Time accuracy	1	uS
Cold start acquisition time	45	Seconds
Warm start acquisition time	35	Seconds
Hot start acquisition time	8	Seconds
Maximum velocity tracked	999	Knots
Maximum altitude tracked	18,000	Meters
Tracking Sensitivity	-160	dBm
Navigation Sensitivity	-160	dBm

3 THE S-911 PERSONAL LOCATOR™

The following illustrations show the locations and names of the physical features:



A. GPS Antenna

B. Button 1

C. Speaker

D. GSM/GPRS LED Indication

E. GPS LED Indication

F. Busy/Battery LED Indication

G. Button 2

H. Power On/Off

I. Shift- When held down in conjunction with button 1, 2, or 3 the S-911 performs alternate operations associated with that button

J. Button 3

K. Reset Pin Hole

L. Microphone

M. Charging/Data Port

Button	Function	Alternate Function
	Speed Dial	***Send SMS position***
	Hang-up	***S.O.S Silent Voice Call***
	Speed Dial 2	***Enable Geo-Fence***
	Power	***Switch between SMS & GPRS Modes***

4 GETTING STARTED

IMPORTANT NOTICE: PLEASE READ AND FULLY UNDERSTAND THIS MANUAL BEFORE ATTEMPTING TO OPERATE THE S-911 PERSONAL LOCATOR. FAILURE TO COMPLY CAN RESULT IN IMPROPER USAGE WHICH IS NOT COVERED BY THE MANUFACTURES WARRANTY!

To begin working with your S-911 Personal Locator you will require the following:

- S-911 Personal Locator
- AC Charger (Provided)
- USB Programming Cable (Provided)
- PC running Windows XP™
- An activated SIM card with GSM/GPRS

Non-Contact Battery inhibiter slip

4.1 Charging the Battery

Before using your S-911 Personal Locator you will need to charge the battery. Be sure to first open the unit and remove the insulator from the battery connectors. We recommend charging the unit while turned off for 3-4 hours.

When the battery voltage drops to 3.8V, the S-911 Low Battery Alert LED (Red Status LED) will flash to warn the user to charge the S-911 device so that the device may continue to work. When the battery voltage drops to 3.5V, the S-911 will turn off. It is recommended to connect the S-911 to the charger whenever possible. While on charge, the Battery Charge Management System will engage the Floating Charge Mode. In this mode, the S911 will monitor the battery and engage charging when the voltage drops below 3.6V.

When the battery charger is plugged in, the Red Status LED will be on to indicate that the S-911's battery charging procedure is activated.

To charge the battery, plug the AC adaptor into a wall outlet, then plug the charger's cable connector into the Data Port of the S-911, as shown in the picture. The Battery Status LED will turn to SOLID RED when charging and turn off when fully charged.

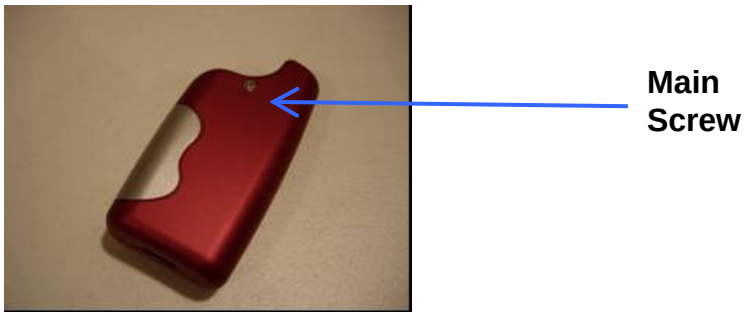
4.2 Inserting the SIM Card

A valid SIM (Subscriber Identity Module) card must be provided by the user in order to use this device. Your GSM Mobile phone carrier will give you one when you subscribe to either a contract or non-contract agreement. The SIM card must be a 3V SIM. The S-911 personal locator is not compatible with the older 5V version SIM cards.

***Notes**: Your provider for location based service may supply you with an S-911 Personal Locator which has a SIM card already inside. If so, do not open the case or the warranty may be void. The S-911 Personal Locator is designed to be a robust and anti-vandalism personal safety device. It is unlike a cell phone where the battery may be easily removed. The user will find that in most situations, the SIM card has been installed by the distributor or service provider along with a warranty seal.*

If you need to insert a SIM card into your unit, follow these steps:

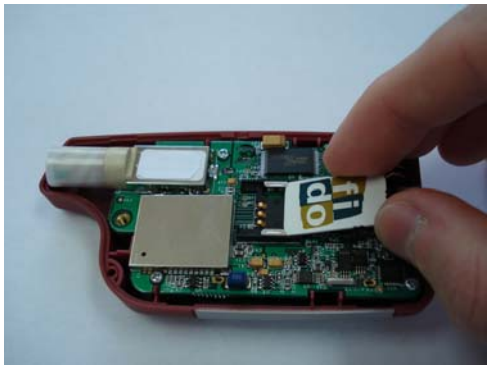
1. Remove the main screw



2. Use your fingers to open the case as shown in the picture below

3. Follow the pictures for the placement of the SIM card

***Note**: If your SIM card holder looks different than the one in the picture, please ensure that the end WITHOUT the notch is inserted first. Also, please ensure that you are properly grounded before opening the S-911.*



Close the case carefully and replace the main screw.

Congratulations! Now your S-911 is ready to be configured!

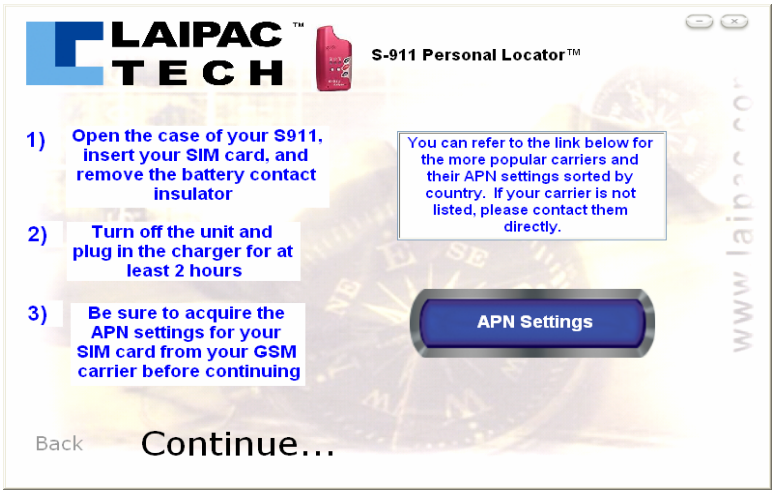
5 PROGRAMMING YOUR S-911

NOTE: PLEASE ENSURE THAT YOUR SIM CARD IS ACTIVATED, AND GPRS SERVICE IS AVAILABLE. PLEASE CONTACT YOUR GSM NETWORK SERVICE PROVIDER FOR ASSISTANCE.

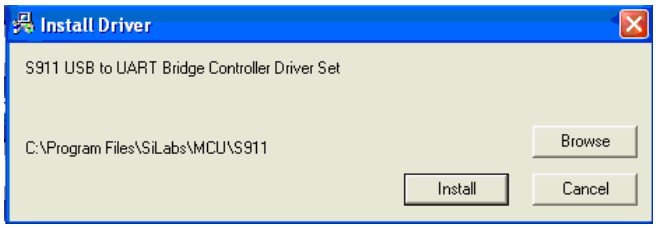
5.1 USB Driver and Configuration Utility Install

Begin by inserting the S-911 CD into your drive and clicking "*Getting Started*". Make sure you install both the USB Driver and Configuration Utility before connecting the S-911 to your PC.

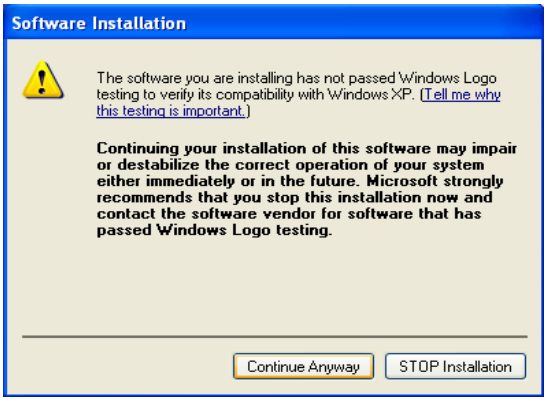
Please follow the instructions and click "*Continue…*"



When this dialog box appears Click "*Install*" to continue. This will execute the install procedure for the drivers needed to detect your hardware.



If you get the following message click the "*Continue Anyways*" box. The drivers may not be digitally signed by Microsoft but will still work on your system.



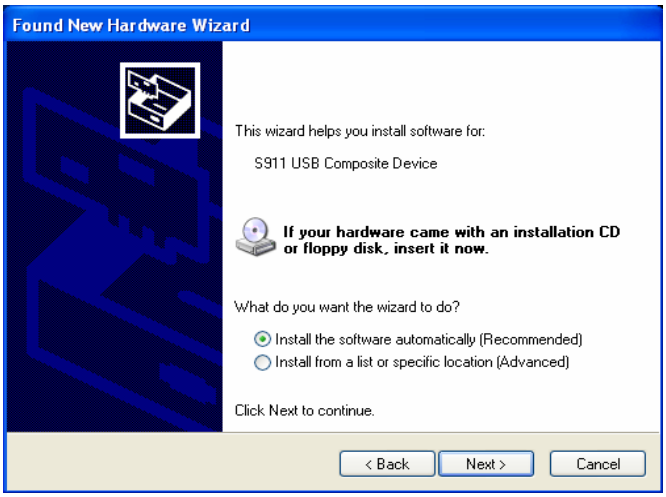
When you receive the dialog box "Installation Successful" click "*Ok*". Now install the Configuration Utility by following the on-screen instructions.

5.2 Hardware Installation

The S-911 Personal Locator, with charged battery and with activated SIM card installed, can be connected to your computer using the USB adapter.

If you get a “Found New Hardware” message, click the “*Yes, this time only*” then click “*Next*”.

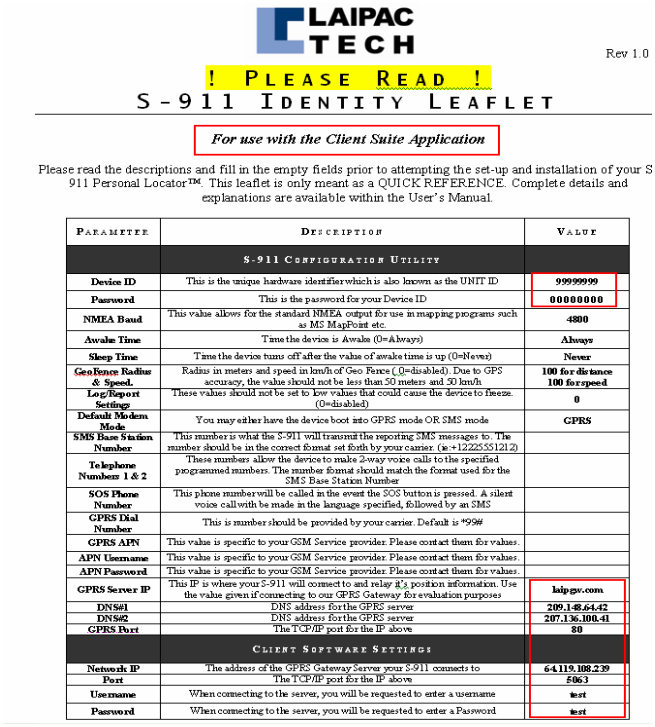
If the Wizard appears again select “*Install the software automatically*” then click “*Next*”.



The device will be detected and will come up with another Windows digital signing warning message just click “*Continue Anyway*” then click “*Finish”*.

5.3 Demo Setup

There are currently two options for you to demo your new S-911 Personal Locator. One way is to use our web-based tracking service LocationNow.com, and the other is to use our Client Suite application which installs on your machine. You may have made this decision already when purchasing the unit and subsequently your account information for LocationNow.com or the Client Suite should already be provided for you in your kit. Please refer to the "Identity Leaflet" for your account information and take note whether this information is regarding LocationNow.com or the Client Suite application as the account details are **NOT** interchangeable. Please contact the Applications department if you would like additional accounts setup for you.



LAIPAC TECH

Rev 1.0

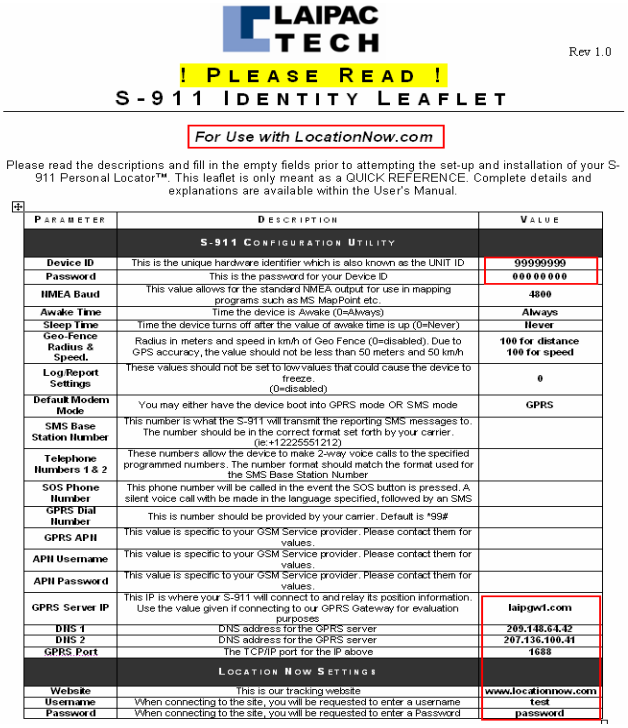
! PLEASE READ !

S-911 IDENTITY LEAFLET

For use with the Client Suite Application

Please read the descriptions and fill in the empty fields prior to attempting the set-up and installation of your S 911 Personal Locator™. This leaflet is only meant as a QUICK REFERENCE. Complete details and explanations are available within the User's Manual.

PARAMETER	DESCRIPTION	VALUE
	S-911 CONFIGURATION UTILITY	
Device ID	This is the unique hardware identifier which is also known as the UNIT ID	99999999
Password	This is the password for your Device ID	00000000
NMEA Baud	This value allows for the standard NMEA output for use in mapping programs such as MS MapPoint etc.	4800
Awake Time	Time the device is Awake (0=Always)	Always
Sleep Time	Time the device turns off after the value of awake time is up (0=Never)	Never
GeoFence Radius & Speed.	Radius in meters and speed in km/h of Geo Fence (0=disabled). Due to GPS accuracy, the value should not be less than 50 meters and 50 km/h	100 for distance 100 for speed
Log/Report Settings	These values should not be set to low values that could cause the device to freeze. (0=disabled)	0
Default Modem Mode	You may either have the device boot into GPRS mode OR SMS mode	GPRS
SMS Base Station Number	This number is what the S-911 will transmit the reporting SMS messages to. The number should be in the correct format set forth by your carrier. (ie:+12225551212)	
Telephone Numbers 1 & 2	These numbers allow the device to make 2-way voice calls to the specified programmed numbers. The number format should match the format used for the SMS Base Station Number	
SOS Phone Number	This phone number will be called in the event the SOS button is pressed. A silent voice call with be made in the language specified, followed by an SMS	
GPRS Dial Number	This is number should be provided by your carrier. Default is *99#	
GPRS APN	This value is specific to your GSM Service provider. Please contact them for values.	
APN Username	This value is specific to your GSM Service provider. Please contact them for values.	
APN Password	This value is specific to your GSM Service provider. Please contact them for values.	
GPRS Server IP	This IP is where your S-911 will connect to and relay it's position information. Use the value given if connecting to our GPRS Gateway for evaluation purposes	laipgw.com
DNS#1	DNS address for the GPRS server	209.148.64.42
DNS#2	DNS address for the GPRS server	207.136.100.41
GPRS Port	The TCP/IP port for the IP above	80
	CLIENT SOFTWARE SETTINGS	
Network IP	The address of the GPRS Gateway Server your S-911 connects to	64.119.108.239
Port	The TCP/IP port for the IP above	5063
Username	When connecting to the server, you will be requested to enter a username	test
Password	When connecting to the server, you will be requested to enter a Password	test



LAIPAC TECH

Rev 1.0

! PLEASE READ !

S-911 IDENTITY LEAFLET

For Use with LocationNow.com

Please read the descriptions and fill in the empty fields prior to attempting the set-up and installation of your S-911 Personal Locator™. This leaflet is only meant as a QUICK REFERENCE. Complete details and explanations are available within the User's Manual.

PARAMETER	DESCRIPTION	VALUE
	S-911 CONFIGURATION UTILITY	
Device ID	This is the unique hardware identifier which is also known as the UNIT ID	99999999
Password	This is the password for your Device ID	00000000
NMEA Baud	This value allows for the standard NMEA output for use in mapping programs such as MS MapPoint etc.	4800
Awake Time	Time the device is Awake (0=Always)	Always
Sleep Time	Time the device turns off after the value of awake time is up (0=Never)	Never
Geo-Fence Radius & Speed.	Radius in meters and speed in km/h of Geo Fence (0=disabled). Due to GPS accuracy, the value should not be less than 50 meters and 50 km/h	100 for distance 100 for speed
Log/Report Settings	These values should not be set to low values that could cause the device to freeze. (0=disabled)	0
Default Modem Mode	You may either have the device boot into GPRS mode OR SMS mode	GPRS
SMS Base Station Number	This number is what the S-911 will transmit the reporting SMS messages to. The number should be in the correct format set forth by your carrier. (ie:+12225551212)	
Telephone Numbers 1 & 2	These numbers allow the device to make 2-way voice calls to the specified programmed numbers. The number format should match the format used for the SMS Base Station Number	
SOS Phone Number	This phone number will be called in the event the SOS button is pressed. A silent voice call with be made in the language specified, followed by an SMS	
GPRS Dial Number	This is number should be provided by your carrier. Default is *99#	
GPRS APN	This value is specific to your GSM Service provider. Please contact them for values.	
APN Username	This value is specific to your GSM Service provider. Please contact them for values.	
APN Password	This value is specific to your GSM Service provider. Please contact them for values.	
GPRS Server IP	This IP is where your S-911 will connect to and relay its position information. Use the value given if connecting to our GPRS Gateway for evaluation purposes	laipgw1.com
DNS 1	DNS address for the GPRS server	209.148.64.42
DNS 2	DNS address for the GPRS server	207.136.100.41
GPRS Port	The TCP/IP port for the IP above	1688
	LOCATION NOW SETTINGS	
Website	This is our tracking website	www.locationnow.com
Username	When connecting to the site, you will be requested to enter a username	test
Password	When connecting to the site, you will be requested to enter a Password	password

The boxes in red indicate the most important information on your "Identity Leaflet". You will need to save this information into the S-911 using the Configuration Utility.

5.3.1 Using LocationNow.com

If your demo account is for LocationNow.com, configure your device with the details outlined on your "Identity Leaflet" and proceed to our website and login using the username and password provided. You must wait for your unit to have a valid GPS position and be connected to the GPRS network before you can see your device on the map. Refer to the S-911 Quick Reference for operation instructions.

5.3.2 Using the Client Software Suite

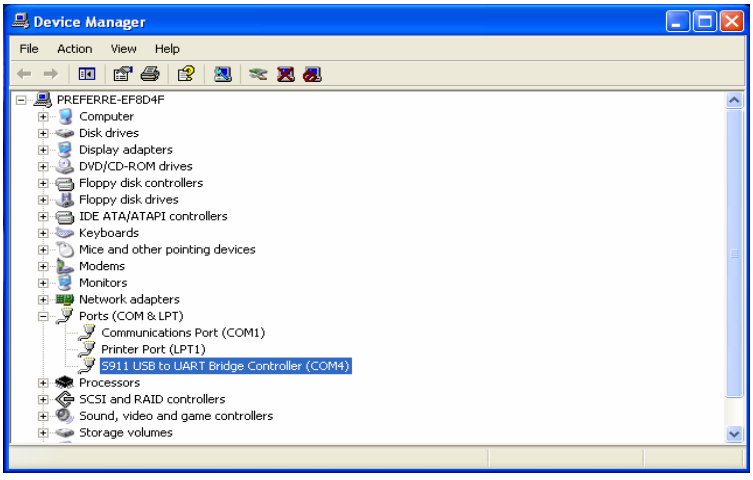
***Attention**: The .NET Frameworks 1.1 and 2.0 from Microsoft must be installed on your machine before you install the Client Suite!!*

Proceed to the Software section of the S-911 CD and install the Client Suite. Refer to your "Identity Leaflet" and the Client Software User's Manual for setup instructions. You must wait for your unit to have a valid GPS position and be connected to the GPRS network before you can see your device on the map. Refer to the S-911 Quick Reference for operation instructions.

5.4 Using the S-911 Configuration Utility

5.4.1 Checking COM-PORT Settings

Before you open the Configuration Utility, connect the S-911 to your PC and determine which COM port the device is using. To do this, proceed by right clicking on *My Computer*, left click on *Properties*, left click on the *Hardware* tab (located at the top), than finally left click on *Device Manager*, and expand Ports (COM & LPT). You can see below in this example the S-911 is using COM 4.

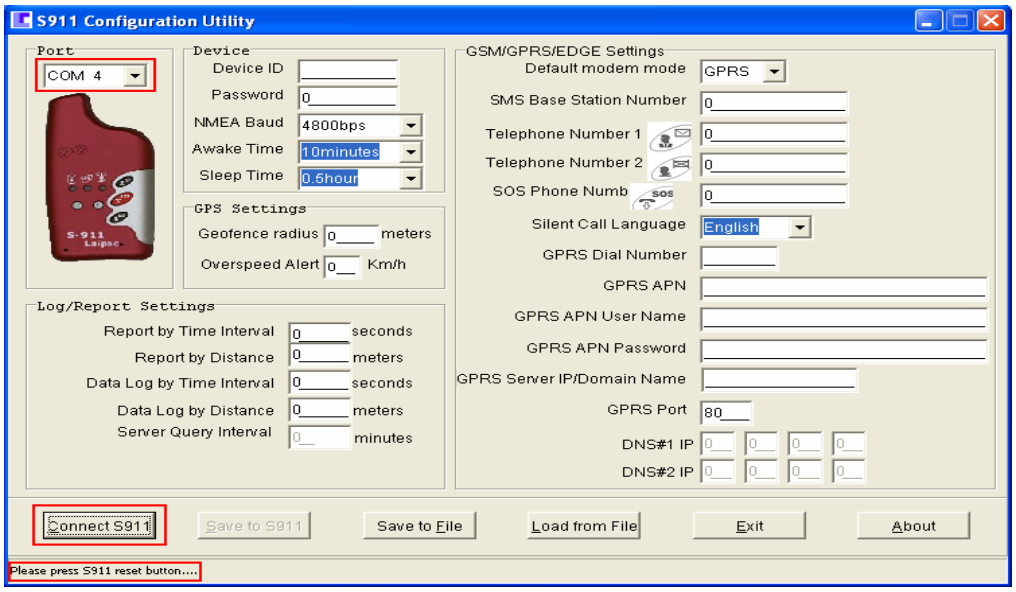


5.4.2 Connecting and Configuring the S-911

Connect your S-911 to the Configuration Utility by double-clicking the icon and following the steps below:

1: *Configure Port Options*

Select the COM port to which your device is connected to in the drop-down menu and then press "*Connect*" (in this case COM 4). The lower left of the window will show you the status of the device and will ask you to press the reset button on the S-911.



After pressing the reset button, you will see "S-911 Configuration is Received" when connected.

Below is a description of the settings which you can modify using the configuration utility. The settings in ***italics*** are required for communication with our servers. All other settings are variable. The specific information for your device may be found on the "Identity Leaflet" provided in the box.

2: *Configure Device Options*

Device ID: *Unique to each unit and assigned by Laipac for use with our servers. Please enter the value found on the Identity Leaflet.*

Password: *00000000 (should always come preset as listed).*

NMEA Baud:	Baud rate of NMEA 2.0 GPRMC message through USB port. This allows the S-911 to be connected directly to a PC running mapping software such as Microsoft Streets & Trips when set to 4800 and used as a GPS receiver only.
Awake Time:	Time for the device to be 'On'. It will go into sleep mode when this time expires. We recommend settings this to 'Always' to keep the unit on for demo.
Sleep Time:	The time the unit will stay in sleep mode. Should be '0' when the Awake Time is set to 'Always'.
Geo-Fence Radius:	Radius of the virtual hardware geo-fence in meters when triggered from the unit.
Overspeed Alert:	Speed in km/h after which the device will send an Overspeed alert to the control center.
Report by Time:	Time interval for live reports to be sent to the control center. This should be kept to less than 15 minutes to maintain a GPRS connection.
Report by Distance:	The distance interval that will trigger a live report to be sent to the control center. This should not be smaller than 50 meters.
Log by Time:	How often the unit will log a position report.
Log by Distance:	The distance interval that will trigger a position message to be logged.
Default Mode:	*GPRS. This could be set to SMS depending on the application but should be GPRS to connect with our servers.*
SMS Base Station #:	Destination number for all text messages when in SMS mode.
Phone # 1 & 2:	Quick dial phone numbers. Be sure to use area code etc.
SOS Phone #:	Destination for SOS silent voice call message.
GPRS Dial Number:	*Number provided by your carrier. Usually *99# or *99***1#.*

***GPRS APN**:* *Obtained from www.taniwha.org.uk\gprs.html or from your GSM provider.*

***APN User Name**:* *Obtained from www.taniwha.org.uk\gprs.html or from your GSM provider.*

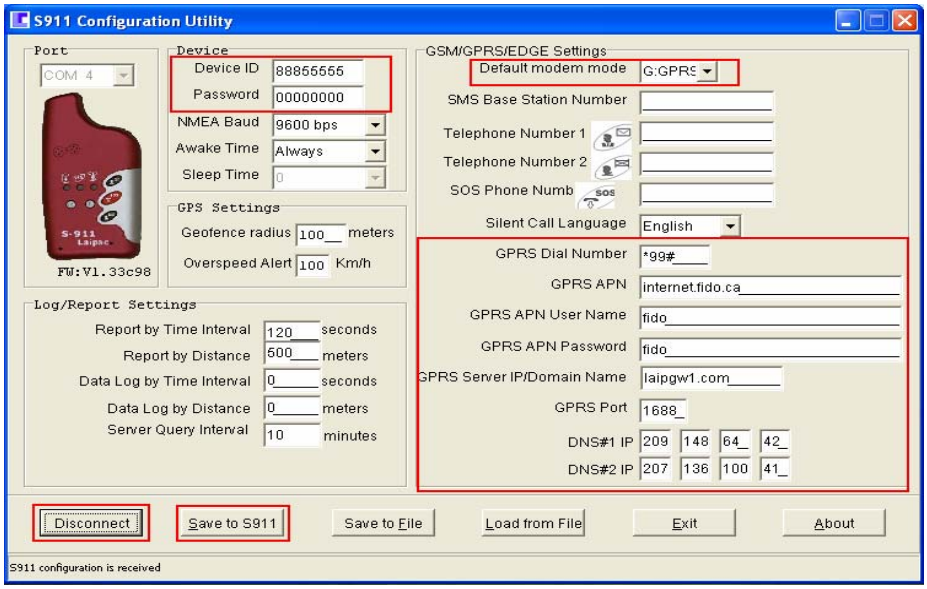
***APN Password**:* *Obtained from www.taniwha.org.uk\gprs.html or from your GSM provider.*

***GPRS Server IP**:* *The DNS name or IP the S-911 will connect to and relay its position information. For demo purposes this would be our server name as given on the Identity Leaflet. If a DNS name is used the DNS#1/2 servers must be specified.*

***GPRS Port**:* *TCP/IP port for the IP above.*

DNS#1 IP: *Address for the domain name server for DNS support.*

DNS#2 IP: *Address for the domain name server for DNS support.*



3: *Saving the configuration*

To save the current configuration to a *.ini file Click "*Save to File*" and specify where the file will be saved to. This will allow you to load your configuration file at a later time.

To save the current configuration to the S-911, Click "*Save to S911*". After successfully saving the configuration click "*Disconnect*" to properly remove the S-911 from your computer and save the settings to the device memory.

6 USING YOUR S-911

Do not proceed any further unless you have completed the preceding steps. Once you have inserted a valid SIM card, and fully charged the battery, you are now ready to operate the *S-911 Personal Locator.* Once the cover is closed the 3 LEDs will blink sequentially to indicate that the unit is working with the battery.

Once your S-911 is configured and fully charged, you can initiate your device.

To turn the unit on press the Power button  and hold for 2 seconds.

When the device powers on for the first time, the LEDs will display the *Power-on Test*. All LEDs will cycle green, then red. If your device fails to do this, please contact the distributor where you purchased your device.

When your device has completed its power on test the GPS LED will flash green. This indicates that it is trying to acquire a GPS signal. If your unit flashes for more than 2 minutes ensure that the device has an unobstructed view of the sky. Having a clear unobstructed view of the sky when you initially power on the device will reduce the "Cold Start" time of the GPS receiver. Once the GPS LED turns to solid green this will turn on the GSM Modem.

Note:

The S-911 uses a highly sensitive GPS receiver with a 360 degree high gain GPS antenna. It's unlike other commercial products in that the S-911 can be facing any direction and still receives a valid GPS position. In most situations the S-911 needs a direct line of site to open sky to have a short cold start time. Once the unit gets a valid GPS position (GPS LED is constantly green), the user no longer needs to maintain a line of sight to open sky. The user may then go indoors, under a bridge, inside a vehicle, or navigate through urban environments and the S-911 will continue to keep a valid GPS position. Users must be aware that the S-911 is not yet a 100% indoor GPS system. Real life applications may present situations where RF noise, RF interference, and other conditions may affect the performance of the GPS while indoors.

If your device was configured to start in SMS Mode, the Antenna LED will **FLASH RED** indicating that it is on the network and ready to send SMS reports and place/receive calls. If your unit was configured to start in GPRS mode, than the Antenna LED will cycle between **SOLID GREEN→RED FLICKER→OFF** when attempting to connect to the GPRS network. Wait times to establish a connection depend on your GSM carrier and can take up to 5 minutes.

Once the device is ONLINE, the Antenna LED flash pattern will be **SOLID GREEN** WITH A **RED FLICKER**.

When your unit is either in SMS mode or ONLINE in GPRS mode, you may now begin tracking your device. Please refer to the S-911 Software Users Manual for instructions on displaying the location on your PC.

6.1 LED Reference

Note: Each of the three LEDs displays both red and green!

Status/Battery LED

- **Solid Green** = *CPU busy / Action Acknowledged*
- **Solid Red** = *Battery charging*
- **Flashing Red** = *Battery low – please charge*
- **Off =** *Battery charged / battery healthy*

GPS LED

- **Solid Green** = *Valid Position*
- **Flashing Green** = *Acquiring Position*
- **Solid Green** with **Red Flash** = *Valid Position with Geo-Fence Enabled*
- **Off =** *GPS receiver disabled*

GSM LED

- **Solid Red** = *No SIM card / Wrong frequency network / no GSM signal*
- **Flashing Red** = *Registered to GSM network and operating in SMS mode*
- **Flashing Green** and **Flashing Red** = *Attempting to connect to GPRS*
- **Solid Green** with **Red Flash** = *Connected to GPRS*
- **Off =** *GSM modem disabled*

6.2 Button Reference

Button Definitions:

In General

- *To **disable/enable the GPS receiver** press and hold*  *for 6 seconds*
- *To **toggle between SMS and GPRS mode** press*  *followed by*  *and hold both for 3 seconds*
- *To **power on/off** the unit hold*  *for 3 seconds*
- *To manually **turn on the GSM modem** press* 

In SMS mode

- *Press*  *to quick dial number 1*
- *Press*  *to quick dial number 2*
- *Press*  *followed by*  *to send a text message with your position*
- *Press*  *followed by*  *to enable/disable the user Geo-Fence*
- *Press*  *followed by*  *to send an emergency report*

In GPRS mode

- *Press*  *to quick dial number 1*
- *Press*  *to quick dial number 2*
- *Press*  *followed by*  *to send a position report to the control centre*
- *Press*  *followed by*  *to enable/disable the user Geo-Fence*
- *Press*  *followed by*  *to send an emergency report*

6.3 Feature Descriptions

Report GPS Position in real-time by SMS or GPRS

- Report GPS position by pressing + . In SMS mode the message will be sent to the SMS Base Station, in GPRS mode it will be sent to the GPRS server.

2 Way Communication (Fixed Number Phone calls)

- Initiate 2 way voice communication with the phone number stored in the memory locations by pressing the corresponding speed dial button or .
- To hang up, press . To answer an incoming call, press .

Emergency Silent Voice Call

- Place a silent call to report your Device ID, Position, Speed, Date, and Time using the internal digital voice. You may initiate the emergency call by pressing + for 2 seconds. Once the call has completed, a message with the same information will be sent via SMS (to the base station) or GPRS (to the control centre).

Instant Geo-Fence Setting

- By pressing + , the personal locator will create a virtual Geo-Fence with the default radius (in meters) and the centre point located at the current GPS position. The Antenna LED will change to Solid Green with a slow Red Flash indicating that the Instant or Self-Set Geo-Fence is active. If the device moves out of this virtual fence area, it will report to the control centre as a warning event and increase the Red GPS LED Flashing rate to fast.

Overspeed Alerting

- The S-911 will report a message to either the SMS base station or the control center when the speed of the unit exceeds your setting.

Switch between SMS and GPRS Mode

- To Switch between SMS Mode and GPRS Mode, press and hold the Shift button  followed by the power button  for 2 seconds. You will notice the status/battery LED flash indicating the activity is being performed. The S-911 confirms when GPRS mode is active by setting the antenna LED **SOLID GREEN** with a **RED FLASH**. SMS Mode is confirmed by setting the Antenna LED only **FLASHING RED.**

G-Sensor

- When a measured acceleration of 1G or more is achieved the S-911 will report to the SMS base station or control center in 1G intervals up to 6G. i.e. 1G, 2G, 3G…6G.

Enabling / Disabling the GPS Receiver

- In order to save battery power you can toggle off/on the GPS receiver by pressing and holding the shift button  for 5 seconds.

Sleep / Awake Timer Settings

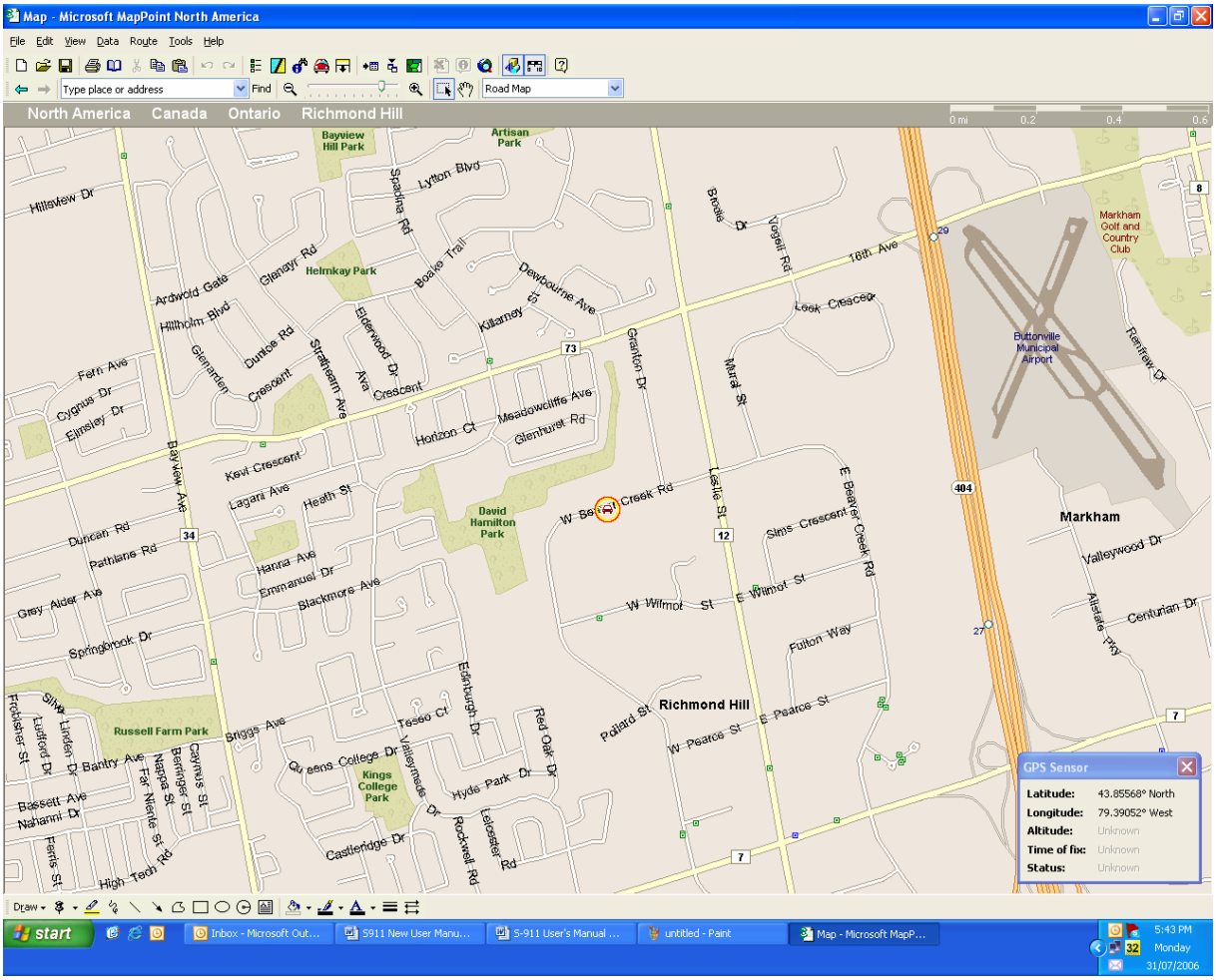
- Another way to save battery life is to set the sleep/awake timer. The unit will remain on for the duration of the Awake setting and then turn off for the duration of the Sleep setting. During the off period, no systems are functional on the unit.

Logging and Downloading

- Logging and reporting are completely independent of each other. When you set the logging intervals these do not impact the reporting intervals. To download the logged data connect the unit to HyperTerminal at 9600-8-None-1-None and press *"Enter".* You can also download the logged data over the air. Refer to the Client Software Suite manual for instructions concerning the downloading of logged data.

7 USING THE S-911 AS A GPS ANTENNA

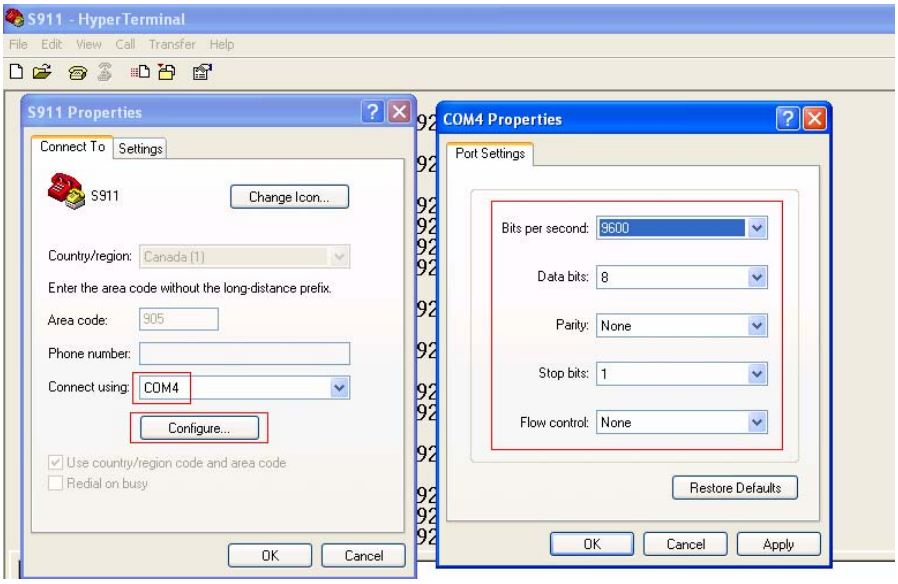
The S-911 can also be used as a passive GPS antenna for use with any off-the-shelf mapping software such as Microsoft MapPoint™ or Streets & Trips™. No SIM card is required for this. To enable this mode, set the NMEA baud rate in the configuration utility to 4800. Then you can connect the USB cable to your PC and view your position. Below is a screenshot from Microsoft MapPoint 2004™ using an S-911 as a passive antenna.

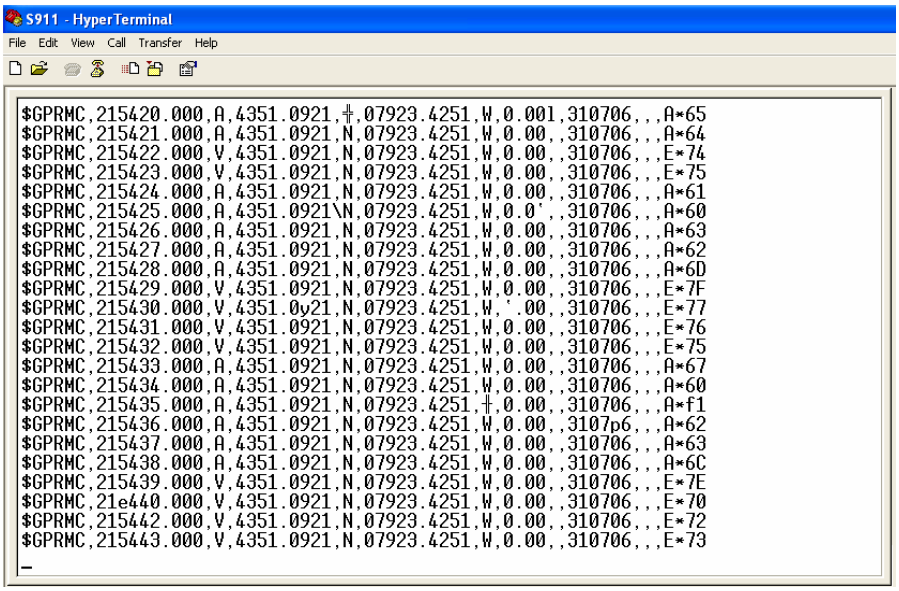


8 CONNECTING THE S-911 TO HYPERTERMINAL

In the case that you would like to view the GPRMC message or locally download your logged data, refer to the following configuration. You must make sure you set the baud rate of the S-911 to 9600.

In HyperTerminal, select the appropriate COM port that the S-911 is connected to and make sure no other programs are accessing that same port such as the configuration utility. The settings for HyperTerminal should be 9600-8-None-1-None as shown below. To download your logged data, press "*Enter*".





9 BATTERY LIFE

The current battery is a 1300mAh Li-Ion rechargeable. Based on our testing the run-time is as follows with the unit 'Always-On'.

GPS Rx On	GPS Rx Off
10-12 hours	~40 hours

The sleep/awake settings may also be set to increase the run-time. The battery life is greatly dependant on how often the voice features are used, how long the GPS receiver is turned on, and how strong the GSM and GPS signals are in your particular area. Results may vary.

10 COMMUNICATIONS PROTOCOL

If you are interested in developing your own software or interfacing our hardware with your existing back-end solution, you may contact sales@laipac.com to obtain our communications protocol. This document defines and describes all of the messages that are used by the S-911 Personal Locator and Starfinder AVL to communicate with the GPRS server. These messages include all reports and configurations over the air in both SMS and GPRS modes.