GEOPOINT BOX

PERSONAL TRACKER

User Manual

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July Edition 2009

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It is absolutely forbidden to use the device for different uses other than those for which it has been devised for, as inferred to in this manual. When using the features in this device, obey all laws and respect privacy and legitimate rights of others.

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Note for the users of appliances

According to the article 13 of the Legislative Decree no. 151 dated July 25, 2005, “Enforcement of the 2002/95/EC and 2003/108/EC directives, relavant to the reduction of dangerous substances in electric and electronic applinaces, as well as waste disposal”, the symbol of a crossed dustbin applied on appliances or on their cases means that the product at the end of its life cycle must be disposed in a dedicated location than other waste.

The user must, therefore, dispose the aplliance at its end-of-life in the relevant disposal site for electric and electronic waste or give it back to resellers at the time of purchasing a news equivalent one.

The correct disposal and consequant start up of a recycling of the unused appliance, treatment and final disposal compatible to the enviroment concurs to avoid possible negative effects on the enviroment and health and favours the reusing and / or recycling of the parts making the apparatus.

The abusive disposal of such products done by users is fined according to the present legislation.

Contents

Safety Instructions

Please read the following safety instructions carefully. Not following them may be dangerous and/or illegal. Please read carefully the user manual for further details.

SWITCHING ON IN SAFE ENVIRONMENTS
Do not switch the device on when prohibited or whenever it could cause any interference or danger.

ROAD SAFETY
Obey all local laws. Always keep your hands free to operate the vehicle while driving. Your first consideration while driving should be road safety.

INTERFERENCE
All wireless devices may be susceptible to interference, which could affect the performance of other appliances (TV, radio,...)

SWITCH OFF IN HOSPITALS
Follow any restrictions. Switch the device off in hospitals or near medical equipment (hearing aid equipment, pacemaker, ...) the device could cause interference. Always keep a distance of 20 cm between pacemaker and device.

SWITCH OFF IN AIRCRAFT
Follow any restrictions. Wireless and digital devices can cause interference with aircraft equipment.

SWITCH OFF WHEN REFUELLING
Do not use the device at a refuelling point. Switch-off when near petrol stations or fuel depots and chemical plants. The device could interfere with the correct functioning of the electronic equipment.

SWITCH OFF NEAR BLASTING
Follow any restrictions. Do not use the device where blasting is in progress.

USE THE DEVICE SENSIBLY
Do not use the device for any uses other than those it has been built for. Keep to the instructions as explained in the product manual.

QUALIFIED SERVICE
Only qualified personnel may install or repair this product.

ACCESSORIES AND BATTERIES
Use only approved accessories and batteries. Do not use incompatible products. The use of nonstandard products can cause damage to device and/or people.

BATTERY DISPOSAL
The batteries must be disposed according to the appropriate modes. The consumer must duly hand in worn out batteries, either at the appropriate collection points for the general public, in his own town, or wherever batteries of the same kind are sold (compulsory warning according to law on the disposal of batteries).

AVOID GETTING THE DEVICE WET
The device is not water-resistant, keep it dry. Contact with water or any other liquid could cause serious damage to the device.

Please handle the tracker and its relevant accessories with care. Read the following instructions carefully.

Environment

Always switch off the device in areas where it is prohibited, or whenever it could cause interference or danger. Always observe the specific local rules and standards. Use the device in its normal operating position only. The device complies with the laws for exposure to radio-frequencies when used in the normal position or when positioned at least 2.2 cm (7/8 inches) away from the body. In the event that a device holder, a belt clip or some other kind of support, is used, it is necessary that such object does not contain metallic parts and that it is positioned from the body at a previously gauged distance. Some parts of the device are magnetic. Pay attention with nearing credit cards or other magnetic memorization supports: the saved information could be erased.

Recycling the Product and its Relevant Accessories

Do not recycle the device or its electronic accessories, like battery chargers, with household waste. Some countries provide recycling systems. For further information, please contact the local authorities.

Medical Appliances

Always switch off the device whenever in hospitals and in health care structures. Any medical appliances could be sensitive to radio-frequency signals. Consult a doctor or the manufacturer of the medical appliances to find out if an they are adequately shielded from radio-frequency signals and to get more details.

Pacemaker

A minimum distance of 15.3 cm (6 inches) between the device and a pacemaker is recommended in order to avoid interference with the medical appliance.
In the event of pacemaker wearers, please observe the following precautions:

- always keep the device more than 15.3 cm (6 inches) away from the pacemaker
- never keep the device in close contact with the body (e.g. in a pocket)
- always keep the device against the ear on the opposite side of the pacemaker

In the event of suspected interference with the pacemaker, switch off and remove the device immediately.

Hearing Aids

The device could interfere with certain hearing aids. If this should occur, please contact your retailer.

Vehicles

Electronic systems which have been incorrectly installed or inadequately shielded in motor vehicles (e.g. electronic fuel injection systems, electronic anti-skid braking systems, electronic speed control systems, air bag systems) can be affected by the interference from radio frequency signals. For further information, refer to the vehicle manufacturer. Only qualified personnel should service the device, or install the device in a vehicle.
Faulty installation or service may be dangerous and may invalidate any warranty that may apply to the device.
Do not place objects, including installed or portable wireless equipment, in the area over the air bag or in the air bag deployment area. If the air bag inflates, people could be seriously injured.
Using your device while flying in an aircraft is prohibited. Switch off your device before boarding the aircraft.

Potentially Explosive Environments

Switch off your device in any area with a potentially explosive atmosphere, (e.g. where you would be normally advised to turn-off your vehicle engine) and obey all signs and instructions in that area. Switch off the device near refuelling points and at service stations.

General Information

This chapter contains general information on the tracker and its relevant accessories.

WARNING: The GPS receiver and the GSM device work at higher radio frequencies which can be stopped by enclosures containing metal and plastic parts. It is suggested to keep the tracker under light clothes, as external as possible.
Examples of shielding materials: kevlar, carbon fibre, some polyurethanic and polyamidic resins especially if black, etc.
Examples of materials which cannot influence the radio waves: ABS, ABS+PC, policarbonate, etc.

Information on the Tracker

This tracker is approved for use on the EGSM 850/900/1800/1900 MHz network. For further information relevant to the networks, please ask your network service provider.

WARNING: During tracker use, all laws must be obeyed, including the privacy and legitimate rights of the others.

WARNING: To use all the tracker functions, except for *Power Save Mode*, the tracker must be kept switched on.

WARNING: When the tracker is connected to USB port, it is not possible to receive or send SMS messages.

The tracker is a portable device able to transmit its geographical location to a mobile phone or PC in real-time. Moreover, the detected data can be recorded for further analysis.

The tracker is available in two different version:
- **LCD**: GPS tracker with display, phone and 2MB data memory.
- **BOX**: GPS tracker without display, without vocal communication and 512kB data memory.

Both trackers can be offered combined in the **KIT** version, particularly indicated for the use of *Finder* function, useful for real-time locating.

This User Manual describes the tracker in the BOX version.

Thanks to the latest generation SiRFstarIII GPS receiver, the tracker can locate the exact coordinates of its position and send the data to:
- a mobile phone, by means of an SMS message
- a PC, by means of an analog/GSM modem

This data (latitude, longitude, altitude, information on speed, date and time) can be sent:
- at a continuously programmed rate
- when the tracker leaves a pre-established area
- in case of an emergency, by means of an SOS message

The tracker have 512 kB of non-volatile memory. The saved data (location coordinates, events, ...) can be transferred to a PC and analysed by means of the provided software.

The tracker can be updated or have more functions added to it by means of an USB cable connected to a PC at any given time (refer to the user manual of the provided software).

The tracker has two basic functions:
- locating and transmitting its actual position
- sending an SOS message in case of an emergency

The tracker can be used as a system for:

- locating elderly people, children, or anyone in difficulty, or with health problems or cognitive disorders, etc.
- locating, during outdoor individual sports activities (e.g. mountaineering, trekking, parachuting,...)
- locating and finding lost pets
- locating groups of people (e.g. park guards, local police forces, emergency teams,...)
- locating small boats
- GPS anti-theft system for vehicles, motorcycles, goods,...
- route recording

Front view

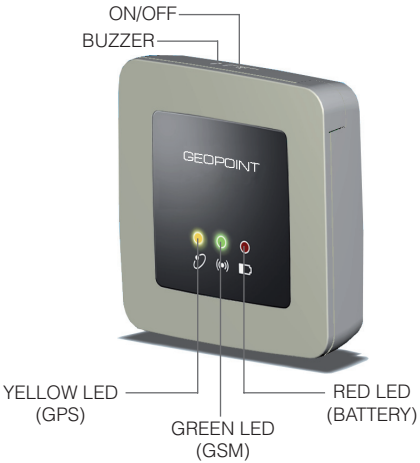
Features:

- ON/OFF button
- BUZZER for acoustic warning
- yellow LED for GPS signal status
- green LED for GSM network status
- red LED for battery status

Side and back view

Features:

- SOS key
- connector for USB cable
- power supply connector (DC IN)


ON/OFF
BUZZER
GEOPOINT
YELLOW LED
(GPS)
GREEN LED
(GSM)
RED LED
(BATTERY)


SOS KEY
SOS
USB
DC IN

Package Contents

Available accessories:

- No. 1 USB cable
- No. 1 (2 in case of KIT) European battery charger - *American battery charger available on request*
- No. 1 (2 in case of KIT) Li-ion battery
- No. 1 CD ROM for MyTrack software installation, for tracker management and personal tracking
- No. 1 (2 in case of KIT) User Guide of the tracker

Use only accessories, batteries and battery chargers approved by the Manufacturer. The manufacturing company is not liable for any damage to the tracker due to the use of accessories different from those expressly indicated.

WARNING: When disconnecting any cable from the tracker, firmly hold and pull on the plug, not on the cable.

Optional Accessories

The optional and/or additional accessories, available on request, are:

- Car charger
- Li-ion battery
- Map software

Network Services

In order to use some tracker functions, such as sending and/or receiving SMS messages, data communication, GPRS, etc., it is necessary to get access through the network service provider.

GSM / GPRS Network

The GSM network (Global System for Mobile Communications) is a data transmission system available from the network service provider. For further information about availability, services and relevant costs of SIM cards, please contact the network provider.

The GPRS network (General Packet Radio Services) is a high speed data transmission system. If available, this system allows the continuous connection to the network. The supply mode of the GPRS services can change according to the network provider.

In the event that the network service coverage is missing, some tracker functions may not be available.

After having carried out all settings, the GPRS communication can be enabled:

- automatically, if the rate for cyclic GPRS connection has been set.
- manually, sending the proper SMS command to the tracker by means of a GSM device (e.g. a mobile phone). The tracker will send a reply message and start GPRS connection with the provided software.

For the manual connection, the provided software can accept the connection automatically if the *Autoanswer* function was enabled, if not, the provided software will display a confirmation message to open the communication channel.
For the automatic cyclic connection, the provided software will accept and close automatically the connection.

To communicate with the tracker through a PC in GPRS network, check if a firewall is installed, and allow the access to the port which will be used for the communication. This procedure must be carried out only by people which have the proper technical features.
If Windows Firewall is enabled, during the communication GPRS access the following window is displayed.

Keep Blocking	The access to the port is stopped. It is not allowed to communicate in GPRS network.
Unblock	The access to the port is always allowed. It is possible to communicate in GPRS network.
Ask Me Later	The access to the port is temporary allowed. It is possible to communicate in GPRS network. At the next communication GPRS access, the same window will be displayed.

If external firewall is installed, refer to the network administrator.

GPS System

The GPS (Global Positioning System) is able to detect the user's position in any given point of the Earth's surface and consists in a ground receiver which captures signals from a series of satellites in orbit.
The GPS receiver analyses and calculates the data received from the satellites and pin-points the present location (FIX procedure).

If the GPS receiver reports that a two dimensional satellite FIX is available (2D FIX), it means that the signal is adequate.

If the GPS receiver reports that a three dimensional satellite FIX is available (3D FIX), it means that the signal is optimal.

In some climatic or structural conditions, (when it is foggy, clouded, ... or inside buildings, tunnels, ...) partial or total GPS signal coverage may be missing. In this case, some functions may not be available.

Notwidstanding the Selective Availability (SA) introduced by United States of America for military reasons, the margin of error on the GPS data is only limited but not deleted. The location data can contain inaccuracies caused by external factors as errors in the orbit and in the satellites clock, climatic conditions and multipath effects.

Preliminary Procedures

This chapter contains all the information on the preliminary procedures relevant to the tracker use.

Inserting the SIM Card and Battery

The SIM card allows to receive and transmit data and calls by means of the GSM network. Pay attention when choosing the contract type to make with the SIM card provider, since it could affect the tracker communication functions. For example, in case of:

- a prepaid SIM card, communication between the tracker and the provided software is made exclusively through SMS text or GPRS network.
- a SIM card with subscription, communication between the tracker and the provided software is made through SMS text, GPRS network or also sending/receiving data (only if the data number has been activated by the network provider).

The SIM card is not included in the package. To buy one, please contact the network service provider or specialized retailer.

WARNING: For a proper tracker operation, in case of prepaid SIM card, make sure that the account is not exhausted.

WARNING: If the battery is not inserted within 30 seconds, the date and time settings will be erased.

WARNING: Before inserting the SIM card, check if it is protected by a PIN code. If the PIN code has been activated, disable it by means of a mobile phone.

WARNING: Inserting a SIM card, any SMS message contained in it will be deleted. Therefore, it is advisable to carry out a data back-up before SIM card insertion.

WARNING: After SIM card insertion, any SMS message which will be received, it will be erased.

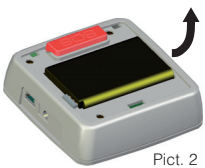
WARNING: Before proceeding with any insertion/removal of the SIM card, switch off the tracker, disconnect the battery charger and/or the USB cable.

To insert/remove the SIM card or the battery, proceed as follows.

1. Remove the back cover from the tracker by pressing down on the small flap and lifting upwards (Pict. 1).

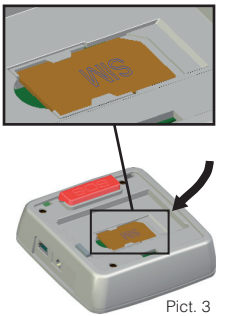
Pict. 1

2. Remove the battery by lifting it out (Pict. 2).



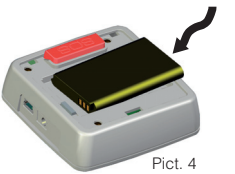
Pict. 2

3. Insert the SIM card by leading it into the appropriate housing; check if it has been inserted correctly, with the golden contact area facing downwards (Pict. 3).



Pict. 3

4. Insert the battery paying attention to coincide the contact area with that of the tracker. Close the tracker by replacing the back cover (Pict. 4).



Pict. 4

WARNING: Insertion/removal of the SIM card must be carried out with extreme care, to avoid damaging the tracker, battery or SIM card.

How to Charge the Battery

Before using the tracker for the first time, the battery must be completely charged.
Before charging, check that the network electrical supply corresponds to that of the battery charger. Do not exceed the network voltage indicated on the battery charger.

To charge the battery:

1. Plug the provided battery charger into the electrical supply socket.
2. Connect the battery charger cable to the appropriate tracker connector.
3. The tracker red LED will switch on and it will be on for all the battery charging process.

WARNING: Use only batteries and battery chargers with the following features:

- Battery: model ABL-6C Li-ion - 3,7V 1000mAh
- Battery charger: model ZD050050EU
  input 100VAC - 240V 50/60Hz 0,15A
  output 5VDC 500mA
- Car charger: model ESC-004
  input 13,6VDC
  output 5VDC 500mA

The manufacturing company is not liable for any damage to the tracker due to the use of accessories different from those expressly indicated.

WARNING: Do not leave the tracker in particularly hot or cold environments during the battery charging. Keep the tracker between -10°C and +40°C environmental temperature.

WARNING: To disconnect the battery charger cable from the tracker, firmly hold and pull on the plug, not on the cable.

Battery Life

The tracker battery life changes according to the environment conditions and its activity. The following table shows the battery life in several conditions.

STATUS	TIME
Standby mode with motion sensor active.	~10 days
Tracking SMS every minute (GPS always on).	~9 hours
Tracking SMS every 5 minutes (GPS with hotstart).	~4 days
Continuous tracking.	~2 hours
Data connection mode, with GPS system continuously active.	~2 hours
Position data recording every minute.	~37 hours
Tracker not in use.	~2 days
Tracker in communication on GSM network.	~4 hours

The data in the table refers to the new battery provided with the tracker, when totally charged. This data is an indication and could be highly influenced both by the GSM signal, because it affects the time required for network connection, and GPS signal, because it affects the time required for position fixing.

NOTE: When the battery is almost discharged, the tracker emits an acoustic warning every minute. When the battery is completely discharged, the tracker automatically switches off.

NOTE: If the battery discharges, no acoustic warning is emitted and the programmed functions (e.g. the tracking SMS sending) will not be available.

Information on the Battery

A new battery reaches maximum performance only after being completely charged and discharged 2 or 3 times. The battery can be charged and discharged several times, but will eventually wear out with use.

A completely charged battery can discharge itself even when left unused. When the tracker loses the performance quality, it is necessary to replace the battery.

Always disconnect the battery charger and the tracker from the electrical supply when not charging. Do not charge the battery in housings other than that of the tracker.

Never shortcircuit the battery. This could even happen accidentally, if a battery comes into contact with a metallic object (coins, pens, paperclips,...) damaging the battery or the object.

The battery life could be noticeably reduced if subjected to extreme temperatures (too cold or too hot). Keep the battery at room temperature between 15°C and 25°C (59°F and 77°F).

Pay attention to damaged batteries. Do not throw batteries in the fire: they could explode. Recycle the batteries according to the local laws. It is absolutely forbidden to throw batteries away with household refuse.

WARNING: Use the batteries only for their intended purpose. Use only the battery and the provided battery charger.

Power On and Off

To switch the tracker on/off, press the ⏻ key situated in the upper part of the device for 2 seconds. At tracker switching on/off, the 3 LEDs will light up together at the same time for 1 second and an acoustic signal will be emitted.

WARNING: Do not switch on the tracker when its use is prohibited or when it may cause interference or danger (refer to the chapter *Safety Instructions*).

NOTE: The GPS receiver is switched on automatically only if the programmed tracker functions require the GPS system use.

LED Indicators

The LED indicators on the device front part shows the tracker main functions status.

Yellow LED - GPS signal status
- OFF ➡ tracker off or GPS receiver switched off
- ON ➡ waiting GPS
- blinks every second ➡ poor signal level (2D FIX)
- blinks every 4 seconds ➡ high signal level (3D FIX)

Green LED - GSM network status
- OFF ➡ tracker off or connected to the USB port
- blinks every second ➡ network search in progress
- blinks every 4 seconds ➡ sufficient signal strength
- 2 blinks every 4 seconds ➡ GSM/GPRS data communication in progress

Red LED - battery status
- OFF ➡ tracker off or battery completely charged
- blinks every 2-3 seconds ➡ battery discharged
- ON ➡ battery charging in progress

NOTE: The 3 LEDs remain continuously ON during tracker firmware update.

Use of the Functions

Tracker Function	Description	Refer to
SOS key	the tracker sends an alarm message	section *SOS Key*
Position Request	the tracker sends an SMS containing its position to the phone number which requested this data	section *Position Request*
Automatic Position Sending	the tracker sends automatically its position by SMS or by GPRS connection	section *Automatic Position Sending*
Position Data Recording	the tracker records its position data to review the track afterwords	section *Position Data and Events Recording*
Geofence	the tracker sends an alarm SMS to the preset phone number everytime it exits or ri-enters in a preset rectangular area	section *Geofence*
Anchor	the tracker sends an alarm SMS to the preset phone number everytime it exits or ri-enters in a preset circular area	section *Anchor*
Power Save Mode	the tracker switches on/off automatically to optimize the battery consumption	section *Power Save Mode*
Alarm SMS	the tracker sends alarm SMS to the preset phone number everytime a status change happens (low battery, memory full, ...)	section *Alarm SMS*

The tracker can work without the SIM card. In this case, all functions operating with GSM/GPRS network will not be available.
If no SIM card has been inserted, only the following functions are available:

- Position data recording
- Power save mode with motion sensor

Furthermore, only by the provided software it is possible to:

- disable all the acustic signals of the tracker (Silent mode)
- select the language for the SMS messages sent by the tracker

SOS Key

By pressing the **SOS** key for at least 2 seconds, for 5 consecutive times every minute, an SMS message is immediately sent to the preset phone numbers (max. 4 phone numbers). This message contains the current data on the location, if the GPS signal has been revealed. If there is no GPS signal coverage, the last position data will be sent. The red **SOS** key can be found on the back of the tracker and is used for alarm purposes only.

Programming
To use this function, it is necessary to set the phone numbers (max. 4 phone numbers) where the SOS messages will be sent.

1) Set the phone numbers ⇨ Using the provided software

SOS SENDING

Every time the **SOS** key is pressed, an acoustic warning signal is emitted when:

- there is no GSM signal
- no SMS center number or no SOS numbers have been set
- the set SMS center number is not correct

NOTE: When there is no GSM signal, the alarm functions may not be available.

Example of the SMS message displayed on the mobile phone, with the detected **current position data**

```
GEO,ID:GLORIA,SOS ALARM,POS:45g37.9480N,008g28.9992E,ALT:0218m,07/04/10,10:09
```

Example of the SMS message displayed on the mobile phone, with the last **position data detected before the GPS signal loss**

```
GEO,ID:GLORIA,SOS ALARM,LAST POS:45g37.9480N,008g28.9992E,ALT:0218m,07/04/10,10:09
```

The SMS message structure of the *SOS* function is described here below:

GEO	Tracker type.
ID:------	Tracker name preset by the user through the provided software.
SOS ALARM	Alarm message.
POS:-----.-----,-----.-----	Latitude and longitude of the geographical position.
ALT:----.-	Altitude in m.
--/--/--,--:--	Event date and time (yy/mm/dd hh:mm).

Position Request

It is possible to ask for the tracker position by means of an SMS command. After receiving the SMS command, the tracker sends a message containing its position data to the phone number which sent the command.

To know the tracker position in real time, send the following SMS command: **rpos**
After the tracker receives the SMS command, it sends an SMS containing the position data.

Programming
To use this function, it is necessary to send to the tracker an SMS command by a mobile phone or by a GSM device and waiting for the reply.

1) Tracker position request in realtime	⇨	Sending an SMS command (rpos)

Automatic Position Sending

The tracker can send its own position at a programmable rate. The automatic position sending can be carried out in two different modes:

- by SMS
- by GPRS connection

CYCLIC POSITION SMS

The tracker can send an SMS message at intervals, containing all the information on its current position. This function is useful for monitoring the tracker motion at a distance by a mobile phone.

Programming
To use this function, it is necessary to set the phone number where the position messages will be sent, set the rate for cyclic position SMS and then enable the function.

1) Set the phone number	⇨	Using the provided software
2) Set the rate for cyclic position SMS	⇨ ⇨	Sending an SMS command (wposc) Using the provided software
3) Enable the cyclic position SMS	⇨ ⇨	Sending an SMS command (wposc) Using the provided software

CYCLIC GPRS CONNECTION

The cyclic GPRS connection allows to connect the tracker automatically at a programmed rate for the continuous position updating. At the programmed rate, the tracker will be connected only for the time needed for sending the position point. This function is very useful if combined with the I-Scout web server as it allows to display the detected positions by every station connected to internet.

Programming
To use this function, it is necessary to set the GPRS communication parameters, and then enable the function setting the rate for cyclic GPRS connection.

1) Set the GPRS parameters ⇨ Sending an SMS command (wgprs)
⇨ Using the provided software

2) Enable the cyclic GPRS connection setting the rate ⇨ Using the provided software

Position Data and Events Recording

The tracker allows to record:
- the detected events automatically without setting the recording
- the position data to review the track afterwords, if the recording was previously set

The tracker can records approx. 14,800 position points and approx. 1,900 events.
When an event occurs, the tracker detects it and start to record in the Event LOG.

The following list shows all the events which can be detected and recorded automatically by the tracker.

- power on/off
- low battery
- receiving a data call
- making a GPRS call
- hanging up a call
- motion on/off
- GSM network available/unavailable
- GPS signal available/unavailable
- entry/exit from Geofence area
- entry/exit from Anchor area
- firmware update
- SOS alarm
- memory erasing
- roaming on/off
- network GSM provider changing if roaming on

Programming

To record position data, it is necessary to set the recording parameters.

1) Set the recording parameters ⇨ Using the provided software

WARNING: If the *Power Save Mode with cyclic position SMS or cyclic GPRS connection* has been enabled, the tracker position will be recorded at each automatic switching ON. The set *Rate* and *Distance* parameters will not be considered.

All position data contained in the tracker memory can be erased.

1) Erase the recorded position data
- ⇨ Sending an SMS command (wem)
- ⇨ Using the provided software

WARNING: The *Erase* function deletes all GPS data contained in the tracker memory. Once deleted, the data is no longer retrievable.

Geofence

The *Geofence* function allows to monitor the tracker entry and exit in a pre-established area.
This is a rectangular area and can be programmed setting the area diagonal coordinates.

Programming
To use this function, it is necessary to set the phone number where the alarm messages will be sent, and then set the two points which defined the area diagonal.

1) Set the phone number
- ⇨ Using the provided software

2) Set the two points which defined the area diagonal
- ⇨ Sending an SMS command (wgf)
- ⇨ Using the provided software

After having set the *Geofence* parameters, the tracker will send an alarm SMS message to the preset phone number each time it enters/exits the pre-established area or each time it is switched on outside the pre-established area.

Example of SMS message displayed on the mobile phone, when the tracker enters the area

```
GEO,ID:GLORIA,GEOFENCE ENTER,POS:45g37.9481N,008g28.9992E,ALT:0218m,07/04/10,10:09
```

Example of the SMS message displayed on the mobile phone, when the tracker exits the area

GEO,ID:GLORIA,GEOFENCE EXIT,POS:45g37.9481N,008g28.9992E,ALT:0218m,07/04/10,10:09

The SMS message structure of the *Geofence* function is described here below:

GEO	Tracker type.
ID:–––––––	Tracker name preset by the user through the provided software.
GEOFENCE ENTER	Alarm message.
POS:–––––.–––––,–––––.–––––	Latitude and longitude of the geographical position.
ALT:––––.–	Altitude in m.
––/––/––,––:––	Event date and time (yy/mm/dd hh:mm).

Anchor

The *Anchor* function allows to monitor within a pre-established circular area the position of a person, an object or an animal. When the tracker detects the exiting from the pre-established area or the ri-entering, it sends an alarm SMS containing its position data to the preset phone number.

This function is programmable using the complete SMS command (enabling and radius setting) or partially by the provided software.

When the complete SMS command is received by the tracker (e.g. *wanc=1,0500*), the function is enabled and the current tracker position is considered as area central point. If the function is enabled without setting the radius, the previously set coordinates for the central point and the last programmed radius will be considered. If no radius was previously programmed, by default it will be set to 100 m.

Programming
To use this function, it is necessary to set the phone number where the alarm messages will be sent, defined the circle centre and then set the radius.

1) Set the phone number	⇨ Using the provided software
2) Define the circle centre	⇨ Sending the complete SMS command (wanc)
3) Set the radius value	⇨ Sending an SMS command (wanc) ⇨ Using the provided software

After having carried out the entire programming procedure, the tracker must be fitted to the person or animal to be monitored. When the tracker detects the exiting from the pre-established area or the ri-entering, it sends an alarm SMS containing its position data to the preset phone number.

Example of the SMS message displayed on the mobile phone, when the tracker enters the area

```
GEO,ID:GLORIA,ANCHOR ENTER,POS:45g37.9481N,008g28.9992E,ALT:0218m,07/04/10,10:09
```

Example of the SMS message displayed on the mobile phone, when the tracker exits the area

```
GEO,ID:GLORIA,ANCHOR EXIT,POS:45g37.9481N,008g28.9992E,ALT:0218m,07/04/10,10:09
```

The SMS message structure of the *Anchor* function is described here below:

GEO	Tracker type.
ID:––––––	Tracker name preset by the user through the provided software.
ANCHOR ENTER	Alarm message.
POS:–––––.–––––,–––––.–––––	Latitude and longitude of the geographical position.
ALT:––––.–	Altitude in m.
––/––/––,––:––	Event date and time (yy/mm/dd hh:mm).

Power Save Mode

The *Power Save Mode* allows for optimal management of the tracker battery. It is possible to set the tracker automatic switching on/off according to specific use requirements.

NOTE: It is not possible to enable more than one *Power save mode* simultaneously.

NOTE: When the tracker is switched off in *Power save mode*, an SOS message can be sent pressing the relevant red key for at least 2 seconds.

The first mode allows the automatic tracker switching on at motion detection. When no motion is detected for a preset time and there is no data exchange, the tracker will automatically switch off.

The second mode allows the automatic tracker switching on at the cyclic position SMS sending. Before using this mode, enable and set the *Cyclic position SMS* function with SMS rate ⩾ 5 minutes. The tracker will switch off automatically after position SMS sending and after carrying out all the preset operations.
During the automatic switching on, if the tracker is connected by the provided software, the automatic switching off will be carried out after position SMS sending, after carrying out all the preset operations and 2 minutes after tracker disconnection.

The third mode allows the automatic tracker switching on at the cyclic GPRS connection with the provided software or with the I-Scout web server. Before using this mode, enable and set the *Cyclic GPRS connection* function with rate ⩾ 5 minutes. The tracker will switch off automatically after carrying out all the preset operations. If the GPRS connection fails twice, the tracker will switch off automatically.

Programming

To use this function, it is necessary to set the parameters relevant to one power save mode.

1. Motion Mode

1) Set the motion sensor parameters (sensitivity, timeout)	⇨ Using the provided software
2) Enable the power save mode with motion sensor	⇨ Using the provided software

2. Cyclic Position SMS Mode

1) Enable the cyclic position SMS	⇨ Sending an SMS command (wposc) ⇨ Using the provided software
2) Set the phone number	⇨ Using the provided software
3) Set the rate for cyclic position SMS ⩾ 5 minutes	⇨ Sending an SMS command (wposc) ⇨ Using the provided software
4) Enable the power save mode with cyclic position SMS	⇨ Sending an SMS command (wposc) ⇨ Using the provided software

3. Cyclic GPRS Connection Mode

1) Set the GPRS parameters	⇨ Using the provided software
2) Set the rate for cyclic GPRS connection ⩾ 5 minutes	⇨ Using the provided software
3) Enable the power save mode with cyclic GPRS connection	⇨ Using the provided software

Alarm SMS

The *Alarm SMS* are alarm messages sent (if the function was enabled) to a phone number every time that:

- the tracker battery is almost discharged
- the tracker memory is full
- the GPRS network is available
- the GPRS network is not available
- the GPS signal has been lost
- the GPS signal has been restored
- the tracker motion is revealed
- the tracker motion stops

Programming

To use this function, it is necessary to select the desired event item and set the phone number where the Alarm SMS will be sent.

1) Select the event item ⇨ Using the provided software

2) Set the phone number ⇨ Using the provided software

Example of the SMS message displayed on the mobile phone, when the tracker battery is almost discharged

```
GEO,ID:GLORIA,LOW BATTERY,07/04/10,10:09
```

Example of the SMS message displayed on the mobile phone,when the tracker memory is full

```
GEO,ID:GLORIA,MEMORY FULL,07/04/10,10:09
```

Example of the SMS message displayed on the mobile phone, when the GPRS network is available

GEO,ID:GLORIA,GPRS OK,07/04/10,10:09

Example of the SMS message displayed on the mobile phone, when the GPRS network is not available

GEO,ID:GLORIA,GPRS OFF,07/04/10,10:09

Example of the SMS message displayed on the mobile phone, when there is GPS signal

GEO,ID:GLORIA,GPS FIX OK,07/04/10,10:09

Example of the SMS message displayed on the mobile phone, when the GPS signal has been lost

GEO,ID:GLORIA,NO GPS FIX,07/04/10,10:09

Example of the SMS message displayed on the mobile phone, when a tracker motion is revealed

GEO,ID:GLORIA,MOTION ON,07/04/10,10:09

Example of the SMS message displayed on the mobile phone, when a tracker motion stops

GEO,ID:GLORIA,MOTION OFF,07/04/10,10:09

The SMS message structure of the *Alarm SMS* function is described here below:

GEO	Tracker type.
ID:–––––––	Tracker name preset by the user through the provided software.
LOW BATTERY	Alarm message.
––/––/–– ––:––	Event date and time (yy/mm/dd hh:mm).

Reading and Writing SMS Commands

The SMS commands allows to set or read some tracker settings. These messages can be sent by a mobile phone or by a GSM device able to send/receive SMS (i.e. a GSM modem).
When the tracker is switched on and there is GSM signal, it can receive any SMS command. If the tracker receives a correct SMS command, an answer is sent to the SMS command sender.
If the message contains invalid characters, the tracker will not reply. If it contains invalid values, the tracker will reply a message containing "**COMMAND ERROR**". All commands start with the letter "**r**" (reading) or "**w**" (writing).

NOTE: Ensure that the SMS commands are written exactly as shown in the table. Any change (space, capital letter, small letter,...) could affect the command recognition.

NOTE: Before sending a new command, wait for the reply of the already requested one.

NOTE: Before enabling the cyclic position SMS sending (wposc), ensure that the SMS phone number has been programmed.

Reading Commands

Command	Meaning and Values	Example
rpos	Read instantaneous GPS position data. The tracker can reply in 3 different ways: A) POS: <position data> = GPS position in real time. B) LAST POS: <position data> = no GPS signal. The reply message contains the last detected GPS data. C) POS: NO GPS DATA = from the tracker switching on, the GPS signal has not been detected. NOTE: the date and time refer to: • SMS sending, in case of Reply A • last detected GPS data, in case of Reply B	Command: ***rpos*** Reply A: ***POS:41g37.8283N,012g28.8191E, ALT:0262m,DIR:023g,SPEED:0050km/h, SAT:09,07/05/26,15:56*** Reply B: ***LAST POS:45g37.8283N, 008g28.8191E,ALT:0262m, DIR:023g,SPEED:0050km/h, SAT:09,07/05/26,15:56*** Reply C: ***POS: NO GPS DATA*** *Description:* *45g37.8283N Lat. in degree, min.* *008g28.8191E Long. in degree, min.* *0262m Altitude in m* *023g Direction in degree* *0050km/h Speed in km/h* *09 Satellites number* *07/05/26 Date (yymmdd)* *15:56 Time (hhmm)*

Command	Meaning and Values	Example
rposc	Read cyclic position SMS setup and power save mode status. [status: 0=disabled, 1=enabled] [rate: 01÷99 minutes] [power save mode: 0=disabled, 1=enabled]	Command: ***rposc*** Reply: ***rposc=1,01,0*** *Description:* *1=enabled cyclic position SMS* *01=1 minute rate* *0=disabled power save mode*
rms	Read the accelerometer setup values. [sensitivity: 00=disabled sensor, 01=maximum, 10=minimum] [timeout: 01÷99 minutes]	Command: ***rms*** Reply: ***rms=02,10*** *Description:* *02=sensitivity level 2* *10=10 minutes timeout*
rgf	Read the Geofence setup. [status: 0=disabled, 1=enabled] [LAT1,LONG1,LAT2,LONG2=latitude and longitude of the 2 points which define the Geofence area]	Command: ***rgf*** Reply: ***rgf=1,45g37.7981N,008g28.8012E, 41g37.8971N,012g28.8012E*** *Description:* *1=enabled* *45g37.7981N,008g28.8012E=latitude and longitude of the first point* *41g37.8971N,012g28.8012E=latitude and longitude of the second point*
ranc	Read the Anchor setup. [status: 0=disabled, 1=enabled] [radius: 0050, 0100, 0200, 0300, 0500, 0700, 1000, 1500, 2000, 3000, 4000 m]	Command: ***ranc*** Reply: ***ranc=1,0100*** *Description:* *1=enabled* *0100=radius at 100 m*

Writing Commands

Command	Meaning and Values	Example
wposc	Set the cyclic position SMS in text format and the relevant power save mode. [enabling: 0=disable, 1=enable] [rate: 01÷99 minutes] [power save mode: 0=disable, 1=enable] NOTE: the power save mode works only with SMS rate ⩾ 5 minutes. Never set like this: wposc=0,xx,1 NOTE: to enable or disable only the cyclic position SMS, send the wposc command with the first field only. In this case, the previously set rate is considered.	Case A Command: ***wposc=1,01,0*** Reply: ***wposc=1,01,0 OK*** *Description:* *1=enables the cyclic position SMS* *01=1 minute rate* *0=disables the power save mode* Case B Command: ***wposc=1*** Reply: ***wposc=1 OK*** *Description:* *1=enables the cyclic position SMS with the previous set rate*
wms	Set the accelerometer values. [sensitivity: 00=disables sensor, 01=maximum, 10=minimum] [timeout: 01÷99 minutes]	Command: ***wms=02,10*** Reply: ***wms=02,10 OK*** *Description:* *02=sensitivity level 2* *10=10 minutes timeout*
wem	Erase all position data recorded in the memory.	Command: ***wem*** Reply: ***wem OK***

Command	Meaning and Values	Example
wgf	Set the Geofence. [enabling: 0=disable, 1=enable] [LAT1,LONG1,LAT2,LONG2=latitude and longitude for the 2 points defining the Geofence area] NOTE: to enable or disable the Geofence function without setting the area, send the wgf command with the first field only. In this case, the previously set area is considered.	Case A Command: ***wgf=1,45g37.7980N,008g28.8012E, 45g37.8970N,008g28.8012E*** Reply: ***wgf=1,45g37.7980N,008g28.8012E, 45g37.8970N,008g28.8012E OK*** *Description:* *1=enable* *45g37.7981N,008g28.8012E=latitude and longitude of the first point* *41g37.8971N,012g28.8012E=latitude and longitude of the second point* Case B Command: ***wgf=1*** Reply: ***wgf=1 OK*** *Description:* *1=enables the function considering the previous defined area*

Command	Meaning and Values	Example
wanc	Set the Anchor. [enabling: 0=disable, 1=enable] [radius: 0050, 0100, 0200, 0300, 0500, 0700, 1000, 1500, 2000, 3000, 4000 m; default radius: 0100] NOTE: to set the tracker current position as area center point, send the complete wanc command, containing both enabling and radius fields (e.g. wanc=1,0100). NOTE: to enable or disable the Anchor function without setting the radius, send the wanc command with the first field only. In this case, the default radius or the previously set radius is considered.	Case A Command: ***wanc=1,0100*** Reply: ***wanc=1,0100 OK*** *Description:* *1=enables* *0100=radius at 100 m* Case B Command: ***wanc=1,0100*** Reply: ***NO VALID CENTER POS*** *Description:* *1=enables* *0100=radius at 100 m* *NO VALID CENTER POS=if the center point cannot be detected* Case C Command: ***wanc=1*** Reply: ***wanc=1 OK*** *Description:* *1=enables the function considering the default radius or the previously set radius*

Command	Meaning and Values	Example
wgprs	Set the GPRS parameters and start the continuous GPRS connection. [setup: 0=set the GPRS parameters without starting the connection, 1=connect with the new parameters (IP, PORT), 2=connect with the parameters previously preset] [parameters: IP=host IP address, PORT=TCP port] NOTE: the IP and PORT parameters should be written between commas. NOTE: if there is no GPRS connection, the tracker sends an error SMS containing “GPRS ERROR”.	Case A Command: ***wgprs=0,”213.86.89.11”,”9500”*** Reply: ***wgprs=0,”213.86.89.11”,”9500” OK*** *Description:* *0=set GPRS parameters without starting the connection* *213.86.89.11=host IP address (example)* *9500=TCP port* Case B Command: ***wgprs=1,”213.86.89.11”,”9500”*** Reply: ***wgprs=1,”213.86.89.11”,”9500” OK*** *Description:* *1=GPRS connection with new parameters* *213.86.89.11=host IP address (example)* *9500=TCP port* Case C Command: ***wgprs=2*** Reply: ***wgprs=2 OK*** Case D Reply: ***NO GPRS COVERAGE*** *Description:* *NO GPRS COVERAGE=if GPRS signal is missing*

Troubleshooting

In this chapter, the answers to the most frequently asked questions.

Problem	Possible causes	Solutions
The tracker doesn't switch on.	Key pressed too quickly or too lightly ⏻.	Press the key down ⏻ for 2 sec.
	Discharged battery.	Charge the battery.
	Dirty battery terminals.	Clean the terminals.
	Battery not working.	Replace the battery.
Charging error.	Room temperature too high or low.	Charge at a room temperature suitable for the tracker.
	Dirty battery terminals.	Clean the terminals.
	Absence of power supply.	Use another socket and check the power supply.
	Wrong battery charger.	Use approved accessories only.
	Battery not working.	Replace the battery.
SIM card error.	SIM card inserted incorrectly.	Check if the SIM card is inserted correctly.
	Dirty SIM card terminals.	Clean the terminals with a dry and non abrasive cloth.
	SIM card with wrong voltage.	Use SIM card with 3V only.
	SIM card damaged.	Replace the SIM card through specialized retailers.

Problem	Possible causes	Solutions
Absence of network service.	Weak or no signal.	Move to an area with signal coverage.
	SIM card not valid.	Contact network service provider.
	Network too busy.	Try again later.
Impossible to make a call.	Run out of credit.	Top up credit.
Impossible to send an SMS.	Run out of credit.	Top up credit.
	The SMS Center number is incorrect.	Set the SMS Center number on the SIM card by means of a mobile phone.
	The receiver does not have a compatible phone.	Check the phone compatibility.

Maintenance

The tracker and relevant accessories must be handled with care. Read the following instructions carefully.

- Clean the tracker with a soft cloth, avoiding the use of corosive chemical products, solvents or aggressive detergents.
- Do not paint the tracker.
- Do not swallow the accessories or small components of the tracker.
- Avoid blows to the tracker which could internally damage the product.
- Do not open the tracker in any way differently from the way indicated in the manual.
- Do not wet the tracker. Humidity, condensation, rain or any other liquids containing mineral substances could damage the electronic circuits. In the event of contact with liquids, remove the battery and leave the tracker to dry.
- Do not use or leave the tracker in particularly hot environments. High temperatures could damage the electronic circuits, the battery and the plastic parts of the tracker.
- Do not use or leave the tracker in particularly cold environments. Low temperatures could cause damage to the electronic circuit boards of the tracker.
- Do not use or leave the tracker in particularly dirty or dusty environments, the tracker could get damaged.

Manufacturer's Limited Warranty

This warranty does not limit the user's (statutory) rights under applicable national laws relating to the sale of consumer products.
During the warranty period, the Manufacturer or Manufacturer authorized service company will in a commercially reasonable time remedy defects in materials, design and workmanship free of charge by repairing.
The Manufacturer will, in accordance with this Limited Warranty (unless otherwise required by law), remedy defects by repair or, should the Manufacturer in its discretion deem it necessary, replace the Product.

This Limited Warranty is only valid and enforceable in the country where the user has purchased the Product provided that the same Product has been intended for sale in that country by the Manufacturer. However, if the user has purchased the Product in a member state of the European Union, Iceland, Norway, Switzerland or Turkey and such Product was originally intended by the Manufacturer for sale in one of these countries, this Limited Warranty is valid and enforceable in all of these above listed countries. Some limitations to the warranty service may apply because of country specific elements in the Products.

Warranty Period

The warranty period starts at the time of Product's original purchase by the first end-user. The Product may consist of several different parts and different parts may be covered by a different warranty period. The different Warranty Periods are:

- 24 months for the device
- 6 months for the following consumable parts and accessories: battery, chargers
- 90 days for the media on which any software is provided, (e.g. CD ROM, DVD,...)

As far as national laws permit, the warranty period will not be extended or renewed or otherwise affected due to subsequent resale, repair or replacement of the Product authorized by the Manufacturer.

How to get Warranty Service

In the event of a Product (or accessories) defect, please return it to a service company authorized by the Manufacturer or to the Manufacturer himself.
Any claim of the affected Product (or accessory) is subject to notifying, either a service company authorized by the Manufacturer or the Manufacturer, of the alleged defect within a reasonable time of it having come to attention and in any event no later than before the expiry of the warranty period.

To make use of this warranty, in the event of the affected Product (or accessory), it is necessary to return it to the service centre authorized by the Manufacturer or to the Manufacturer:

- the affected Product (or accessory)
- the original proof of purchase, which clearly indicates the name and address of the seller, the date and place of purchase
- the warranty certificate duly filled-in and carrying the retailer's signature and stamp.

What the Warranty does not Cover

This Limited warranty does not cover the user manuals or any third party software, settings, content, data or links, whether included or downloaded in the Product, whether included during instalment, assembly, shipping or at any other time in the delivery chain or otherwise and in any way acquired by the user. The Manufacturer does not warrant that any of its software: will work in combination, as to customer requirements, with any hardware or software provided by a third party and that the operation of any software will be uninterrupted or error free or that any defects in the software are correctable or will be corrected.

This Limited Warranty does not cover:

- normal wear and tear of the Product (including, without limitation,wear and tear of batteries or displays)
- defects caused by rough handling (including, without limitation, defects caused by sharp items, by bending, compressing or dropping, etc.)
- defects or damage caused by misuse of the Product, including use that is contrary to the instructions provided by the Manufacturer (e.g. as set out in the Product's user guide)
- defects caused by other factors/acts beyond the reasonable control of the Manufacturer.

This Limited Warranty does not cover defects or damage caused to the Product by misuse with, or connection to, any product, accessory, software and/or services not produced or supplied by the Manufacturer or by use of the Product for any other other use than for intended use of the Product.
Defects can be caused by viruses and/or from a third party's unauthorised access to services, other accounts, computer systems or networks. This unauthorised access can take place through hacking, password mining or through a variety of other means. This Limited Warranty does not cover defects caused by the fact that the battery has been short-circuited or by the fact that the seals of the battery enclosure or the cells are broken or show evidence of tampering or by the fact that the battery has been used in equipment other than those for which it has been specified.

This Limited Warranty is not enforceable if the Product has been opened, modified or repaired by anyone other than a service centre authorized by the Manufacturer, if it is repaired using unauthorised spare parts or, if the Product's serial number, the mobile accessory date code or the IMEI number has been removed, erased, defaced, altered or are illegible in any way and this shall be determined in the sole discretion of the Manufacturer.

This Limited Warranty is not enforceable if the Product has been exposed to moisture, to dampness or to extreme thermal or environmental conditions or to rapid changes in such conditions, to corrosion, to oxidation, to spillage of food or liquid or to influence from chemical products.

Other Important Notices

A third party, independent operator provides the SIM card and and/or other network or system on which the Product operates.
Therefore, the manufacturer will not accept responsibility under this warranty for the operation, availability, coverage, device services or other network or system. Before a service company authorized by the Manufacturer or Manufacturer himself can repair or replace the Product the operator may need to unlock any SIM-lock or other lock that may have been added to lock the Product to a specific network or operator. In such situations kindly contact first your operator to unlock the Product. Please remember to make back-up copies or keep written records of all important content and data stored in your Product, because content and data may be lost during repair or replacement of the Product.

All replaced parts of the Product or accessories shall automatically become the property of the Manufacturer.
If the Product is found to be not covered by the terms and conditions of this Limited Warranty, the Manufacturer and its authorized service companies reserve the right to charge a handling fee for repairs/servicing. When repairing or replacing the Product, the Manufacturer may use products or parts that are new, equivalent to new or re-conditioned.

The Product may contain country specific elements/components/settings/software. If the Product has been re-exported from its original destination country to another country, the Product may contain specific elements/components/settings/software that cannot be considered a defect under this Limited Warranty.

In the event of Product repair, the Manufacturer and/or authorized service companies will restore the country specific settings where the Product was destinated for sale and will in no way be liable for the loss of any changes of such settings carried out by the use, which in the same way cannot be considered a defect under this Limited Warranty.

Limitation of the Manufacturer's Liability

This Limited Warranty is your sole and exclusive remedy against the Manufacturer and the Manufacturer's sole and exclusive liability in respect of defects in the Product. This Limited Warranty replaces all other warranties and liabilities of the Manufacturer, whether oral, written, (non-mandatory) statutory, contractual, in tort or otherwise, (including, without limitation, and where permitted by applicable law, any implied conditions, warranties or other terms as to satisfactory quality or fitness for purpose).
However, this Limited Warranty shall neither exclude nor limit:

- any legal rights of the user under the applicable national laws
- any rights against the seller of the Product.

To the extent permitted by applicable law, the Manufacturer does not assume any liability for loss of or damage to or corruption of data, for any loss of profit, loss of use of Products or function, loss of business, loss of contracts, loss of revenues or loss of anticipated savings, increased costs or expenses or for any indirect loss or damage, consequential loss or damage or special loss or damage.

To the extent permitted by applicable law, the Manufacturer´s liability shall be limited to the purchase value of the Product. The above limitations shall not apply in case of gross negligence or intentional misconduct of the Manufacturer or in case of death or personal injury resulting from the Manufacturer´s proven negligence.

NOTE! Your Product is a sophisticated electronic device. The Manufacturer strongly encourages the user to carefully observe the user manual and instructions provided with and for the Product. Please also note that the Product might contain high precision displays, which could get scratched or otherwise damaged, if not handled carefully.

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