Bad Elf

GPS Pro

Bluetooth GPS Receiver
Made for iPod touch, iPhone, and iPad

All Day Battery • Data Logger
LCD Display • Splash Resistant

BE-GPS-2200

Bluetooth®

Made for
iPod □iPhone □iPad

Bad Elf, LLC

Contents of This Package

This package contains the following items:

- Bad Elf GPS Pro GPS receiver with Bluetooth® wireless technology
- USB charging cable
- Vehicle Charging Adapter (suitable for 12V cigarette sockets)
- User Guide

Note: Apple device refers to the supported iPod touch, iPhone, or iPad equipped with Bluetooth® wireless technology that you will be using for navigation.

Meet the Bad Elf GPS Pro

Figure 1 - Front View of the GPS Pro

USB Port and Cover   **Lanyard Loop**

Power Button

Bluetooth Button

GPS Button

Figure 2 - Back View of the GPS Pro

Dimensions

The Bad Elf GPS Pro is small and lightweight, but with a rugged, solid feel.   Its dimensions and weight are:

Dimensions: 3.0 x 2.4 x 0.7 inches (76.5 x 61.5 x 17.5 mm)

Weight: 3.2 ounces (90 grams)

Enclosure

The Bad Elf GPS Pro enclosure offers IPX4 water resistance, making it splash proof when used in many common outdoor application environments.

Figure 3 - Side View of the GPS Pro

Backlit LCD Display Interface

The Bad Elf GPS Pro offers the first Apple approved GPS with an informative user interface. Prior GPS devices used simple LEDs to indicate status, leaving the user guessing about status details. The Bad Elf GPS Pro makes it easy for the user to check location details (latitude, longitude, altitude, heading, speed, and universal time) directly on the GPS without requiring connectivity to the iPod touch, iPhone, or iPad. Further information concerning the quality of data and satellite usage is also available directly on the device. Additionally, users may check Bluetooth connection status, battery levels, and data log storage usage at a glance. The display also has a backlight for readability at night.

Buttons

The Bad Elf GPS Pro uses three simple buttons for device control. More extensive capabilities are available through the free, downloadable Bad Elf utility app available through iTunes.

1. **Power Button**
   a. Press and hold this button for 3 seconds to toggle the Bad Elf GPS device ON or OFF.
   b. Press this button momentarily to toggle the LCD backlight ON or OFF.

2. **Bluetooth Button**
   a. Press and hold this button for 3 seconds to toggle the Bluetooth radio ON or OFF.
   b. Press this button momentarily to move through the Bluetooth related screens.

3. **GPS Button**
   a. Press and hold this button for 3 seconds to toggle the GPS Data Logging ON or OFF.
   b.Press this button momentarily to move through the GPS related screens.

Each button can be used as a simple click or as a press and hold action. See the scenarios below for details of operation using the buttons in each context.

Additional configuration and features are controlled wirelessly via the Bad Elf GPS utility app (see below).

USB Port / ElfPort™

The standard USB mini-B port on the back of the Bad Elf GPS Pro operates primarily as a standard charging port for recharging the GPS Pro's internal battery. This port also supports Bad Elf's ElfPort® technology, which enables communication with supported peripheral devices when combined with custom Bad Elf cables and the enabling software.

Data Storage

The Bad Elf GPS Pro contains 8MB of flash memory for storage of trip data. At a standard sampling rate of one position recorded per second (1Hz), the device can store up to 100 hours of trip data. The data can be divided into separate trips or collected as one single data log. The Bad Elf Utility app readily offloads trip data logs for storage on the Pod touch, iPhone, or iPad. The data can then be emailed and shared.

Power System

The Bad Elf GPS Pro includes a long life, embedded lithium ion battery. When both the Bluetooth® radio and the GPS are active, the battery offers more than 24 hours of continuous operation on a single charge. When operating in standalone data logging mode, that is, with the Bluetooth radio OFF, the Bad Elf GPS Pro can operate for over 32 hours.

Charge the Bad Elf GPS Pro

The Bad Elf GPS Pro is charged via the mini-USB connector on the back of the device.

Before using the Bad Elf GPS Pro, fully charge the device. To charge, simply use the provided cable and plug the Bad Elf GPS Pro into any standard USB power source, such as a computer, wall charger, or the included car charger. It takes up to 4 hours to fully charge the Bad Elf GPS Pro.

Power On the Bad Elf GPS Pro

To turn it on, press and hold the Power Button for 3 seconds until the display shows the splash screen.

Once powered on, the device is ready to accept incoming Bluetooth® connections from your Apple device. Follow the pairing instructions below.

Download the Bad Elf GPS utility app and any other location-based apps you want to use with your Bad Elf GPS Pro.

In the meantime, the unit will start searching for GPS satellites. Once a GPS lock is acquired, location data will be displayed on the LCD. The accessory will also begin sharing received location data with any devices (and apps) that have been connected via the Bluetooth connection.

Pair an Apple Device with the Bad Elf GPS Pro

The Bad Elf GPS Pro only needs to be paired once with your iPod touch, iPhone, or iPad. After your Apple device and Bad Elf GPS Pro are paired, they will connect automatically when both units have their Bluetooth radios ON and are within range of each other.

To pair the Bad Elf GPS Pro with an iPad, iPhone, or iPod touch, follow these simple steps:

1. On the Apple device, start the Settings app, then select General > Bluetooth. Make sure Bluetooth is turned ON.

2. This page will then show accessories that are within range and available for pairing.

3. Turn on your Bad Elf GPS Pro (if it is not ON already).

4. Within 10 seconds, you should see the Bad Elf GPS Pro appear in the list of devices, with a status of "Not Paired". Tap this item in the list to start the pairing process.

5. Within 10 seconds, you should see a dialog on your Apple device offering a PIN number. This PIN will also be displayed on the LCD display. This allows both sides of the connection to authorize the pairing with the remote device. Matching the PIN numbers ensures that you can confirm that you are pairing the correct devices. Data entry is not required.

6. On the Bad Elf GPS Pro, press the GPS Button to authorize the pairing. On your Apple device, press the "Pair" button.

7. In the Settings app, under General > Bluetooth, you should now see the Bad Elf GPS Pro listed with a "Connected" status.

You can turn Bluetooth off by pressing and holding the Bluetooth button for 3 seconds. While Bluetooth is turned off, the GPS and data logging will still function, but communications with your Apple device will not be possible. You can turn Bluetooth on again by pressing and holding the Bluetooth button again for 3 seconds.

Download the App from the App Store

The Bad Elf GPS Utility app is a free app available in iTunes. The app allows you to verify the accessory is paired and correctly connected to your Apple device. It shows the raw GPS data being received by the GPS receiver and allows you to configure the GPS logging features. Once you have logged some trips, the app allows you to transfer these logs to your Apple device for visualization and sharing.

Finally, if any firmware updates become available, the app will download them to your Apple device for installation into the accessory hardware.

After you have paired your Bad Elf GPS Pro to your Apple device for the first time, you will be prompted to download the Bad Elf GPS Utility app from the iTunes App Store. If you do not have Internet connectivity, or do not wish to download the app at that time, you can ignore this prompt. Your Bad Elf GPS Pro does not require the Bad Elf Utility app to operate with apps and will work out of the box with any location-based apps you have installed.

Please visit the Bad Elf website (http://bad-elf.com) for recommendations on compatible apps for various activities such as aviation, marine, fitness, hiking, running, cycling, geocaching and more. The Bad Elf GPS Pro fits all lifestyles.

Acquiring Satellites with the Bad Elf GPS Pro

Go outdoors to an open area, away from tall buildings and trees. Acquiring satellite signals may take a minutes or more the first time the device is turned on or after it has been out of use for an extended period of time.

While the Bad Elf GPS Pro is acquiring satellites, the LCD display shows the number of satellites that are acquired out of the possible satellites in view. Once a lock is acquired, the LCD display shows speed, heading, altitude, and accuracy. Press the GPS button to cycle through other screens that shows a variety of other values and data logging status.

Data Logging with the Bad Elf GPS Pro

Press and hold the GPS button for 3 seconds to turn on data logging. Once data logging is turned on, the LCD display shows a blinking icon along the bottom of the display. The Bad Elf GPS Pro records your position every second while data logging is on.

When data logging is on, pressing and holding the GPS button for 3 seconds causes a prompt to appear. You can then choose either to record a point of interest (POI) and continue data logging or to turn data logging off.

Once data logging is complete, you can use the Bad Elf Utility app to save, map, share, or delete the recorded trip.

Support

Please visit our website for troubleshooting steps and to contact our support team. Support is available be emailing **support@bad-elf.com**.

Technical Specifications

- **GPS**
    - 66-channel MTK chipset configurable to 1-10Hz refresh rate
    - Satellite acquisition times: (<30s cold, <15s warm, <5s hot)
- **Bluetooth**
    - 2.1 + EDR
    - Range: 33ft (10m)
- **Internal Battery**
    - Charging voltage: 5VDC @ 500mA
    - Capacity: 1600 mAH
    - Operating time: 24+hrs with Bluetooth/GPS, 32+hrs GPS logging only
    - Charging time: 4 hours

FCC RF Radiation Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. Follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IC Compliance

This Class [B] digital apparatus complies with Canadian ICES-003.

VCCI Compliance

Bad Elf is a member of the VCCI Council.

Industry Canada Compliance

Category I radio communication devices comply with Industry Canada Standard RSS-210. Category II radio communication devices comply with Industry Canada Standard RSS-310.

Battery Warnings

If these guidelines are not followed, the embedded lithium-ion battery may experience a shortened life span or may present a risk of damage to the GPS, fire, chemical burn, electrolyte leak, and/or injury.

Do not leave the GPS exposed to a heat source or in a high temperature location, such as in the sun in an unattended vehicle (e.g., car, airplane, helicopter, or boat). To prevent damage, remove the GPS from the vehicle or store it out of direct sunlight.

- Observe the following temperature ranges:

Battery Powered:	14°F to 140°F (-10°C to 60°C)
Externally Powered:	-22°F to 140°F (-30°C to 60°C)
Charging Temperature:	41°F to 113°F (5°C to 45°C)
Storage Temperature:	-22°F to 140°F (-30°C to 60°C)

- Do not use a sharp object to open the GPS enclosure or attempt to remove the battery.
- Do not incinerate the GPS or the battery enclosed therein.
- Do not disassemble, puncture, or damage the GPS or the battery.
- Keep the battery away from children.
- If using an external battery charger, only use the accessory approved for your product.
- Contact your local waste disposal department to properly recycle the battery.
- Do not attempt to replace the battery with a replacement battery.

FCC Compliance

This product has been tested and found to comply with Part 15 of the FCC interference limits for Class B digital devices FOR HOME OR OFFICE USE. These limits are designed to provide more reasonable protection against harmful interference in a residential installation, and are more stringent than "outdoor" requirements.

Operation of this device is subject to the following 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.

This equipment generates, uses, and can radiate radio frequency energy and may cause harmful interference to radio communications if not installed and used in accordance with the instructions. 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 of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet that is on a different circuit from the GPS unit.
- Consult the dealer or an experienced radio/TV technician for help.

This product does not contain any user-serviceable parts. Repairs should only be made by an authorized Bad Elf service center. Unauthorized repairs or modifications could result in permanent damage to the equipment, and void your warranty and your authority to operate this device under Part 15 regulations.

Limited Warranty

This Bad Elf product is warranted to be free from defects in materials or workmanship for one year from the date of purchase. Within this period, Bad Elf will, at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer shall be responsible for any transportation cost. This warranty does not cover failures due to abuse, misuse, accident, or unauthorized alteration or repairs.

THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS, IMPLIED, OR STATUTORY, INCLUDING ANY LIABILITY ARISING UNDER ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, WHICH MAY VARY FROM STATE TO STATE.

IN NO EVENT SHALL BAD ELF BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE, OR INABILITY TO USE THIS PRODUCT OR FROM DEFECTS IN THE PRODUCT. Some states do not allow the exclusion of incidental or consequential damages, so the above limitations may not apply to you.

Bad Elf retains the exclusive right to repair or replace the unit or software or offer a full refund of the purchase price at its sole discretion. SUCH REMEDY SHALL BE YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY.

To obtain warranty service, contact your local Bad Elf authorized dealer or call Bad Elf Product Support for shipping instructions and a Return Merchandise Authorization (RMA) tracking number. Securely pack the unit and a copy of the original sales receipt, which is required as the proof of purchase for warranty repairs. Write the RMA tracking number clearly on the outside of the package. Send the unit, freight charges prepaid, to any Bad Elf warranty service station.

Online Auction Purchases: Products sold through online auctions are not eligible for rebates or other special offers from Bad Elf. Online auction confirmations are not accepted for warranty verification. To obtain warranty service, an original or copy of the sales receipt from the original retailer is required. Bad Elf will not replace missing

components from any package purchased through an online auction.

International Purchases: International distributors provide a separate warranty for units purchased outside the United States. The local in-country distributor provides this warranty and this distributor provides local service for your unit. Distributor warranties are only valid in the area of intended distribution. Units purchased in the United States must be returned to the Bad Elf service center in the United States for service.

Legal

All rights reserved. Except as expressly provided herein, no part of this manual may be reproduced, copied, transmitted, disseminated, downloaded, or stored in any storage medium, for any purpose without the express prior written consent of Bad Elf. Bad Elf hereby grants permission to download a single copy of this manual onto a hard drive or other electronic storage medium to be viewed and to print one copy of this manual or of any revision hereto, provided that such electronic or printed copy of this manual must contain the complete text of this copyright notice and provided further that any unauthorized commercial distribution of this manual or any revision hereto is strictly prohibited.

Information in this document is subject to change without notice. Bad Elf reserves the right to change or improve its products and to make changes in the content without obligation to notify any person or organization of such changes or improvements. Visit the Bad Elf website (http://bad-elf.com) for current updates and supplemental information concerning the use and operation of this and other Bad Elf products.

Bad Elf®, the Bad Elf logos, ElfPort, Engineering Magic, Engineered Magic, Engineer Magic are trademarks of Bad Elf, LLC registered in the USA and other countries. These trademarks may not be used without the express written permission of Bad Elf.

"Made for iPod," "Made for iPhone," "Made for iPad" mean that an electronic accessory has been designed to connect specifically to iPod, iPhone, or iPad, respectively, and has been certified by the developer to meet Apple performance standards.

Apple is not responsible for the operation of this device or its compliance with safety and regulatory standards. Please note that the use of this accessory with iPod, iPhone, or iPad may affect wireless performance.

iPad, iPhone, iPod, and iPod touch are registered trademarks of Apple, Inc., registered in the US and other countries. iTunes is a registered trademarks of Apple, Inc., registered in the US and other countries.

The Bluetooth® word mark and logos are owned by the Bluetooth SIG, Inc. and any use of such marks by Bad Elf is under license.

Contact Bad Elf Product Support if you have any questions while using your GPS. In the USA, go to http://bad-elf.com/support.

Bluetooth Security

This Bad Elf product implements the Bluetooth 2.1 BR+EDR specification for wireless communication with mobile phones, tablets, and other computing devices. By default, the Secure Simple Pairing (SSP) method is used for all pairings, requiring confirmation of a random 6-digit PIN to be made by the user on both the Bad Elf accessory and the phone/tablet. 128-bit encryption is used for all wireless communications.

Based on the information above, this Bad Elf product meets the requirements of Security Mode 4, Level 4 as specified in the NIST Guide to Bluetooth Security (Special Publication 800-121 Rev 2) found at: https://doi.org/10.6028/NIST.SP.800-121r2-upd1

NOTE: If needed for compatibility with legacy computing systems, the user can optionally disable Bluetooth pairing PIN confirmation. Doing so lowers the security level compliance to Security Mode 4, Level 2 due to the lack of MITM protection.

Thank You!

All of us at Bad Elf would like to thank you for buying our products.

Notes

Notes

Bad Elf

Engineering Magic®