



**NAVILOCK®**



**NL-454US**  
**User Manual (60097-a)**

## 1. Introduction

The NL-454US is a USB GPS receiver with internal antenna and a 48 channel MStar GPS chipset. The USB interface enables the connection to a notebook, UMPC, tablet- or Car PC. Due to its extreme compact design it acts as ideal companion on every tour.

### 1.1. Package content\*

- 1x Navilock NL-454US
- 1x USB extension cable
- 1x 8cm CD ROM (incl. manual)

\*Make sure that the product package contains all items before operation. If any item is missing or damaged, then please contact your dealer immediately.

#### Important health- and security information

If you use this product you should take precautions to avoid damages and legal consequences. Follow precisely all security- and handling advice and keep it carefully. Pay attention to all warning notices in the manual and on the device. To avoid injury, electric shock, fire and damages on the device, please pay attention to the following notices.

##### Electrical Security

This product is intended for operation with power via USB connection. Any other application can be dangerous and lead to loss of any warranty claim for this product.

**NOTE: RECYCLE OR DISPOSE THE DEVICE ACCORDING TO THE APPLICABLE REGULATIONS.**



#### SECURITY ADVICE REGARDING DIRECT SUNLIGHT

Make sure the device is not exposed to over humidity and extreme temperature. Don't let the device for too long in a vehicle or other places where the temperature can rise up to 60°C (140°F), e.g. on the dashboard, windowsill or behind a glass panel, which is exposed to high UV-Light or the sun. In this case the device or the vehicle can be damaged.

#### Damages, which require a repairing

Disconnect in the following cases the device from the USB port and contact an authorized repairing specialist or the dealer:

- Liquidity or any item came into the product.
- The product was exposed to rain or liquidity.
- The product fell down and is damaged.
- There are visible signs of overheating.
- The product does not work properly despite of correct operation.

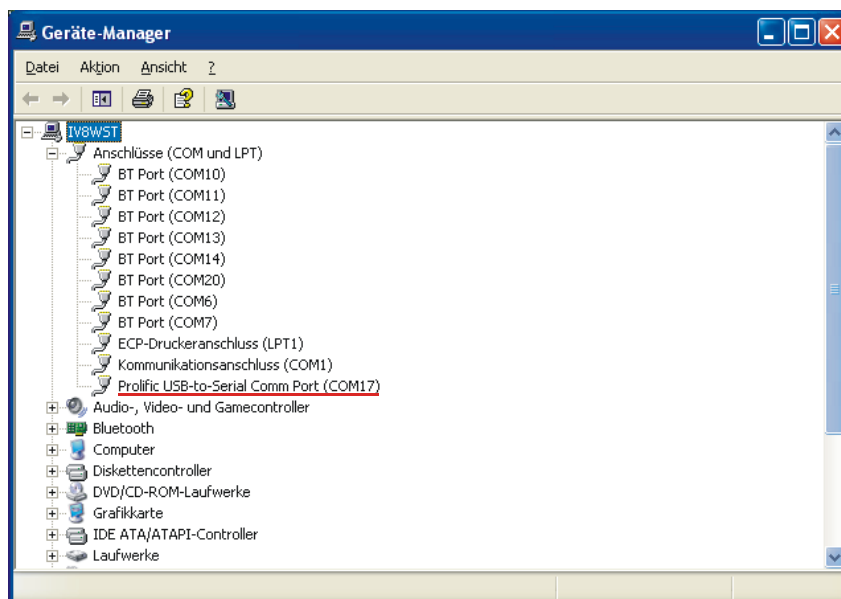
Avoid using the device right after high thermal fluctuation. Condensation in the device might occur if you expose the device to high thermal or humidity fluctuation. In order to avoid damages wait until the humidity is evaporated, before using it.

**NOTE: If you bring the device from a cold into a warm or from a warm into a cold environment, let the device take over the temperature before switching it on.**

## 2. Operation

Connect the USB receiver to a free USB port of your notebook etc.. The NL-454US will be recognized by your Windows OS and a 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 indication

- Flash, with Satfix
- Light, without Satfix

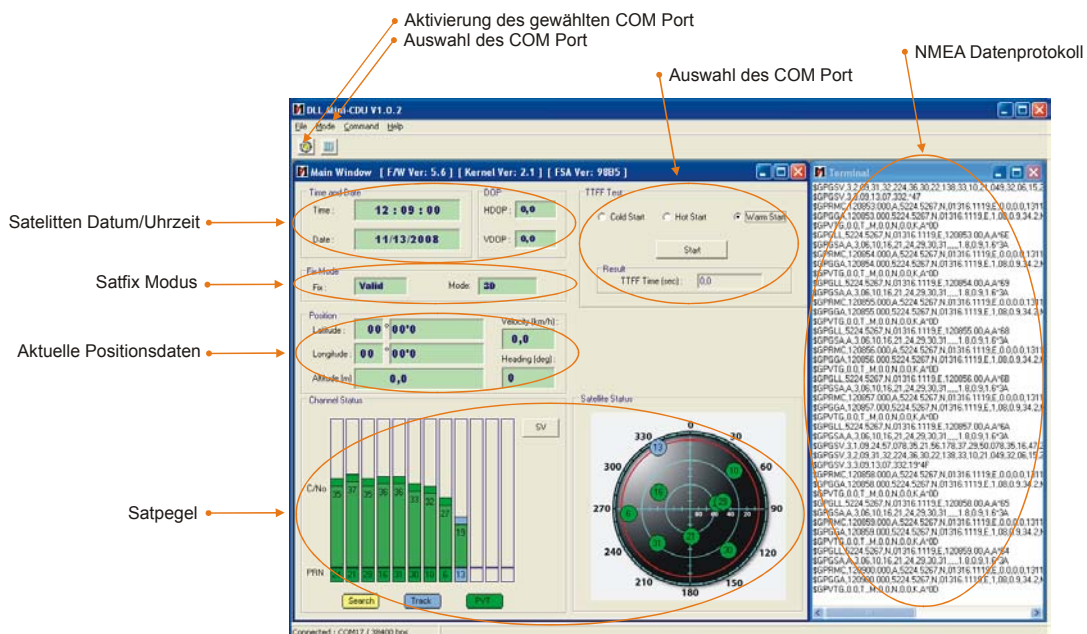
### 4. Operating area

The NL-454US can be used as GPS receiver under Windows 2000/XP/Vista, Linux RedHat 7.3, 8, 9, MacOS 8, 9 and 10. A respective driver can be found on the CD ROM.

### 5. Function test with Mini CDU

1. Install the Mini CDU software on your Windows XP or Vista device. Mini CDU is only a test program and not usable for navigation and orientation. Make sure it will be closed after the test. It occupies the COM port and does not allow access to any navigation- or routing software on the COM port. This test tool enables you to test the function of NL-454US and excludes or confirms that there is a missing GPS reception of a navigation software. If the COM port is chosen correctly and the baud rate is set on 38.400, you will see the NMEA protocol on the right side. If you see data as on the diagram below, the NL-454US has not found any Satfix yet. It is still searching for available satellites. This process can take up to 30min. for the first time, depending on the place and reception environment.

```
$GPGGA,1.22,346.000,5.224,5.267,N,01316.1119,E,1.09,0.9,34.2,M
$GPVTG,0.0,T,M,0.0,N,0.0,K,A*0D
$PMST,200.02,*2A
$PMST,100.01,00.05,06.2,1.02,01.9885,000.001,08073110.0803
$GPRMC,235946.100,V,0000.0000,N,00000.0000,E,0.0,0.0,0501
$GPGGA,235946.100,0000.0000,N,00000.0000,E,0.0,0.0,M,M
$GPVTG,0.0,T,M,0.0,N,0.0,K,N*02
$GPGLL,0000.0000,N,00000.0000,E,235946.10,V,N*7F
$GPGSA,A,1,,,,,,,,,,,,,*1E
$GPRMC,235947.200,V,0000.0000,N,00000.0000,E,0.0,0.0,0501
$GPGGA,235947.200,0000.0000,N,00000.0000,E,0.0,0.0,M,M
$GPVTG,0.0,T,M,0.0,N,0.0,K,N*02
$GPGLL,0000.0000,N,00000.0000,E,235947.20,V,N*7D
$GPGSA,A,1,,,,,,,,,,,,,*1E
```



The NMEA protocol will be displayed in the Mini CDU but you cannot find any receiver in your software? This might occur due to the software setting. Please contact the support of the software producer.

### **Risk of explosion when exposed to fire !**

Explosion hazard upon exposure to fire! Don't expose the receiver to permanent temperature above 60°C/140° F!

## **6. Possible Sources of Malfunction and Troubleshooting**

- 6.1 The blue LED does not light up after connecting it to the USB port. Make sure that the PC or notebook is switched on. When indicated you might test the USB port with another USB device. If another USB device works, please contact the support.
- 6.2 The blue LED does not light even after a long time of waiting, but you still don't receive any Satfix. The NL-454US needs up to 30min. on a different continent for its first Satfix. Therefore you need a free view to the sky. Choose a position for NL-454US which is far away from a house wall. You can also use the included USB extension cable. A house wall causes high reflection and adds to time delay of the Satfix. Also the notebook can effect the reception. Therefore a short extension cable is included in the package.
- 6.3 Your PC does not support the auto-start function and does not start the CD ROM automatically. Please read under <http://msdn2.microsoft.com/en-us/library/Aa969329.aspx>
- 6.4. The NL-454US got in contact with water jet (water jet like e.g. under the shower or heavy rain with installation on the roof). Do not connect the receiver to the notebook etc.. It will be completely destroyed and cannot be repaired anymore. Please send the receiver with the description „water damage“ to our support. The support will disassemble, dry and test the function of the receiver.

The Navilock repair center aims to be as fair as possible. Therefore we kindly ask you to give us the true reason for a defect. During the fault analysis, the support needs to find out if a third party, a water damage, a downfall damage, over voltage or wrong handling might be the reason for that.



Often malfunctions are caused by minor errors. It is not always necessary to immediately replace a product, because this will not correct a malfunction that is not caused by the GPS hardware.

Before contacting your dealer, please contact Navilock support. This will provide you with help in a fast and easy manner, and help avoid unnecessary replacement.

In such cases, describe the malfunction as accurately as possible in writing, add the details for your device and the used software as well as operating environment (operating system, servicepack version, CPU size and type, memory size, HDD type and interface, etc. and send an email to [support@navilock.de](mailto:support@navilock.de).

A member of the support team will take care of your problem and work on a solution.

We hope you enjoy your Navilock product!

## 7. Specification

MStar MB2122 GPS Single chipset

Frequency L1, 1575.42 MHz

C/A Code C/A Code

Max. reception simultaneously 48 channels

Reception positioning: -161dBm

Integrated ceramic patch antenna (18 x 18 x 4mm)

### **Accuracy**

Position horizontal 5 meter

Speed: 0.1 m/s

Time: 1ms RMS

### **Date**

Date standard: WGS-84

### **Reference rate**

Hot start 1.5 sec., aprox.

Warm start 32 sec., aprox.

Cold start 34 sec., aprox.

Re-reference < 1 sec. aprox.

### **Protocol**

NMEA 0183 v3

GGA(1 sec.), GSA(1 sec.), GSV(5 sec.), RMC(1 sec.), GLL, (optional VTG)

Baud rate 38.400

### **Dynamic condition**

Speed up limit less than 4g

Height limit 18,000 meter (60,000 feet) max.

Speed limit 515 meter/ sec. (1,000 knots) max.

### **Temperature**

Operation -20°~ +60°C

Storage -30°~ +70°C

Humidity up to 95% non-condensing

### **Power**

Voltage DC 5.0V, USB Bus power

Power < 55 mA

### **Physical features**

Dimension 65.5 x 23 x 11 mm

Weight 20g

### **Operating systems**

USB protocol USB 2.0

Windows 98 / 2000 / XP / Vista

Mac OSX 8/9/10.x

Linux RedHat 7.3 / 8.0 / 9.0

## 8. Certificate

FCC USA (Covers requirements for CANADA ICES-003)

CE

## **9. Warranty period**

Your GPS receiver will be repaired free of charge during the legal warranty period, provided the damage was not caused by external impact, moisture, fall or improper use. Your dealer will help you with words and deeds. Repairing goods can be send directly to

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

Please send only parcels which are franked.

Please include a proof of purchase and a detailed error description. "doesn't work" or "defect" is not detailed. Please point out also how often a defect occurs. **Transmittals which are not franked cannot be accepted, due to logistic reasons.**

## **10. Support**

If you have further questions, please contact our customer support:  
[support@navilock.de](mailto:support@navilock.de) / [www.navilock.com](http://www.navilock.com)

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

## **11. Final clause**

Information and data contained in this manual are subject to change without notice in advance. Errors and misprints excepted.

## **12. Copyright**

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## Declaration of conformity

The CE declaration of conformity can be found under <http://www.navilock.de/support/> in the section of declaration of conformity.



FC C € 0560

### WEEE-notice

The WEEE (Waste Electrical and Electronic Equipment)-directive, which became effective as European law on February 13<sup>th</sup> 2003, resulted in an all out change in the disposal of disused electro devices. The primary purpose of this directive is the avoidance of electrical waste (WEEE) and at the same time the support of recycling and other forms of recycling in order to reduce waste. The WEEE-logo on the device and the package indicates that the device should not be disposed in the normal household garbage. You are responsible for taking the disused electrical and electronical devices to a respective collecting point. A separated collection and reasonable recycling of your electrical waste helps handling the natural resources more economical. Furthermore recycling of electrical waste is a contribution to keep the environment and thus also the health of men. Further information about disposal of electrical and electronical waste, recycling and the collection points are available in local organizations, waste management enterprises, in specialized trade and the producer of the device.

### Compliance with RoHS

This product complies with the directive 2002/95/EC of the European parliament and the council from January 27<sup>th</sup> 2003 concerning the restricted use of dangerous substances in electrical and electronical devices (RoHS) as well as its modification.

### FCC Class

A FCC certification of radiation limits on digital devices. Class A certification is for business use. Class B, for residential use, is more stringent in order to avoid interference with TV and other home reception. See Part 15, Subpart B, of the Federal Register (CFR 47, Parts 0-19).