



**Navilock NL-650US MTK MT3337 GNSS GPS micro USB B Stick  
Receiver Manual (60134)**

## 1. Introduction

The NL-650US is a USB GPS receiver with internal antenna and MT3337 GPS chipset. The micro USB B interface enables connection to various mobile and stationary devices. Thanks to its extremely compact design, it is the perfect companion on any tour.

### 1.1. Package content\*

1x Navilock NL-650US  
1x 8cm CD ROM incl. manual  
1x USB cable micro B jack to USB A plug ca. 22.5 cm

\*Make sure before commissioning that all components of the delivery are included in the package. If anything is missing or damaged, please immediately contact your dealer.

### Important Health and Safety

If you use this product, you should take the following precautions to avoid possible legal liabilities and damages. Follow all product safety and operating instructions and keep them in a safe place. Observe all warnings in the manual and on the product. To avoid injury, electric shock, fire, and damage to the equipment, observe the following precautions.

#### Electrical safety

This product is intended for use with current via USB. Other usage may be dangerous and will invalidate any approval given to this product.

**NOTE: RECYCLE OR DISPOSE USED BATTERIES OR BATTERY CELLS  
ACCORDING TO THE LOCAL REGULATIONS OR THE ENCLOSED INSTRUCTIONS.**



### SAFETY PRECAUTIONS FOR DIRECT SUNLIGHT

Make sure that the product is kept away from excessive moisture and extreme temperatures. Allow the unit, the battery or the battery cells are not over a longer period of time in a vehicle or in places where can increase the temperature to 60 ° C (140 ° F) (a car dashboard, window sill, or behind a glass pane that is exposed to direct sunlight or strong ultraviolet light). The device or the vehicle may be damaged and the batteries or rechargeable batteries become overheated.

### Damage Requiring Service

Disconnect in the following cases, the product from the power supply, remove the battery, and contact an authorized service technician or the dealer:

If liquid has been spilled into the product or an object has fallen.

The product has been dropped or damaged.

There are noticeable signs of overheating.

The product does not operate normally when the operating instructions.

### Avoid using your device after a dramatic change in temperature

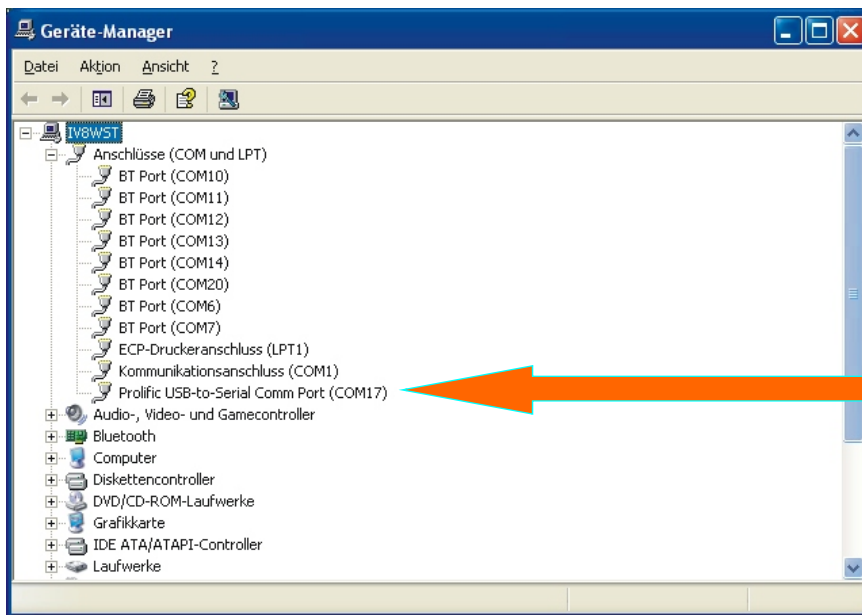
If you expose rapid changes in temperature and / or humidity ranges, condensation may occur inside the unit. To avoid damaging the device, allow sufficient time for the moisture to evaporate before using the device.

**NOTE:** If you move the unit from a cold to a warm or from a warm to a cold environment, allow the device to acclimate to room temperature before turning it on.

## 2. Starting operation

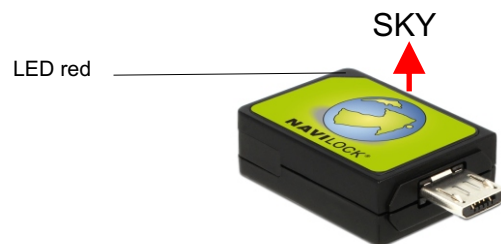
### 2.1. USB connection

Connect the USB receiver to a free USB port of your notebook etc.. The NL-650US will be recognized by your Windows OS and your system will try to install a driver. Cancel this operation and start the respective installation from the CD ROM under the menu driver. Follow the instructions of the installation. After the installation is finished please re-start your system. Afterwards the GPS COM port will be available under ports in the device manager. Please set this port in your navigation- or routeplanner software. Please do not use any other program at the same time, which accesses this port.



### 3. LED

- lights down: OFF
- lights up: ON without satfix searching
- lights flash: ON with satfix

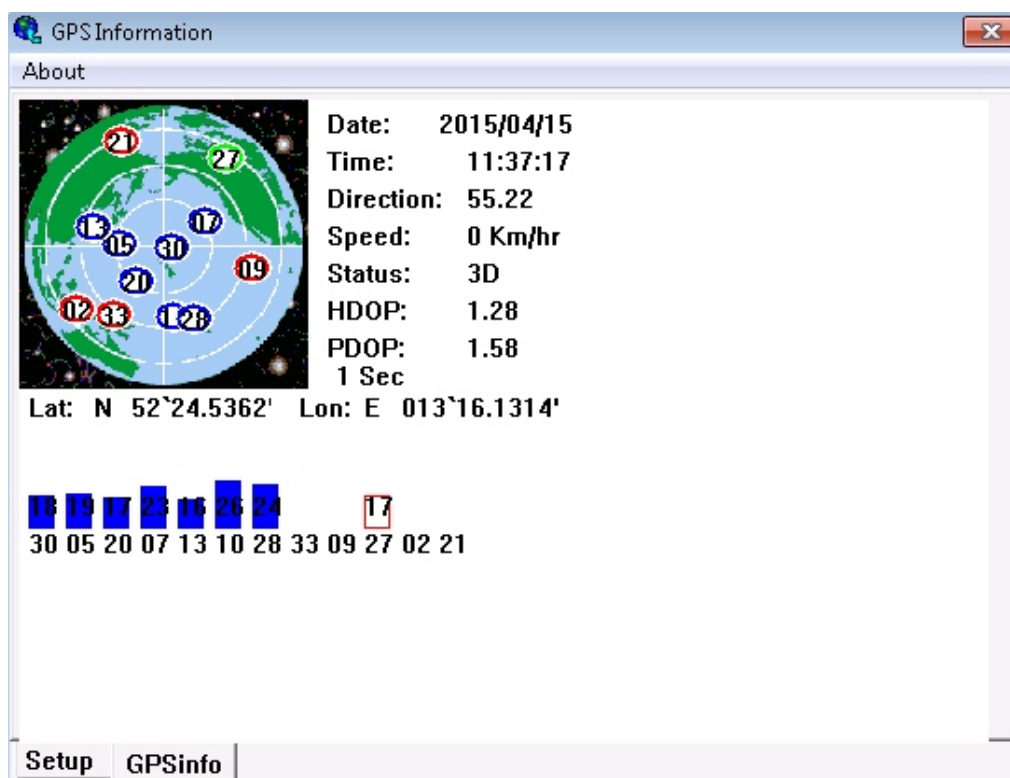
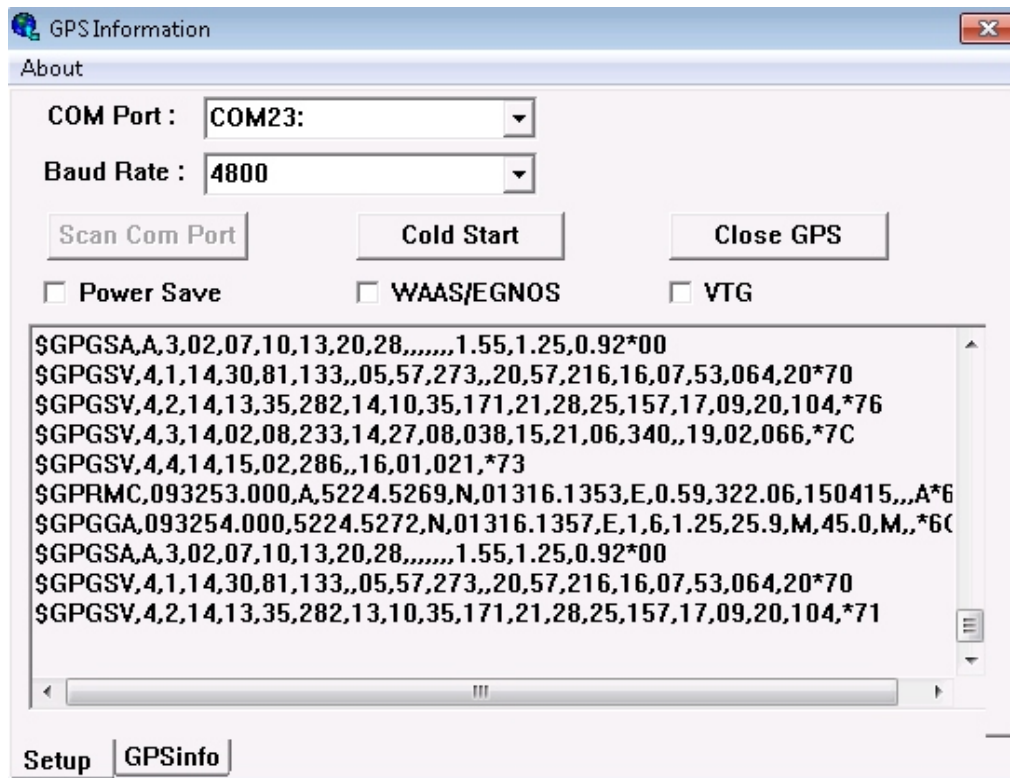


### 4. Application Environment

The NL-650US can be used as GPS receiver under Windows Vista/7/8/8.1, Linux RedHat 7.3, 8, 9, MacOS 8, 9 and 10. You can use it also with any device with Android 3.2 and above that support OTG feature. Please search the App "PL2303 USB-UART" from Prolific Technology Inc. and install it.

## 5. Function test example using GPSinfo in MS Windows

1. Install GPSinfo from CD.
2. Run GPSinfo with Administrator privileges
3. Select your GPS Com Port
4. Select Baud Rate 4800
5. Push "Start GPS"



## **Explosion on contact with fire!**

Do not permanently expose the receiver to temperatures above 60°C (140°F).

### **6. Possible sources of error and their elimination**

6.1 You still don't get a satfix.

The NL-650US needs up to 20 minutes for its first satfix on another continent. To get a satfix the view to the sky must be unobstructed. Move the NL-650US as far as possible from the wall. A house wall reflects the signal strongly and contributes to the satfix time delay.

The Navilock repair center tries to be as obliging as possible, so please tell us the real reason for the defect. During the error analysis, we can generally detect if the cause for the defect was an external cause, water damage, fall, over-voltage or the wrong handling of the unit.



Failures are often the result of little causes. It is not always necessary to exchange the product immediately, because this will not solve the cause of the failure if it is not a GNSS hardware problem.

Before visiting your dealer, please contact the Navilock support center. They will try to help you quickly and without further ado, so that the circumstances of an exchange, which might in any case be unnecessary, are avoided.

In this case, please write down a detailed description of the error, add this information to your end device and the software used in this device, as well as the operation environment (operating system, service pack version, CPU type, storage size, hard disk drive and interface etc.), and send an e-mail to [support@navilock.de](mailto:support@navilock.de).

A support member will look into your problem and work out a solution.

We hope your Navilock product brings you fun and enjoyment!

## 7. Specifications

Chipset vendor/type: MediaTek MT3337 GLONASS GPS

Cannels: 22 tracking, 66 acquisition  
Sensitivity: -165 dBm  
Frequency: GPS: L1, 1575.4200 MHz  
C/A Code 1.023MHz chip rate

### Target precisions:

Position horizontal: GPS/SBAS: 2 m CEP  
Time: 1 micro second synchronized with GPS time  
Speed: 0.1m/s  
Date: WGS-84  
Protocol: NMEA-0183 V3.01 GGA, GSA, GSV, RMC  
Transfer rate: Software command setting (Default: 4800, n, 8, 1 for NMEA)

### Detection rates:

Cold start: 35 s average  
Hot start: 1 s average  
Reacquisition: 0.1 s average  
Update rate: 1 Hz

### Dynamic prerequisites:

Acceleration limit: smaller than 4 g  
Height limit: 18000 m  
Speed limit: 515 m/s

### Performance:

Power supply: 5 V  
Current: ca. 35 mA tracking

Connection: micro USB B

Operating temperature: -10°C ~ 60°C

Dimensions (LxBxH): ca. 33.9 x 18.0 x 8.1 mm  
Weight: ca. 7 g

## 8. Zertifikate

CE

## **9. Warranty period**

Your GNSS receiver will be repaired free of charge within the legal warranty period, unless it was damaged due to external cases, humidity dropping or other damages due to improper usage. Your dealer is always ready to help you. Please send your unit for repairs directly to:

**Navilock Repair Center  
Beeskowdamm 13/15  
D-14167 Berlin-Zehlendorf**

Postage must always be paid by the client.

Please add a proof of purchase and a detailed error description. Time based error, meaning how often an error occurs, must be expressly mentioned.

**For logistic reasons, we cannot accept returned packages without the postage being paid by the client.**

## **10. Support**

For additional support questions, please contact our support center:

[support@navilock.de](mailto:support@navilock.de) / [www.navilock.com](http://www.navilock.com) or by telephone: +49 30 84716503\*.

You can also call the Service Hotline at the following hours: Mo – Fr.: 9:00 – 16:30.

\* You will be charged a connection fee for a telephone call to Germany/Berlin, in accordance with the connection fee overview of your telephone service provider. Callers from Germany, who subscribed to a national telephone flat-rate service and can call nation-wide fixed-telephone numbers free of charge, can call us without incurring additional charges.

You can also find current product information on our homepage. [www.navilock.com](http://www.navilock.com).

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## Conformity declaration

Please download the Declaration of Conformity from <http://www.navilock.de/support/> in the conformity area.



## WEEE note

The WEEE (Waste Electrical and Electronic Equipment) directive, which came into force on 13 February 2003, lead to a comprehensive change in the disposal of used electric products. It is the main purpose of this directive to avoid electric waste products (WEEE), while simultaneously promoting the re-usage, recycling and other forms of reconditioning in order to reduce the amount of waste. The WEEE logo on the product and the package shows that the product should not be disposed of with regular garbage. You are responsible for disposing all used electric and electronic devices at the corresponding collection sites. The separate collection and meaningful re-usage of electronic waste helps to deal with natural resources more economically. In addition, re-using electronic waste contributes to the preservation of the environment and human health. Additional information regarding the disposal of electric and electronic devices, their re-usage and the collection sites can be found at your local authorities, disposal companies, specialist shops and the manufacturer of the product.

## RoHS conformity

This product meets the requirements of directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003, concerning the limited usage of dangerous substances in electric and electronic devices (RoHS) and its amendments. This product complies with the directive 2011/65/EU from January 3rd 2013.

### EU Import:

Tragant Handels- und Beteiligungs GmbH Beeskowdamm 13/15, 14167 Berlin, Germany