



BT-359 GPS User's Guide

Bluetooth GPS Receiver





DOCUMENT REVISIONS

REV NO.	DATE	DESCRIPTION	APPROVED
1.0	06-15-2006	Initial document	BRF
1.1	07-21-2006	Conversion to USG text format	AAK

© 2006 Globalsat Technology Corporation/USGlobalsat, Inc. All rights reserved. The Globalsat logo is a trademark of Globalsat Corporation. Windows is a register trademark of Microsoft Corporation. Acrobat is a registered trademark of Adobe Systems Incorporated. Mac is a registered trademark of the Apple Corporation. All other trademarks or registered trademarks are acknowledged as the exclusive property of their respective owners.

All rights reserved. No part of this manual may be reproduced, transmitted, copied, or stored in any storage medium, for any purpose, without prior written consent from Globalsat Technology Corporation or USGlobalsat, Inc. Globalsat/USGlobalsat hereby grants the right to download one (1) copy of this manual onto a hard drive for personal use. This manual is copyrighted and may contain proprietary information that is subject to change without notice.

Table of Contents

PACKAGE CONTENTS.....	3
SYSTEM REQUIREMENTS	3
WELCOME	3
1. GETTING STARTED.....	4
2. THE BT-359.....	4
3. CHANGING THE BATTERY	5
4. GPS FUNCTIONS	5
5. INITIALIZING YOUR GPS RECEIVER.....	7
6. USING / TESTING YOUR GPS RECEIVER (WIN / PPC only)	7
7. FAQ's	9
8. CONTACT INFORMATION	10
9. SAFETY AND LEGAL NOTICES	10
10. LIMITED WARRANTY	11
11. BT-359 SPECIFICATIONS	12

PACKAGE CONTENTS

- Bluetooth GPS Receiver
- Driver CD-ROM with User's Guide and test utility for WIN and Mac O/S*
- 12VDC vehicle cigarette lighter
- 110/240 0.2A VAC home/office charger (Euro AC Adapter sold separately #BT338-006A)
- USB charger interface cable

*You can also download Installation Guides from: www.usglobalsat.com



SYSTEM REQUIREMENTS

The Globalsat Bluetooth GPS receivers requires a Bluetooth enabled device that can accept accessory pairing, such as PDA's, Smartphones, laptops or Laptops with added Bluetooth USB dongles. . Also a NMEA compatible navigation or map software for your operating system (O/S). Your 3rd party mapping/navigation software may have its own system requirements, please check with software vendor for details.

A computer with a CD-ROM drive is only required to view the Users Guide, or load the test utility program for wither Windows or Mac operating systems. These files and programs are also available for download directly from our web-site at: <http://www.usglobalsat.com>

WELCOME

Thank you for purchasing a Globalsat Bluetooth GPS receiver! Globalsat GPS receivers allow for real-time street navigation by using your laptop for graphical plotting and positioning of your route. Simply pair the GPS receiver, with your Bluetooth enabled device, install your own personal mapping software, and begin to view your position in real-time in relation to the surrounding streets in your travel area.

You'll find that almost any NMEA compliant mapping/charting software will be compatible with the data from your Globalsat Bluetooth GPS receiver.. Visit our web-site for recommended mapping programs that you can use. http://www.usglobalsat.com/faq_details/Mapchart.asp

1. GETTING STARTED

Globalsat Bluetooth GPS receivers utilize a **Bluetooth** (short distance wireless protocol) and a built-in active antenna for high signal tracking sensitivity. Based on the SiRF Star III Low Power chipset, our GPS receivers support all functions (single sat updates in reduced visibility, superior urban canyon performance, foliage lock for weak signal tracking, etc.). Our Bluetooth GPS receivers are well suited for use with PDA's, Smartphones, tablet PC's and notebook PC's and laptops which are already Bluetooth enable. GPS receivers can be used in a wide variety of applications from in vehicle navigation to and outdoor recreation and commercial applications.

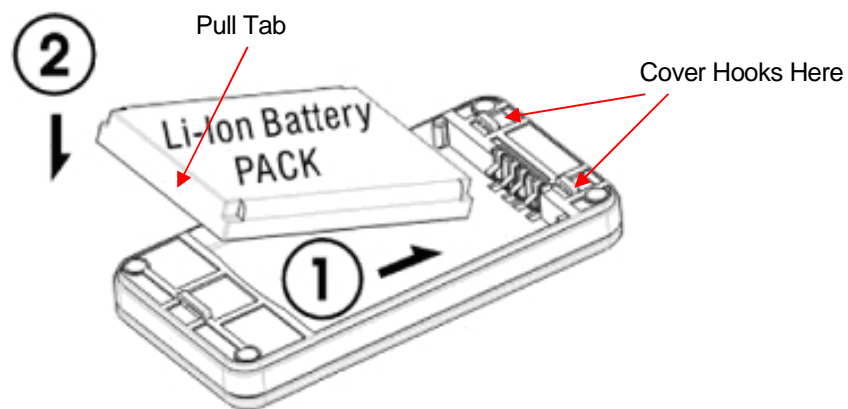
2. THE BT-359



The BT-359W shown above is the model sold in North America while the BT-359S can be found in Europe. There is no difference between the two models with exception to the cosmetic faceplate used. The "W" is a radio wave patter, while the "S" has the appearance of a solar cell. Electronically they are the same device.

3. CHANGING THE BATTERY

1. Slide battery cover lock into the open UNLOCK position and lift up carefully on battery cover from lock end at seam where cover meets the main GPS housing.
2. Use the pull tab to lift out Li-ion battery.
3. Replace battery making sure that the battery contact on the bottom side of battery touch the contacts on the BT-359 within the battery compartment. (Pull tab should at the same end as the battery cover lock)
4. Carefully hook the two catches of the battery cover to the GPS housing and gently close battery cover.
5. Place battery cover lock into the "locked" position.



4. GPS FUNCTIONS

Turning the BT-359 ON / OFF



BT-359's Power Button

Power ON:

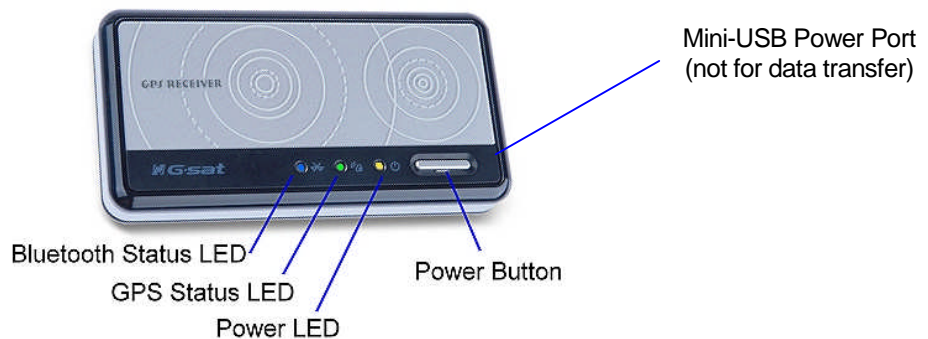
Press the power button for 1 second until the power LED becomes lit.

Power OFF:

Press the power button 1 second until the power LED goes off.

Power Jack

The mini-USB is a power jack that lets allows you to connect to either a DC vehicle charger or an AC charger home/office charger for re-charging the internal Lithium-ion (Li-ion) battery. The voltage input into the BT-359 must be 5VDC (0.16 A) center positive connector. You can also use the USB interface cable to charge directly from your PC's USB port. (The USB interface can only be used for charging the GPS receiver's battery and cannot be used to transfer data.) Upon powering your new BT-359 GPS receiver for the first time it may require as much as 6 hours to fully charge, thereafter charging times may be reduced. The built-in regulator will prevent your battery from being overcharged, however it is always best to unplug the GPS receiver from the charger after charging has completed and not to leave it connected for extended periods of time..

Status LED Functions**Power Status LED (Red/Yellow):**

Red ---- Battery power is critically low. (charge immediately)
Yellow ---- Battery is currently charging .
LED off ---- Battery is charged (partial or full).

GPS Status LED (Green):

Blinking ---- GPS position is fixed (GPS signal is being received)
Steady light ---- GPS position is not fixed (no GPS signal)

Bluetooth Status LED (Blue):

Blinking (Slowly) ---- Not connected to a Bluetooth device.
Blinking (Quickly) ---- Connected to a Bluetooth device.

Auto Shut-Off (Power-Saving Mode)

To conserve battery life, whenever the GPS receiver does not detect a Bluetooth signal for over 10 minutes, the BT-359 will automatically shut off, but only when operating from it's internal Li-ion battery. If connected to an external power source (AC or DC charger), then the BT-359 will remain on.

We strongly suggest that you first test your USG GPS with the included GPS Info utility program to confirm that the GPS receiver is functioning properly on your PC and that you have successfully configured the right COM Port setting. Once this has been done, close the GPS Info program and start your application for COM port configuration.

NOTE: By default, your PC will not allow you to run multiple applications from a single COM port. It is important that you close any previously opened GPS application before switching to another GPS application as the GPS receiver and data will not be found by the new program.

There are special utilities available to split data into multiple COM ports for use by more than one application simultaneously. (see: <http://franson.com/gpsgate/>)

5. INITIALIZING YOUR GPS RECEIVER

Before using your Bluetooth GPS receiver for navigation (especially for the first time), the receiver must obtain a local GPS fix (coordinates) of the current position. To do this, take your device loaded and configured with your mapping software to an open area that has a clear view to the sky. Start your software (or the included GPS Info utility program) and wait for initialization of the GPS to complete. This may take a few minutes depending on various factors such as the distance of the current coordinates from the last time the GPS receiver was activated, GPS signal strength and surrounding terrain (tall trees and buildings can block the satellite signals). Once the RAW GPS data is displayed onto the screen, if applicable for your software, a fix has been initialized (Green LED on the GPS will also start to flash). In some cases initialization can take up to several minutes depending on the conditions mentioned above before complete GPS data will be displayed on the screen.

Coordinates scrolling with zero's means that the port connection is complete, but the satellite data is not being received yet (possibly still initializing or in a bad area for satellite reception).

6. USING / TESTING YOUR GPS RECEIVER (WIN / PPC only)

Once your Bluetooth GPS receiver has been paired with your device and your personal mapping software have been installed and the COM port configured properly, you can begin to use your navigation system. If you don't have a mapping, or navigation software to try out your new GPS receiver, we've included a GPS test utilities called "GPS Info" (GPSInfo.exe) for Windows and Pocket PC devices located in the Win directory and "GPS Utility" (Mac_GPS_Utility_V2.dmg) is located in the .Mac directory of the CD-ROM.

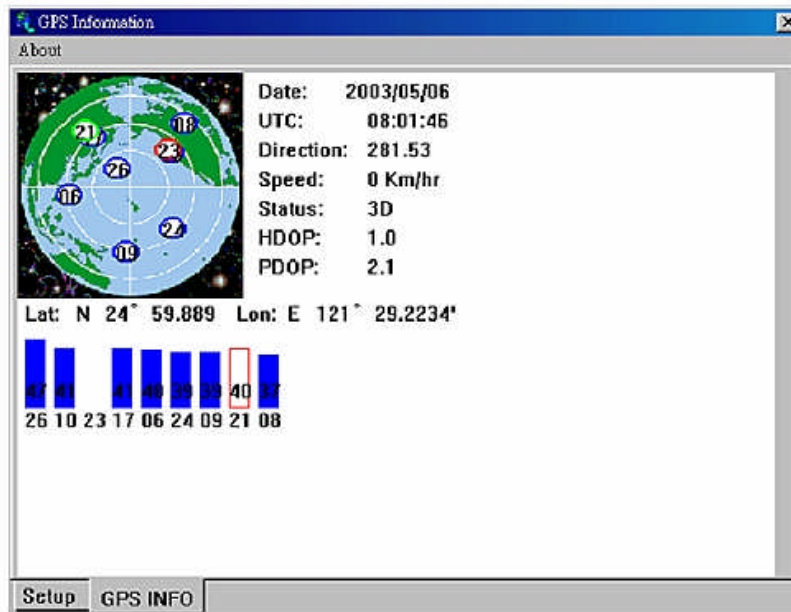
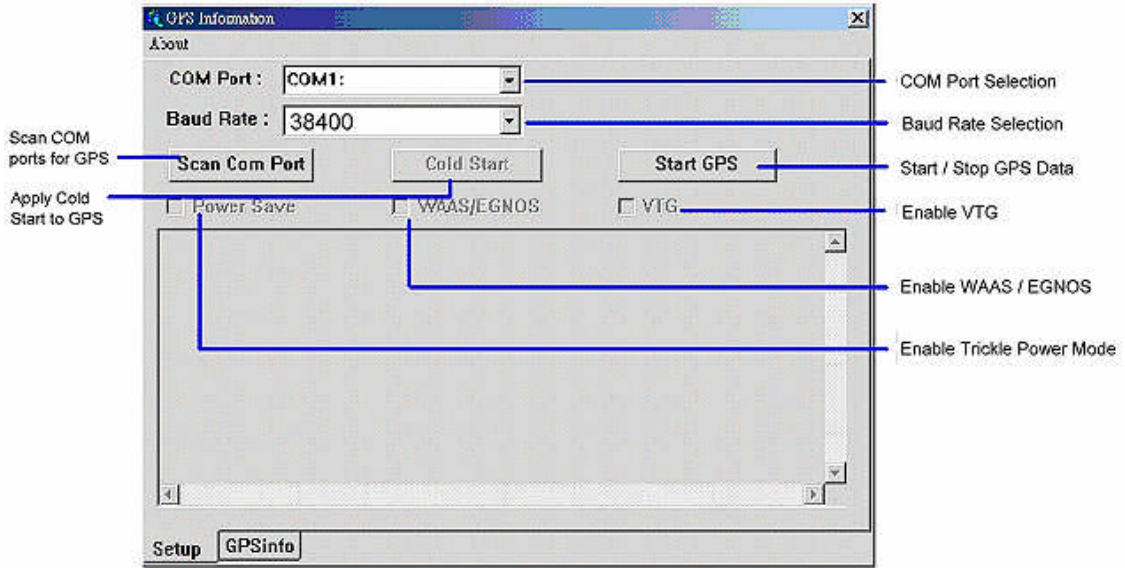
Both utilities can be download from our web-site www.usglobalsat.com

Always select an area in the vehicle where the GPS unit will be secure and not obstruct normal driving, visibility and safety, but still maintaining a "view to the sky" in order to receive satellite data.

WIN and PPC devices:

It is recommended that you first load and test your GPS receiver with the GPSInfo.exe. This process will confirm you have found correct COM port number and have configured it properly.

1. Run [GPSInfo.exe](#) to load the utility.
2. Enter the proper COM port for your GPS device (see COM Port Verification above)
3. Set COM port to Baud rate: 34800
4. If no errors have been made in configuration, there should be GPS data being displayed in the window, which is confirmation that the communication between the GPS device and the "GPSInfo" software is working properly.
5. If there is no GPS data displayed (or data with multiple zeros in them), please exit the software and unplug the GPS receiver from the USB port and reinsert it after 10 seconds to reset the device.



This screen shows the satellites being received (numbers) and their signal strengths.

NOTE: Configuration (or selection) of an assigned COM port for the GPS device from within your mapping or charting software must be completed whenever using a software for the first time.

Mac Users: Mac users need to run the Mac_GPS_Utiliy_V2.dmg located in the .Mac directory of the CD-ROM or download the utility file from our web-site: www.usglobalsat.com/mac

7. FAQ's

What is the difference between the BT-359W and the BT-359S?

There is no difference between these two models with exception to the cosmetic faceplate used. The "W" is a radio wave patten, while the "S" has the appearance of a solar cell. Internally they are the same device.

I am not getting GPS data into my application on my Windows PC.

1. Check your DEVICE MANAGER to confirm the COM Port number assigned to the GPS. Then be sure this is the same COM port number configured in your application.
2. Be sure your Baud rate is configured correctly at:
Baud Rate: 38400
Data bit: 8
Parity: None
Stop Bit: 1
Flow Control: None
3. Configure the GPS Info utility with the correct COM Port and test your GPS receiver first before using it in your application.

Will the GPS work with other Street Mapping software?

Globalsat GPS receivers provides standard NMEA data for mapping software to use and convert to coordinates and should work well with most any NMEA compliant software on the market today.

How accurate is the GPS?

The Globalsat GPS is WAAS/EGNOS capable, and for units sold in North America through authorized resellers, these units are WAAS/EGNOS enabled unless otherwise stated. Accuracy can be between 1-5 meters 2D RMS with WAAS enabled and 10-15 meters 2D RMS WAAS disabled

What is ideal GPS environment?

The GPS requires an open, clear view of the sky. Buildings, covered parking areas, tunnels and dense foliage can cause the GPS receiver to be unable to get a location fix.

If you are parked in a covered parking lot or near a tall building, it is recommended that you drive away until you have a clear view of the sky before using the GPS receiver. You may need to give the GPS a few minutes to find or get a fix its location.

How do I know if the GPS is ON?

If your PC is on and the COM port was configured properly, the GPS receiver is on and receiving the streaming GPS data. This can be verified by opening your mapping software program. In addition, the Globalsat GPS has a built-in LED status indicator that shows the following:

LED OFF: GPS receiver is off (no power).

LED ON (solid): No fix, searching for GPS signals.

LED FLASHING: Position fix established and GPS signals are being received.

Why does the GPS not work near buildings and other tall objects?

The GPS uses satellites in the space to find out where it is. Therefore it needs a clear view of the sky. Tall buildings and other objects that block the receiver's view to the sky make it infeasible to determine your location. Sometimes the satellites are not overhead but near the horizon. In these cases the GPS must have a clear view of the horizon.

Other Comments-

Please allow an adequate amount of time for the GPS receiver's boot-up (TTF) to complete before contacting Technical Support.

8. CONTACT INFORMATION

GlobalSat Technology Corporation (Taiwan)

www.globalsat.com.tw service@globalsat.com.tw

USGlobalSat, Inc.

www.usglobalsat.com sales@globalsat.com (pre-sales GPS product questions only)

Technical Support (North America)

See our DOWNLOADS and FAQ section on our web-site for GPS solutions, driver literature updates.

<http://www.usglobalsat.com/custom.asp?recid=7>

Pre-registration is required before receiving any type of technical support. Support issues submitted via phone, fax or e-mail (any means outside of the recognized "Trouble Ticket" generated from your own USGlobalSat registered account) will not be answered.

Create your account and register your products at: www.usglobalsat.com/support/custadminlogin.asp

9. SAFETY AND LEGAL NOTICES

Please read this section carefully before using the GPS receiver.

Globalsat Technology Corporation / USGlobalSat, Inc. will not accept any responsibility whatsoever for accidents resulting from failure to observe common sense precautions. Your personal judgment, traffic regulations, and common sense must always take precedence over any directions produced by GPS receiver or the mapping software

WARNING: Make sure that the GPS receiver is secure and does not interfere with driving visibility and safety.

It is your responsibility as the vehicle operator to securely place the GPS unit and antenna so that they will not interfere with driving and prevent operations of any safety device (such as the Airbag) in your vehicle. Do not mount the devices in a place where the driver or passengers may receive injury during vehicle operation or collision. For your safety, take care to route all cables away from shifters, pedals, accessory controls and mechanisms.

WARNING: Drive safely and use common sense.

It is your responsibility as the vehicle operator to drive safely, observe all traffic rules and above all use your own personal judgment while driving. If you feel that a route suggested by the navigation software instructs you to perform an unsafe or illegal maneuver, places you in an unsafe situation, or routes you into an area which you consider unsafe, do not follow the instructions.

WARNING: Keep your eyes on the road.

It is your responsibility as the vehicle operator to keep your eyes on the road and be an alert driver at all times, especially when the vehicle is moving. The vehicle's operator should not be distracted by the navigation equipment or software. Should there be a distraction with the ability to drive responsibly, please turn off the device. Should you want to look at the display for a prolonged time, park the car safely, while following all traffic regulations before looking at the display.

WARNING: To reduce the risk of fire or shock hazard, do not expose this product to rain or moisture. Do not remove covers or open housings, there are no user serviceable parts inside. Refer servicing to qualified personnel only.

10. LIMITED WARRANTY

Globalsat/USGlobalsat warrants product hardware against manufacturing defects in material and workmanship under normal use for a period of one (1) year from the original date of purchase (unless the product states otherwise), and only when purchased from a recognized "authorized dealer". Products purchased from any unauthorized source, such as unauthorized e-Bay resellers, will not qualify for free warranty service/support and may require the end-user to pre-pay fees associated with, but not limited to the support, repair, replacement and shipping of the product to and from the service center.

Except as provided herein, Globalsat/USGlobalsat makes no express warranties', including but not limited to any warranties of merchantability or fitness for particular use, or non-infringement. You acknowledge that your use of the product or service is at your sole risk and you agree that the information provided are without warranty of any kind by Globalsat/USGlobalsat.

Under no circumstances, including negligence, will Globalsat/USGlobalsat or any of its affiliates, directors, officers or employees, or any third party be liable for any direct, indirect, incidental, special or consequential damages that results from your use, or your inability to use, or the performance of the product(s) with respect to any liability, loss, or arising out of any breach of this warranty, including, but not limited to any damages resulting from inconvenience, loss of time, data, property, revenue, or profit or any indirect, special incidental or consequential damages. You acknowledge that this limitation applies to all content information or other services available from Globalsat/USGlobalsat, and whether or not Globalsat/USGlobalsat has notice of the possibility of such damages, and whether or not to circumstances giving rise to such damages may have been within the control of Globalsat/USGlobalsat.

Some states do not allow the exclusion of certain warranties, so some of the above exclusions may not apply to you. In those states, liability is limited to the fullest extent allowed by law. By using the product(s), you agree to indemnify Globalsat/USGlobalsat and its parents, subsidiaries, affiliates, officers and employees and hold them harmless from any and all claims and expenses, including reasonable attorney's fees, asserted third party due to, or arising out of your use of the service and the site.

In the event of a product defect during the first 30-days of the warranty period, return product and the sales receipt as proof of purchase date to place of original purchase. Defect discovered after 30-days from date of purchase, you must contact Globalsat/USGlobalsat's Technical support for a Return Merchandise Authorization (RMA) number for return to manufacturer.

Globalsat/USGlobalsat will, at its option, unless otherwise provided by law:

- a.) Correct the defect by product repair without charge for parts and labor;
- b.) Replace the product with one of the same or similar design; or

Refund the purchase price. All replaced parts and products, and products on which a refund is made, become the property of Globalsat/USGlobalsat. New or reconditioned parts may be used in the performance of warranty service. Repaired or replaced parts and products are warranted for the remainder of the original warranty period. You will be charged for repair or replacement of the product made after the expiration of the warranty period.

This warranty does not cover:

- a.) Damage or failure caused by or attributable to acts of God, abuse, accident, misuse, improper or abnormal usage, failure to follow the instructions, improper installation or maintenance, alteration, lighting or other incidence of excess voltage or current;
- b.) Any repairs other than those provided by Globalsat/USGlobalsat;
- c.) Consumables such as fuses or batteries;
- d.) Cosmetic damage;
- e.) Transportation, shipping or insurance costs;
- f.) Costs of product removal, installation, set-up service adjustment or reinstallation.

This warranty gives you specific legal rights, and you may also have other rights, which may vary from state to state. Additional products bundled in this package not manufactured by Globalsat/USGlobalsat will hold separate warranties as expressed by the individual manufacturer of that product(s). Product specifications, functions and features are subject to change without notice.

11. BT-359 SPECIFICATIONS

Electrical Characteristics (Receiver)	
GPS Chipset	SiRF Star III e/LP
Frequency	L1, 1575.42 MHz
C/A Code	1.023 MHz chip rate
Channels	20 all-in-view tracking
Sensitivity	-159 dBm
Accuracy	
Position Horizontal	1~ 5m 2D RMS WAAS enabled 10m 2D RMS WAAS disabled
Velocity	0.1m/sec 95% (SA off),
Time	1 micro-second synchronized to GPS time
WAAS	Enabled for North America products (USGlobalSat, Inc)
Datum	
Datum	WGS-84
Acquisition Rate	
Hot start	1 sec., average (with ephemeris and almanac valid)
Warm start	38 sec., average (with almanac but not ephemeris)
Cold start	42 sec., average (neither almanac nor ephemeris)
Reacquisition	0.1 sec. average (interruption recovery time)
Protocol	
GPS Protocol	Default: NMEA 0183 (Secondary: SiRF binary) SiRF binary >> position, velocity, altitude, status and control
GPS Output Data	NMEA 0183 MEA0183 V2.2 protocol, and supports command: GGA, GSA, GSV, RMC, VTG, GLL v2.2 (VTG and GLL are optional)
GPS transfer rate	Software command setting (Default : 38400,n,8,1 for NMEA)
Connection	Communication with host platform via Bluetooth Serial Port Profile
Dynamic Condition	
Acceleration Limit	Less than 4g
Altitude Limit	18,000 meters (60,000 feet) max.
Velocity Limit	515 meters/sec. (1,000 knots) max.
Jerk Limit	20 m/sec ³
Temperature	
Operating	-4°~ 140°F (-20°~ 60°C)
Storage	-22°~ 176°F (-30°~ 80°C)
Humidity	Up to 95% non-condensing
Power	
Voltage	5V ±5%
Battery capacity	1100mAH
Battery Life	11 hours continuous use
Physical Characteristics	
Dimension	3.23" x 1.61" x 0.53" (82 mm x 41 mm x 13.4 mm)

Due to continuous product improvements, all specifications are subject to change without notice.

FCC NOTICE

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

FCC RF Exposure requirements:

This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.