Leadtek GPS 9553® Series
Wireless Bluetooth GPS

User Manual

Preface

About this manual

Congratulations on purchasing the Leadtek GPS 9553 Series Wireless Bluetooth Receiver. The GPS 9553 Series consists of the GPS 9553 and the GPS 9553X models. This manual provides information about the product features, applications, and usage. Read this document carefully before using the product to avoid difficulties while using it.

Copyright

Safety instructions

Please read through the following safety instructions carefully to avoid damage to the product and to others while using the product.

- Be aware of traffic safety regulations. To prevent accidents, refrain from using the product while driving.
- Switch off the product during flights, especially during takeoff and landing, to avoid interference with flight communication systems.
- Follow the procedures described in this manual when using the product.
- Use only the accessories provided in the package to avoid damage to the products. If you need to replace any of the accessories, contact your vendor.
- The product does not contain any serviceable parts. Do not assemble or disassemble the product. Please note that unauthorized service to the product will invalidate the product warranty.
- While connecting the product with other devices, refer to the user documentation for the device to avoid damage to the device.
- While connecting the product with other devices, make sure that the they are compatible products.
- Do not use the cigarette lighter adapter while starting the car. A high voltage spike may be generated when you start up the car and cause damage to the product.
- If you need to remove or change the battery, press the tab at the back and slide the battery in the direction of the arrow. When inserting the battery, make sure it is inserted correctly. See “Changing the battery” on page 9.

- Do not leave the GPS 9553 Series in your car unattended. The vehicle may be exposed to direct sunlight which can damage the product.
- When using the product for the first time, use it outdoors to determine your position with accuracy.

Table of Contents

Appendix

Introducing the Leadtek GPS 9553 Series Wireless Bluetooth Receiver

Thank you for purchasing the Leadtek GPS 9553 Series Wireless Bluetooth Receiver. The GPS 9553 Series consisting of the GPS 9553 and GPS 9553X models, is a slim, compact, and lightweight GPS (Global Positioning System) receiver with Bluetooth compatibility. Designed for portable devices such as smart phones and PDAs, the device offers the advantages of the SiRFStarIII chipset with its high sensitivity and low power consumption along with the convenience and ease of connectivity with Bluetooth-equipped devices. Now you can take advantage of the GPS 9553 Series along with a Bluetooth device such as a PDA or smart phone to locate your position with ease and accuracy. The device can also be used with the newly emerging Location Based Services (LBS) applications.

The GPS 9553 Series can be easily integrated with all navigation software applications to indicate your position. It has a standard NMEA output and is compatible with all Palm OS and Pocket PC devices. With support from SiRFLoc software, the GPS 9553 Series also provides SiRFLoc multimode technology. It can determine your position with aid from the carrier networks through Bluetooth-equipped phones or determine it independently from satellite signals.

The SiRFLoc software must be supported by your local mobile service provider.

Features

- Latest SiRF Star III chipset
- 20 channels with All-In-View tracking and SiRFStar high sensitivity software
- Superior sensitivity for urban canyon and foliage environments
- Light-weight design and easy to carry
- Cold/Warm/Hot start time: 42/38/1 seconds
- On/off slide switch
- Two LED indicators to display Bluetooth and GPS status
- Specially designed Li-polymer battery
- Removable battery with back clip for GPS 9553
- Neck strap eyelet for GPS 9553X
- Compatible with Bluetooth-enabled phone and pocket PCs
- Dimensions: 61.4mm x 42.3mm x 25.4mm
- Weight: 45g with battery

Applications

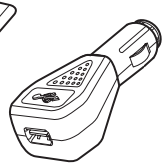
- Hand-held device for personal positioning and navigation
- GPS applications in Bluetooth-enabled portable/personal devices such as PDAs, phones, and so on
- Car and marine navigation
- Fleet management and asset tracking
- AVL and location based services

Package contents

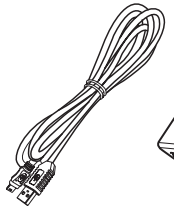
Make sure that your package contains the following items. If any of the items is missing or appears to be damaged, contact your vendor.

Leadtek GPS 9553 Series Wireless Bluetooth Receiver

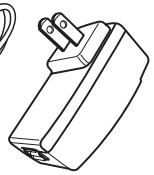
User manual



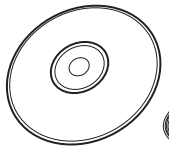
Cigarette lighter adapter



USB cable



Power adapter



Software CD

Neck strap (GPS 9553X only)

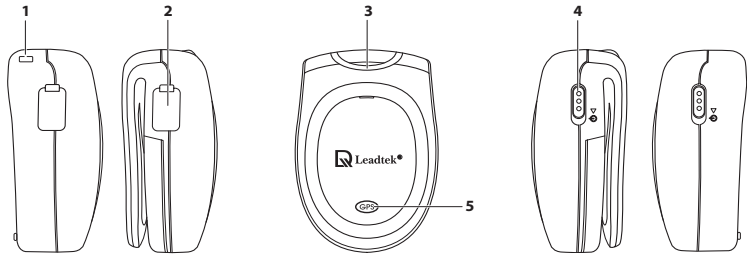
Note

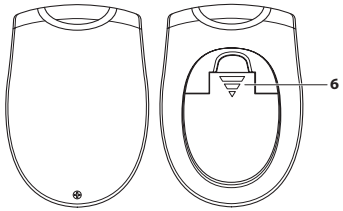
- **The USB cable should only be used to charge the GPS 9553 Series. Do not use it for data transfer or to connect any USB device to the GPS 9553 Series.**
- **The power adapter shown here is for reference only. The actual adapter may vary depending on the region of purchase.**

About the Leadtek GPS 9553 Series Wireless Blue-

tooth Receiver

The GPS 9553 Series is compact and sleek, making it one of the smallest GPS receivers. The following illustration and table provide more information about the product components.





	Component	Description
1.	Neck strap eyelet	Connect neck strap to this loop for easy carrying.
2.	USB connector	Connect USB cable to charge the GPS 9553 Series using the power adapter or cigarette lighter adapter.
3.	Bluetooth indicator	• **Off:** GPS 9553 Series powered off. • **Flashing blue:** GPS 9553 Series powered on and waiting for Bluetooth connection. • **Blue:** GPS 9553 Series currently in use and connected to a Bluetooth-enabled device.
4.	Power switch	Slide to turn the device on or off.
5.	GPS indicator	• **Red:** GPS 9553 Series battery recharging in progress. The LED is turned off after battery is completely charged. • **Flashing red:** Battery has insufficient charge. Recharge battery. • **Flashing green:** GPS positioning in progress. • **Flashing red and green:** GPS positioning in progress and battery insufficiently charged. Recharge battery.

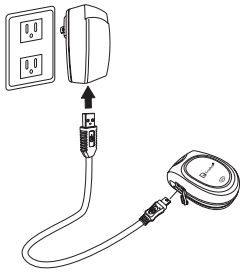
	Component	Description
6.	Battery compartment tab	Press and slide battery to change battery.

Getting started

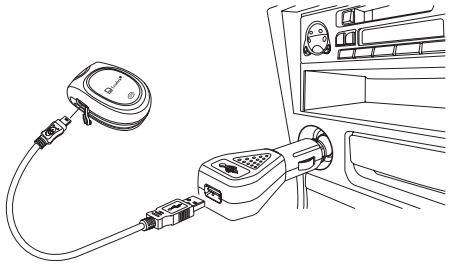
Charging the battery

You can charge the GPS 9553 Series using the power adapter or the cigarette lighter adapter as illustrated:

- Connect the smaller end of the USB cable to the GPS 9553 Series and the larger end to the power adapter. Plug the adapter into an available wall outlet to charge the battery.



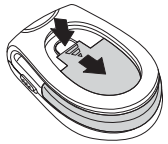
- Connect the smaller end of the USB cable to the GPS 9553 Series and the larger end to the cigarette lighter adapter. Plug the adapter into the car's cigarette lighter jack to charge the battery.



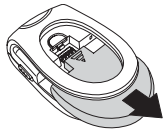
Changing the battery

If you need to remove or change the battery for the GPS 9553 model, follow these steps:

1. Press the tab on the battery compartment at the back of the device and slide the battery in the direction shown.



2. Slide the battery in the direction shown to remove the battery completely.



Note

- **Make sure that you insert the battery correctly when replacing it.**
- **The battery cannot be removed for the GPS 9553X model.**
- **The battery consumes more power when you have the device on continuously.**
- **Operating time:**
  GPS 9553: 300 mAh, 2.5 hours (full charge), 3.5 hours (trickle charge)
  GPS 9553X: 720 mAh, 8 hours (full charge), 11 hours (trickle charge)

Installing the software

The software CD provided in your package contains the **WinFast® Navigator** application which is an application for determining your location using the GPS 9553 Series. It also contains this user manual. Install the Navigator application on your mobile device from the CD.

Note

The USB driver and SD driver included on the disc are not needed for the GPS 9553 Series. You can use them for other GPS products from Leadtek.

To install the CE Navigator to your PDA or smart phone, you need Microsoft ActiveSync installed on your PC. Click the appropriate button to start the installation and follow the instructions on the screen to complete installation.

Using the Leadtek GPS 9553 Series Wireless Bluetooth Receiver

Now you are ready to get your position using the Leadtek GPS 9553 Series Wireless Bluetooth Receiver. Before you proceed, make sure that you have installed the CE Navigator application on your mobile device.

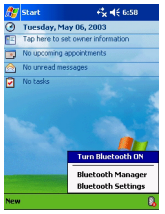
Obtaining your position using the GPS 9553 Series is a two-step process. First, you need to connect to the Bluetooth device such as a PDA.

Second, you have to use the CE Navigator utility to view your position. The following sections describe these steps in detail.

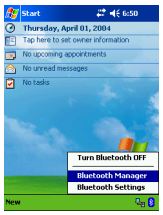
Connecting to a Bluetooth device (PDA)

Follow these steps to create a shortcut to the GPS 9553 Series connection and connect to it from your mobile device such as a PDA.

1. Tap the Bluetooth icon on the PDA's taskbar to view the Bluetooth menu. Tap the **"Turn Bluetooth On"** item on the menu to enable Bluetooth.



2. Tap the Bluetooth icon again and select the **"Bluetooth Manager"** item.



3. From the Bluetooth Manager toolbar, tap **"New | Connect!"** to connect to all Bluetooth devices in the surrounding area.

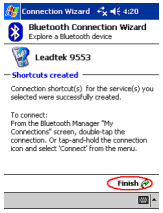
4. Tap **"Explore a Bluetooth device"** to view Bluetooth device services and create a shortcut to them. Click **"Next"** to continue.

5. Tap inside the device selection box to display a list of devices. Click **"Next"** to continue.

6. Tap the **"Leadtek 9553"** icon to view the device services.

7. Select the **"ZV-SPP"** service and tap **"Next"** to create a shortcut to it.

8. Tap **"Finish"** to complete the procedure.



9. From the **"My Shortcuts"** tab, tap the **"Leadtek 9553: ZV-SPP"** icon and select the **"Connect"** option to connect to it.

10. When a connection is successfully established, the shortcut icon turns green.

Using WinFast Navigator

The WinFast Navigator utility enables you to view your position in terms of latitude and longitude, velocity, and altitude. You can also view the positions of the positioning satellites. Make sure that the utility is installed on your PDA as described in “Installing the software” on page 10.

Note

This user manual provides instructions on how to use the Leadtek GPS 9553 Series Wireless Bluetooth Receiver. For more detailed information about WinFast Navigator, refer to the documentation provided with the application.

1. To start WinFast Navigator, tap **“Start”** and then select the **“Navigator”** item from the start menu.

2. The Navigator screen is displayed. Tap **“Tools”** and select **“Connect”** from the menu to connect to the GPS 9553 Series. Alternatively, select the **“Disconnect”** option from the menu when you want to disconnect.

Refer to the following sections to learn how to configure the port setting and use the utility.

Note

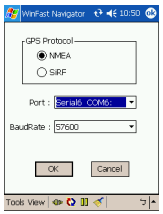
Remember to disconnect the GPS 9553 Series after you have finished using it to release the COM port for other applications or users. Tap View **on the PDA screen and then select** Disconnect **or** Exit **to disconnect.**

Configuring the settings

To use the WinFast Navigator utility with the GPS 9553 Series, you have to set the port and the baud rate as follows:

1. After starting WinFast Navigator, tap **"Tools"** and select the **"Port Setting..."** item from the menu.

2. Select the **"NMEA"** (National Marine Electronics Association) option under the **"GPS Protocol"** box.
3. Select a port for the GPS 9553 Series from the **"Port"** drop-down box. For most PDAs, it is **"COM6"**. Refer to the user documentation of your PDA if you are not sure.
4. Select a baud rate from the **"BaudRate"** drop-down box.
5. Tap **"OK"** to complete the settings.



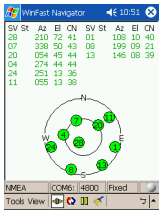
The Navigator screen displays your position when connected successfully.

Viewing the location (Navigation)

When you set the correct port and the GPS 9553 Series is connected successfully, the Navigator screen displays your position. Your position, latitude, longitude, velocity, and altitude are displayed. The navigation window also displays the time (UCT or Coordinated Universal Time), number of satellites used, and the HDOP (Horizontal Dilution of Precision).

If the navigation view is not displayed, tap **"View"** and select the **"Navigation"** item from the menu to display the navigation messages view.

Viewing the signal levels (Signal Level)



WinFast Navigator can display the distribution of the satellites being used by the GPS device. To view the satellite signals, tap **"View"** and select **"Signal Level"**.

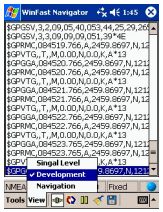
The screen shows all the available satellites distribute around your position. The satellites are represented by colored circles as follows:

- Red: Not connected
- Blue: Connection in progress
- Green: Connected

Details of the available satellites are also displayed on this screen.

Viewing NMEA output (Development)

To view detailed NMEA (National Marine Electronics Association) output, tap **"View"** and select the **"Development"** item.



Appendix

Specifications

Chipset	
GSP3F	SiRF StarIII technology
General	
Frequency	L1, 1575.42 MHz
C/A code	1.023 MHz chip rate
Channels	20
Accuracy	
Position	10 meters, 2D RMS 5 meters 2D RMS, WAAS corrected < 5 meters (50%), DGPS corrected
Velocity	0.1 m/s
Time	1 microsecond synchronized to GSP time
Datum	
Default	WGS-84
Other	Selectable for other datum
Time to first fix (Open sky and stationary)	
Reacquisition	0.1 sec. average
Snap start	1 sec. average
Hot start	1 sec. average typical TTFF

Warm start	38 sec. average typical TTFF
Cold start	42 sec. average typical TTFF
Dynamic conditions	
Altitude	18000 meters (60000 feet) max.
Velocity	515 m/s (1000 knots) max.
Acceleration	5g max.
Jerk	20 m/s^3 max.
Power	
Main power input	5V ± 5%V DC input
Current consumption	0.41W at 3.7V DC (full power), 0.26W (trickle power)
Serial port	
Electrical interface	Two full duplex serial TTL interface
Protocol messages	NMEA-0183 @ 57600bps (default)
Time 1pps pulse	
Level	TTL
Pulse duration	100 ms
Time reference	At the pulse's positive edge
Measurements	Aligned to GPS second, ±1 microsecond

Environmental characteristic	
Operating temperature range	10° C ~ +65° C
Storage temperature range	-20° C ~ +65° C
Physical characteristics	
Length	61.4 mm (2.42 in)
Width	42.3 mm (1.66 in)
Height	25.4 mm (1.00 in)
Weight	44 g (with rechargeable battery)

Limited warranty

Leadtek warrants to the original purchaser of this product that it shall be free of defects resulting from workmanship or components for a period of one (1) year from the date of sale. Defects covered by this warranty shall be corrected either by repair or, at Leadtek's discretion by replacement. In the event of replacement, the replacement unit will be warranted for the remainder of the original one (1) year period or thirty (30) days, whichever is longer.

There are no other oral or written warranties, expressed or implied, including but not limited to those of merchantability or fitness for a particular purpose.

This Limited Warranty is non-transferable and does not apply if the product has been damaged by negligence, accident, abuse, misuse, modification, misapplication, shipment to the manufacturer or service by someone other than the Leadtek personnel. Transportation charges to Leadtek are not covered by this limited warranty. To be eligible for warranty service, a defective product must be sent to and received by Leadtek within fifteen (15) months of the date of sale and be accompanied with proof of purchase. Leadtek does not warrant that this product will meet your requirements; it is your sole responsibility to determine the suitability of this product for your purposes. Leadtek does not warrant the compatibility of this product with your computer or related peripherals, software.

Leadtek's sole obligation and liability under this warranty is limited to the repair or replacement of a defective product. The manufacturer shall not; in any event, be liable to the purchaser or any third party for any incidental or consequential damages or liability in tort relating to this product or resulting from its use or possession.

Safety cautions

The GPS system is operated by the government of the United States, which is solely responsible for its accuracy and maintenance. Although the GPS 15H & 15L products are precision electronic Navigation Aid (NAVAID), any NAVAID can be misused or misinterpreted, and therefore become unsafe. Use these products at your own risk. To reduce the risk, carefully review, and all aspects of these technical specifications before using the GPS 15H & 15L. When in actual use, carefully compare indications from the GPS to all available navigation sources including the information from other NAVAIDs, visual sightings, chart, etc. For safety, always resolve any discrepancies before continuing navigation.

Frequently asked questions / troubleshooting

Q: Why can't I install the **WinFast Navigator** utility on my PDA?

A: WinFast Navigator is a GPS testing application that can be installed directly on most PDAs. If you encounter problems during installation, locate a file called **Navigator.ARM.CAB** in the installation folder. Copy this file to any folder on your PDA and install WinFast Navigator by tapping the file icon.

Q: Why does the GPS positioning fail, even though the satellite signal appears to be normal on my PDA?

A: A possible reason for this is that the GPS has not been used for a while and needs to be reset. Follow the steps below to reset the GPS for positioning.

1. From the **Navigator** menu, tap **Tools | Port Setting...** and set the **Port** and **BaudRate** as described in “Configuring the settings” on page 16. Tap **OK**.
2. Tap **Tools | Command** and select **Cold Start**. Click **OK** to reset the GPS 9553 Series.

Q: Under what circumstances do I have to perform **Cold Start**?

A: If you have not used the GPS for positioning for a period longer than two weeks or if your current location is at a distance greater than 500 km from the previous location of positioning, then you will need to perform **Cold Start**.

Q: Why is the GPS device not found by the PDA map utility program after positioning is completed by the **WinFast Navigator** utility?

A: **WinFast Navigator** is an application that you can use to test the GPS and verify your position. You need to use your own map utility to view your position on a map. After using **Navigator**, you have to disconnect the GPS device in order to release the COM port before using your PDA map utility program for positioning. Otherwise, the COM port will still be occupied by Navigator and the PDA map utility program will not find the GPS device. Make sure you disconnect the GPS device before using your map utility.

Q: Why does the position of the car drift around on the map even when my PDA and GPS 9553 Series are properly positioned?

A: This might be caused by unstable satellite signals or weak signals resulting from heavily blocked areas, which affect the positioning of the car on the map.

Q: Why is there no sign of signal transmission in my map utility program and positioning fails even though my GPS is connected?

A: This might be caused by incorrect COM port settings. Most PDA map utility programs search for GPS device automatically and the GPS device is not found. It is recommended that you set the COM port settings manually instead.

Q: Why can't I get the GPS to position correctly at home or near areas close to windows?

A: The GPS 9553 Series is intended to be used for outdoor positioning and navigation because satellite signals cannot be received with sufficient signal strength indoors. Moreover, it takes a while for the GPS to complete the positioning the first time it is used. Hence, positioning must be done outdoors where satellite signals can be received properly.

Regulatory notices

FCC Class B

FCC ID:I2I LR9553X

This device complies with Part 15 of the FCC rules for class B digital devices FOR HOME OR OFFICE USE. These limits are designed to provide reasonable protection against harmful interference in a residential installation, and are more stringent than "outdoor" requirements. 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.

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 provide reasonable protection against harmful interference in a residential installation.

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This product does not contain any user-serviceable parts. 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 regulation.

CE

It is herewith confirmed that this device complies with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility (89/336/EEC), Low-voltage Directive (73/23/EEC) and the Amendment Directive (93/68/EEC), the procedures given in European Council Directive 99/5/EC and 89/3360EEC.

ITE

ITE is subdivided into two categories represented by class A ITE and class B ITE.

Class A ITE

Class A ITE is a category of all other ITE which satisfies the Class A ITE limits but not the Class B ITE limits. Such equipment should not be restricted in its sale but the following warning shall be included in the instructions for use:

Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Class B ITE

Class B ITE is a category of apparatus which satisfies the Class B ITE disturbance limits. Class B ITE is intended primarily for use in the domestic environment and may include:

- equipment with no fixed place of use; for example, portable equipment powered by built-in batteries;
- telecommunication terminal equipment powered by a telecommunication network;
- personal computers and auxiliary connected equipment.

Customer service information

International Headquarters
18th Fl., 166, Chien-Yi Rd.
Chung Ho, Taipei Hsien
Taiwan (235)
Phone: +886 (0)2 8226 5800
Fax: +886 (0)2 8226 5801
http://www.leadtek.com.tw
E-mail: gpssales@leadtek.com.tw

United States Headquarters
46732 Lakeview Blvd.
Fremont, CA 94538
U.S.A.
Phone: +1 510 490 8076
Fax: +1 510 490 7759
http://www.gpsleadtek.com

Europe Headquarters
Leadtek Research Europe B.V.
Sloterweg 305
1171 VC Badhoevedrop,
Netherlands
Phone: +31-20-4-109-100
Fax: +31-20-4-109-111

Leadtek GPS 9553 Series Wireless Bluetooth Receiver
User Manual
Version C
May 2005

CODE: LR9553
P/N: W0501013