NL-602U ublox6 USB receiver
Operation manual (61840)

1. Introduction

The USB 2.0 GPS Receiver based on u-blox 6 SuperSense® chipset and it has a built-in antenna for high sensitivity. Besides GPS, this u-blox 6 chipset enables you in future to receive also Galileo, the european navigationsystem.

You can use this GPS Receiver with a Notebook and a suitable routing software for navigation.

1.1. Contents*

1 x Navilock NL-602U
1 x 8 cm CD ROM including operation manual

* Before using the device, please make sure that all the parts are included in the package. If any parts are missing or damaged, please contact your dealer immediately.

Important health and safety information

When using this product, take the following precautions in order to avoid possible damages and legal consequences. Always follow all safety and operation manuals exactly and keep them for future reference. Observe all warnings in the operation manual and on the product. In order to avoid injuries, electrocution, fire and damages to the product, observe the following precautions:

ELECTRIC SECURITY

This product is designed for operation with power supply via the USB port. Any other operation mode can be dangerous and may void the warranty claims for this product. This unit contains an internal back-up battery.

NOTE: RECYCLE OR DISPOSE OF USED BATTERIES OR RECHARGEABLE BATTERIES IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND THE INSTRUCTIONS INCLUDED WITH THE PRODUCT.

PRECAUTIONS REGARDING DIRECT SUNLIGHT

Make sure the unit is not exposed to very high humidity and temperatures. Never leave the unit, the battery or the rechargeable battery for an extended period in a vehicle or plate, where the temperature can increase to over 60°C (140°F), for example on the dashboard of a car, the window sill or behind a pane of glass, which is directly exposed to the sun or very strong UV light. Otherwise the unit or the vehicle may be damaged, and the battery or the rechargeable battery may overheat.

Damages requiring repairs

Disconnect the unit from the AC supply in the following cases; also disconnect the rechargeable battery and contact an authorized repair man or your dealer.
• Liquid or an object has entered the product.
• The product has fallen down or was damaged.
• There are visible signs of overheating.
• When operated normally, the product does not function flawlessly.

Avoid using the unit directly after strong temperature changes.

If the unit is exposed to strong temperature and humidity fluctuations, condensation can form in the unit. In order to avoid damage to the unit, please wait until the condensation has dried off before using the unit.

NOTE: If you bring the unit from a cold to a warm environment, or vice versa, first let it get accustomed to the new temperature before turning it on.

2. Starting operation

2.1. Plug the USB cable in a free USB port on your notebook etc. The NL-602U will be recognized by your Windows operating system, which will attempt to install a driver. Abort this process, and start "u-center_6.01_Installer.exe" from the CD-ROM, or download the driver from the Navilock website. Follow the installation instructions. After the installation is completed, re-start your computer. Then the GPS COM port will be available in the Device Manager under Connections. Set this port in your navigation or route planner software. Do not use another program that accesses this port at the same time.
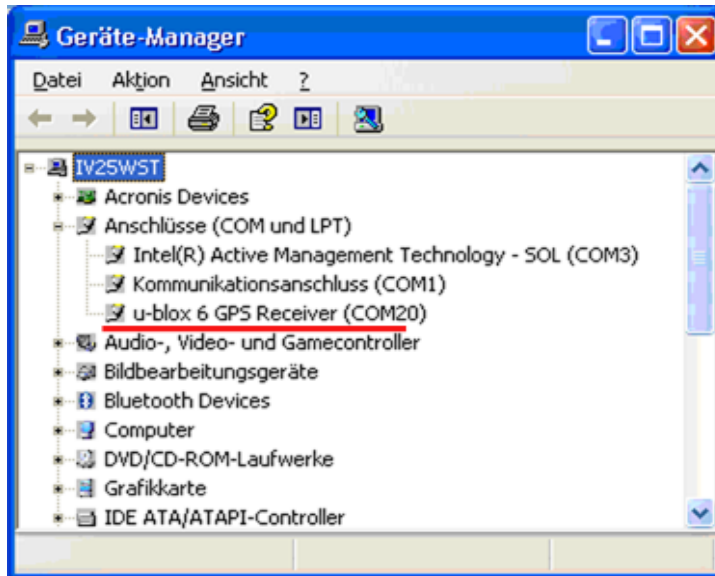
3. LED indicator
- Flashes, with Satfix
- Lights, without Satfix

3. Application environment

The NL-602U can be used as a USB GPS receiver under Windows CE/2000/XP/Vista/7. The corresponding driver is available on the CD-ROM.
The operation under Linux Kernel 2.6.x will be explained in the description on the CD.

Furthermore you will find a driver for Windows 7 Sensor and Location API on the CD.

4. Functional test with u-Center 6.xx
1. Install the u-Center software on your unit. Select the version suitable for your system. U-Center is a pure test program and cannot be used for navigation or orientation. It must always be closed after the test. It blocks the COM port and does not allow any access of the navigation or route software to the COM port. It also serves for updating the Assist GPS data and switching to EGNOS.

If the NMEA protocol is displayed in u-Center, but you cannot find a receiver in the application software, the connection problem is not with the receiver, but with the selected software setting. In this case, the software manufacturer support center may be able to help you.
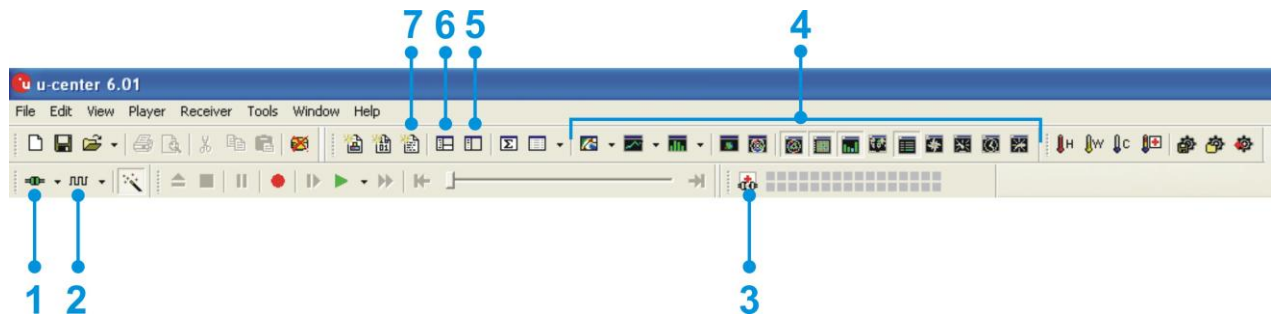
After starting the u-Center software, check the functionality of your NL-602U.

1. Selecting the COM port
2. Selecting the baud rate
3. Downloading Assist GPS and updating the receiver
4. Visual display of the NMEA data
5. Configuration manager
6. NMEA/UBX message console
7. NMEA text console

As seen below, you can set up your u-Center by yourself. Everything important can be connected and displayed immediately. The green bars at the bottom of the picture show the reception quality at your position. If no bars are displayed, please change your position. The NL-602U cannot receive anything in a closed building. If the blue bars are displayed, the receiver is still acquiring the data and verifying the receipt data.
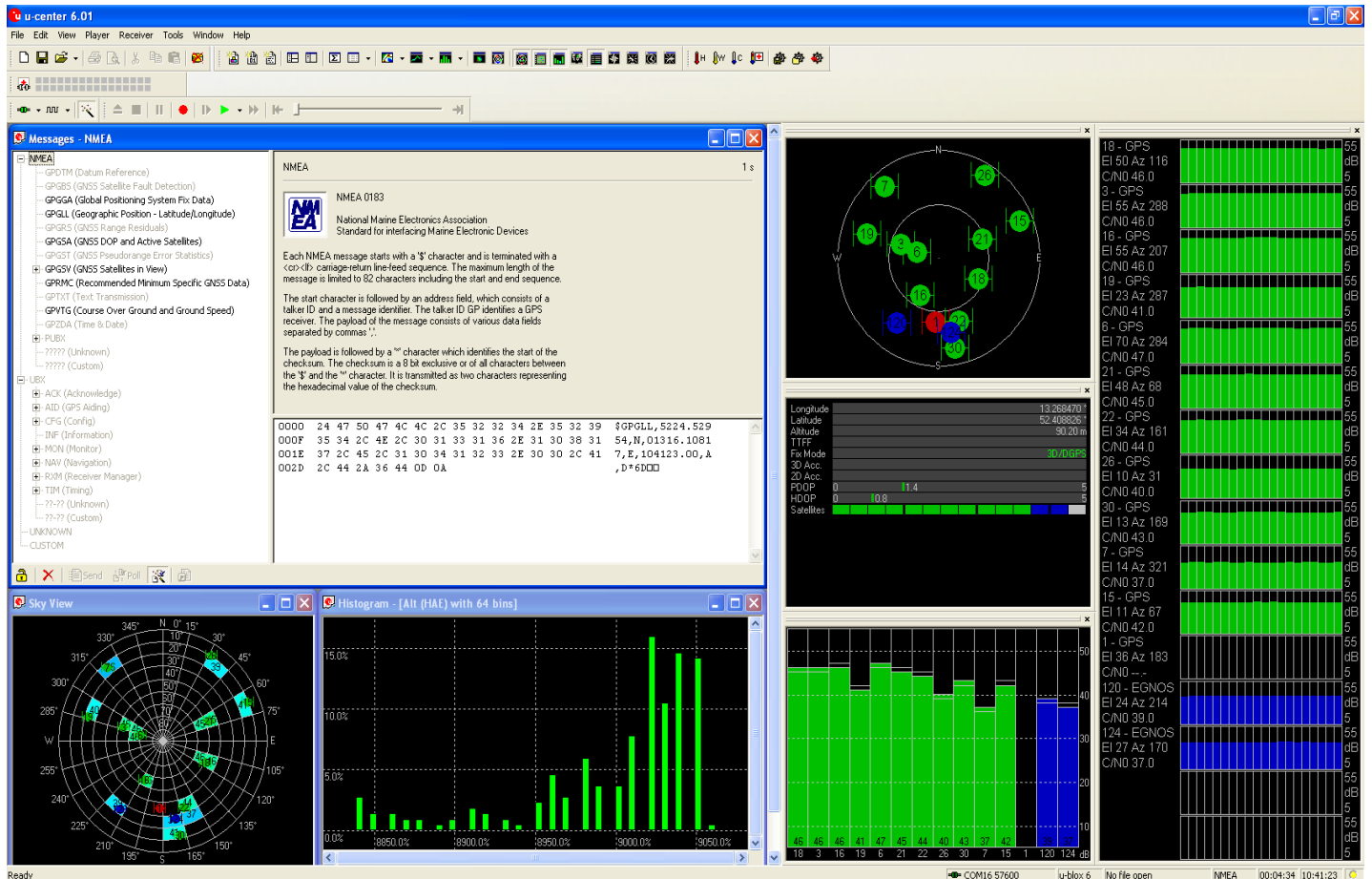
5. EGNOS configuration with u-Center 6.xx
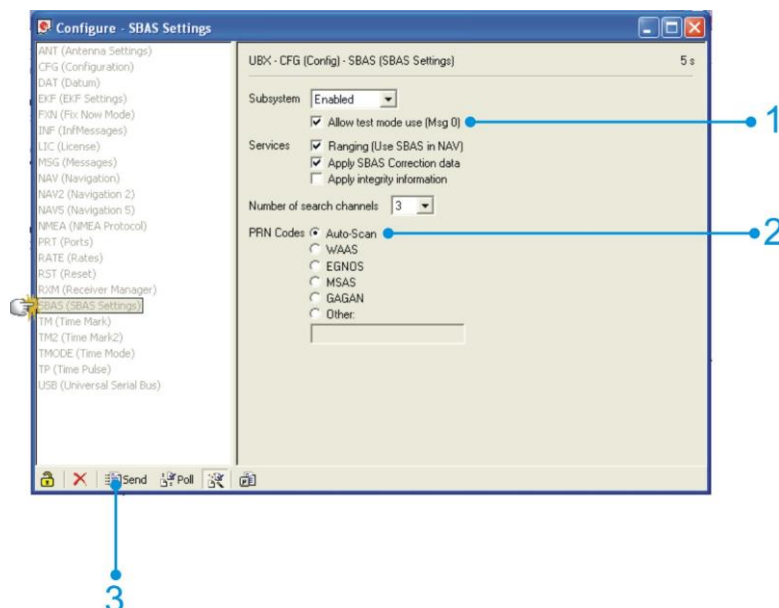
In order to switch the NL-602U to EGNOS reception, you must enter the configuration mode. There you can select different setting functions. More detailed information can be found in the current documentation at the URL http://www.u-blox.com.

To switch the NL-602U to EGNOS reception, please click in the menu bar on item 5. A small window will open, in which all settings for the receiver can be made.

First click on "SBAS" (**S**atellite **B**ased **A**gmentation **S**ystem), then the item SBAS Settings will open on the right. Click on the first free field before item 1 and 2. Then, click on item 3 "Sending". The changed data will then be transmitted to the receiver. Close the window. You will be asked if you want to save this setting. Click on YES.

EGNOS is still in operation mode. The long-planned switch-over to regular operation was repeatedly postponed. This is the reason why the use of the EGNOS correction in the NL-602U is deactivated in the default setup. That is not to say that by using these correction values the location determination will become better. The users must decide for themselves if they want to use this function or not.

6. Assist GPS configuration with u-Center 6.xx

The NL-602U supports AssistNow!

AssistNow is a standard **A-GPS service**, which increases the performance of the **GPS receiver**, by calculating a position almost immediately, even under difficult reception conditions. **A-GPS** improves all GPS capable applications, especially those that require a continuous state of readiness, for example applications for fleet management or **GPS capable hand-held devices**, whose users would like to access local services immediately, independently of the reception conditions.

Without A-GPS, a GPS receiver must localize at least 4 satellites in direct line of vision, and then download their location data. This process takes 30 seconds under optimal reception conditions, but under less favorable conditions it may take much longer, e.g. in an urban environment or in a

building, where the **GPS reception** is weaker. AssistNow sends the data directly to the GPS receiver, thus enabling a quick calculation of the position. AssistNow sends the data directly to the GPS receiver, thus enabling a quick calculation of the position.

The offline service provides support data, which are valid up to 14 days. The user can thus profit for longer periods from the increased **satellite acquisition performance**, and they need an internet connection only occasionally, in order to update the support data.

The call-up and data transmission functions can be found in the menu bar of the u-Center.

Click on the AGPS function in the menu bar to update AssistNow and to load the NL-602U.
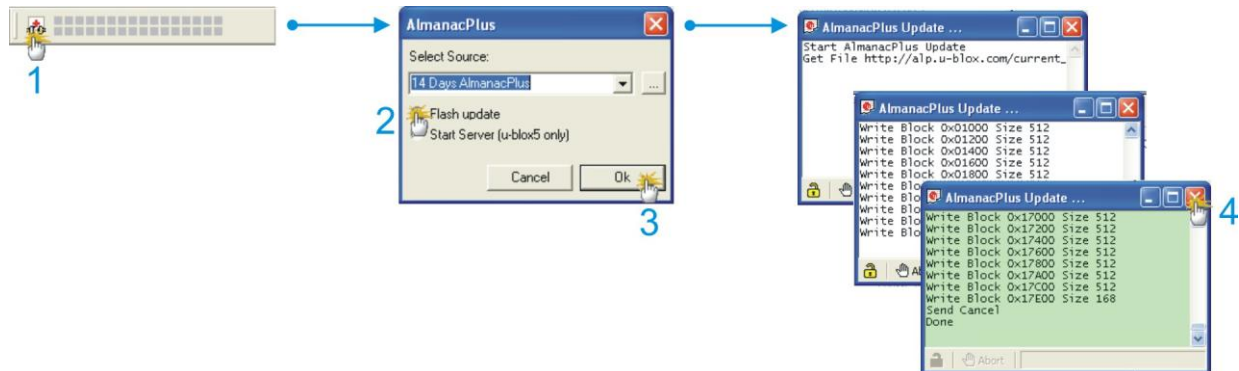
A small window with a small pull-down menu appears, in which you can see the validity of the data. Choose the desired validity period. Click on "Flash update", and then on OK. The UPDATE window opens and shows that the u-Center has loaded the data and is transmitting them to the NL-602U. When this process is finished, the window turns green, and the messages "SEND CANCEL" and "DONE" are displayed. This finishes the process.

Further information to the u-Center can be found in the u-blox documentation under **http://www.u-blox.com/products/u_center.html**. If you have any questions, please contact u-blox directly.

Danger of explosion at contact with fire!

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

6. Possible sources of error and their elimination

   6.1 The green LED doesn't light up after the first connection to the USB port. Make sure that the PC or notebook is turned on, and test the USB port, possibly with another USB device. If this other USB device works fine, please contact the support center. If this other USB device works fine, please contact the support center.

   6.2 The green LED continues to light even after a long waiting time, but you still don't get a Satfix. The NL-602U 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-602U as far as possible from the wall. A house wall reflects the signal strongly and contributes to the Satfix time delay.

6.3 Your PC doesn't support the auto start function, and doesn't start the CD-ROM automatically. Please check under http://msdn2.microsoft.com/en-us/library/Aa969329.aspx.

6.4. The NL-602U came in touch with jet water (water jet from a shower head or strong rain (when it was mounted on a car roof). Do not connect the receiver with the notebook etc. under any circumstances, because it will otherwise be completely and irreparably destroyed. Return the receiver to our support center, mentioning "water damage". The support center will disassemble the receiver, dry it and check its functionality.

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 GPS 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, CUP size and type, storage size, hard disk drive and interface etc.), and send an e-mail to 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

Chip set manufacturer/type   ublox6 GPS & GALILEO SuperSense$^®$

Channels	50 channels
Sensitivity	-162 dBm
Frequency	L1, 1575.42 MHz
C/A Code	1.023 MHz chip rate

Target precisions:
Position Horizontal	2,5m CEP, 2,0 m CEP with SBAS
Time	1 microsecond synchronized with GPS time
Speed	0.1m/sec. 95% (SA off)

Date: WGS-84

Protocol: NMEA-0183 V3.01 GGA, GSA, GSV, RMC, VTG

Detection rates:
Hot start	3.5s average (with ephemerides and almanac)
Cold start	25s average (neither ephemerides nor almanac)
Re-Acquisition	1s average (recovery time after interruption)

UP-DATE Rate: 5 Hz

Dynamic prerequisites:
Acceleration limit	smaller than 4g
Height limit	18,000 meters (60000 feet) maximal
Speed limit	515 meter/sec. (1000 knots) maximal

Performance:
Power supply	5 Volt via USB

Connection: USB

Operating temperature: -20°C ~ +60°C

Dimensions: 65 mm x 45 mm x 22 mm

8. Certificate
CE
FC

9. Warranty period

Your GPS 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. "Doesn't work" or "defective" is not 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 / 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

11. Final provision

The information and data contained in this manual may be changed without prior notice. Errors and misprints reserved.

12. Copyright

No part of this instruction manual may be duplicated or transmitted for any purpose and by any means, be they electronic or mechanical, without the express written authorization from Navilock.

The brand Navilock is a registered trademark and may not be used without the written authorization of the trademark owner. In no case may it be altered or completed by additions.

13. Brands of third parties

Brands, trade names, product names and logos of third parties mentioned in this documentation may be trademarks or registered trademarks of the respective owners.

Conformity declaration

Products with a CE symbol fulfill the R&TTE- directives (99/5/EC), the EMC- directives (1999/5/EC), which were released by the EU-comission. The compliance with these directives implicates the conformity with the following European standards.

EN 60950-1:2006:+A11:2009
EN 300440-1 V1.6.1
EN 300440-2 V1.4.1
EN 301 489-1 V1.8.1
EN 301 489-3 V1.4.1

EN 62209-1: 2006:A11:2009
EN50361 : 2001
EN 300 440-1 V1.6.1: 2010
EN 300 440-2 V1.4.1: 2010
EN 301 489-1 V1.8.1: 2008
EN 301 489-3 V1.4.1 2002

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 complies with the directive 2002/95/EC of the European parliament and the council from January 27th 2003 concerning the restricted use of dangerous substances in electrical and electronical devices (RoHS) as well as its modification. This product complies with the directive 2011/65/EU which becomes effective from January 3rd 2013.

FCC Class

An 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 TVs and other home devices. See Part 15, Subpart B, of the Federal Register (CFR 47, Parts 0-19).

Status: 09/2011

<u>Europe – EU Declaration of Conformity</u>

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

- EN 62209-1: 2006:A11:2009
  Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures -
  Part 1: Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close 13 proximity to the ear (frequency range
  of 300 MHz to 3 GHz)

- EN50361 : 2001
- Basic standard for the measurement of specific absorption rate related to human exposure to electromagnetic fields from mobile phones (300 MHz-3 GHz)

- EN 300 440-1 V1.6.1: 2010
- Electromagnetic compatibility and Radio spectrum Matters (ERM); Short range devices; Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Part1: Technical characteristics and test methods

- EN 300 440-2 V1.4.1: 2010
- Electromagnetic compatibility and Radio spectrum Matters (ERM); Short range devices; Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive

  EN 301 489-1 V1.8.1: 2008
  Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

  EN 301 489-3 V1.4.1 2002
  Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 40 GHz

CE 0560

cs Česky [Czech]	*[Jméno výrobce]* tímto prohlašuje, že tento *[typ zařízení]* je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
da Dansk [Danish]	Undertegnede *[fabrikantens navn]* erklærer herved, at følgende udstyr *[udstyrets typebetegnelse]* overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
de Deutsch [German]	Hiermit erklärt *[Name des Herstellers]*, dass sich das Gerät *[Gerätetyp]* in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
et Eesti [Estonian]	Käesolevaga kinnitab *[tootja nimi = name of manufacturer]* seadme *[seadme tüüp = type of equipment]* vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
en English	Hereby, *[name of manufacturer]*, declares that this *[type of equipment]* is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
es Español [Spanish]	Por medio de la presente *[nombre del fabricante]* declara que el *[clase de equipo]* cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
el Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ *[name of manufacturer]* ΔΗΛΩΝΕΙ ΟΤΙ *[type of equipment]* ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
fr Français [French]	Par la présente *[nom du fabricant]* déclare que l'appareil *[type d'appareil]* est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
it Italiano [Italian]	Con la presente *[nome del costruttore]* dichiara che questo *[tipo di apparecchio]* è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo *[name of manufacturer / izgatavotāja nosaukums]* deklarē, ka *[type of equipment / iekārtas tips]* atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo *[manufacturer name]* deklaruoja, kad šis *[equipment type]* atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
nl Nederlands [Dutch]	Hierbij verklaart *[naam van de fabrikant]* dat het toestel *[type van toestel]* in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
mt Malti [Maltese]	Hawnhekk, *[isem tal-manifattur]*, jiddikjara li dan *[il-mudel tal-prodott]* jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
hu Magyar [Hungarian]	Alulírott, *[gyártó neve]* nyilatkozom, hogy a *[... típus]* megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
pl Polski [Polish]	Niniejszym *[nazwa producenta]* oświadcza, że *[nazwa wyrobu]* jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
pt Português [Portuguese]	*[Nome do fabricante]* declara que este *[tipo de equipamento]* está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

ⓈⓁSlovensko [Slovenian]	*[Ime proizvajalca]* izjavlja, da je ta *[tip opreme]* v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	*[Meno výrobcu]* týmto vyhlasuje, že *[typ zariadenia]* spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
ⒻⒾSuomi [Finnish]	*[Valmistaja = manufacturer]* vakuuttaa täten että *[type of equipment = laitteen tyyppimerkintä]* tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
ⓈⓋSvenska [Swedish]	Härmed intygar *[företag]* att denna *[utrustningstyp]* står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

Federal Communications Commission

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to pro-vide reasonable protection against harmful interference when the equipment is operate din a commercial environment. This equipment generates, uses, and can radiate radiofrequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.