

# bikeAngel

patron of your bikes



INSTRUCTION FOR USE

Dear customer,

thank you for purchasing the intelligent electronic GPS device bikeAngel (*type designation AMBO2*), which serves to protect the health of cyclists in the event of falls or accidents and to monitor and guard bicycles. In order to be able to use this device to the full and be completely satisfied with it, we recommend that you familiarize yourself with its functions and operation.

The bikeAngel system is primarily intended for monitoring falls on a bicycle, for monitoring and guarding bicycles, for security against unauthorized handling and theft. The device should be mounted so that it is not visible at first glance. **The device bikeAngel does not serve for continuous recording of travelled routes.**

The system consists of the following components:

- of the AMBO2 device, fixedly and hiddenly mounted in the bicycle
- of the free bikeAngel mobile application for smartphones with the Android or iOS operating system



## 1. What you can expect from the bikeAngel system

Thanks to the bikeAngel device mounted on your bicycle and the bikeAngel application installed on your smartphone (*hereunder also mobile*) you will have up-to-date information on:

- the state of your bicycle (*guarded, in motion, in alarm, etc.*)
- the location of your bicycle (*on the map directly in your smartphone*)
- the state of the battery of the device,
- the validity of your license

You can also make the above information available to another person, so that he/she can recover you in the event of an accident, locate and check you or provide assistance.

The application is also used to set various other functions, for example, turning guarding on/off or selecting the automatic watch mode. You will find out about unauthorized handling of the bicycle even when the application is switched off, through the notifications of the relevant operating system of your mobile phone. Other interesting and useful functions that we are preparing will be automatically made available to you free of charge via subsequent firmware change (OTA).

## 2. Let's get started

### 2.1. Package contents

In the box you will find everything you need to install the bikeAngel device in the handlebars of the bike:

1. bikeAngel device
2. charging terminal with charging connector



3. batteries with wiring
4. charging cable
5. mounting wire
6. mounting twine
7. sealing material



#### **ATTENTION:**

The bikeAngel device can be mounted in handlebars **with a minimum internal diameter greater than 17 mm and with a smooth internal surface.**

## 2.2. Installation and start-up procedure

For the most efficient installation and start-up, we recommend the following procedure:

- 1) install the bikeAngel application on your mobile phone
- 2) add a new (*first*) device to the application
- 3) assemble the bikeAngel device “on the table”
- 4) connect the charger

During charging :

- 5) pair the bikeAngel device with a mobile phone using BlueTooth
- 6) wait for the device's battery to be fully charged

After fully charging:

- 7) mount the device assembly into the bicycle handlebars
- 8) check the functionality of the device and the application

You can take the first steps in the comfort of your living room (*or elsewhere*), you will only need the bike when assembling the device to the handlebars. More detailed information on putting the bikeAngel device into operation can be found in the following chapters.

## 2.3. Assembly of the device “on the table”

Take out from the box:

1. bikeAngel device
2. charging terminal
3. batteries with wiring
4. charging cable

Connect the bikeAngel device to the cable with one battery; Connect the cable with two batteries to this assembly and connect the charging terminal to the end. Connect the charging cable to any USB source (not included in the delivery) and plug it into the charging terminal. Meanwhile, the green LED on the bikeAngel device will start to flash, indicating the presence of power. The bikeAngel device tries to connect to the server of the bikeAngel system, and when it succeeds (30-120 s), the LED blink changes to double (double blink). Fifteen minutes after connecting the power supply, the LED stops flashing to save battery power.

The batteries are charging and the bikeAngel device has started working. You can proceed to the next steps.

## 2.4. Application installation and first login

Download the bikeAngel mobile application in **Google play** (Android) or in the **App Store** (iOS).

GOOGLE PLAY



APP STORE



After installation, you can register. On the registration screen, enter the following data:

**Name** - identification name of the user. It is displayed in the application, invoices, or notification e-mails. It does not have to be unique (multiple users can have the same name)

**E-mail address** - it must be real. The following messages will be sent to this address:

- welcome e-mail
- e-mails with a request to pay for the license for the next period (*flat rate*)
- e-mails with the invoice
- new user password (on request from the application)
- news and improvements

**Password** - choose at least 6 digits alphanumeric string. For greater security, the system distinguishes between lowercase and UPPERCASE letters.

**Password verification** - the same password is entered to verify identicalness and correctness

**Agreement to business conditions** - it is necessary to confirm the Agreement. The terms and conditions will open in the web browser after clicking on the text. After successful registration, you are also logged into the system. By default, logging in is not necessary for subsequent application launches. However, the login screen will appear

- if you have previously logged out of the application in Settings
- if you are logging in on a different mobile phone (*e.g. when changing your phone*)
- exceptionally also in other cases.

In this case, use the **LOG IN** function. It is necessary to fill in an e-mail address and a password.

**Note:**

Logging in on another mobile phone will automatically log out the previously logged in mobile phone. Only one mobile phone can be active on one account (e-mail address) at a time. One bikeAngel device can be monitored by two mobile phones, as long as they are registered to different e-mail addresses.



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## 2.5. Adding a bicycle to the application

After successful registration, information with the question "You have not added any bicycle yet. Add new?" will be displayed.

By clicking on "YES" it is possible to add a new bike. After clicking on "NO", the main window with the list of bicycles will be displayed, which is initially empty. A new bicycle can be added at any time using the "Add device" button, see more info in Settings (*chapter 3.6*).

After clicking on "Add device", two options will be displayed with which the device can be added:

1. adding using a QR code - after selecting it, the camera will open, with which you need to scan the barcode on the device's packaging. In the next window, you must also enter your bike name.
2. adding using manual data entry:

In the displayed window, you must enter:

**Device identifier (SN):** serial number, which is on the label of the bikeAngel device or is also stuck on the back of the "Warranty sheet" which you can find at the end of this "Instructions for use".

**Code:** the code that is on the sticker of the bike Angel device or is also stuck on the back of the "Warranty sheet" which you can find at the end of this "Instructions for use".

**Name of the bicycle:** which will be displayed in the main window (list of bicycles).

**Please select the type of device** on which you will mount bikeAngel: To increase the clarity of multiple monitored devices, you can select an icon from this list:

- Bicycle
- Motorcycle
- Quad bike
- Mower
- Scooter
- Motor-scooter
- Tricycle

After entering the correct serial number (**SN**) and code (**Code**) this device will be added to the main window, where it will be displayed as one coloured line with the name and other additional information (**Device status line**). After adding a new device, the application typically informs that the bike is not guarded because it is in manual settings. If the battery charging has been connected correctly, this is indicated by a moving image of the battery with a flash. Otherwise, the battery charge status is displayed.

The battery of the device must be fully charged. The application signals a full charge with a permanent green filling of the battery symbol. Lightning means maintenance current from the connected charger.

While charging, it is still possible to pair Bluetooth devices and mobile phones using the procedure described below. We also recommend familiarizing yourself with using the mobile application.

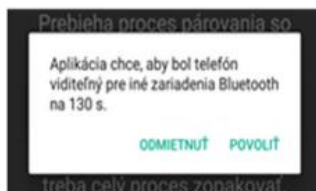
**ATTENTION:**

When the battery is completely discharged, charging may take several hours.

**2.6. Pairing a BlueTooth device with a mobile** ❄

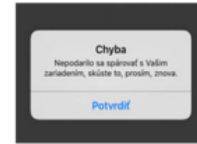
The automatic watch mode is accessible only after pairing a BlueTooth device with the user's mobile. When pairing, the mobile phone must be in the vicinity of the bikeAngel device (*max. 10 m*). Pairing procedure: To start pairing, click on "**Turn on pairing**" in the "**Settings**" section (*chapter 3.6*).

- If you have several bicycles added to the application, select the one with which you want to pair your mobile phone.
- Confirm the information message "Stay away from your bike, the pairing process requires your mobile phone to be within range of the bike".
- **(only for Android)** - An information message will be displayed; The application wants the phone to be visible to other BlueTooth devices for 130 s". Confirm by tapping on "**Enable**".
- **(only for iPhone)** - Confirm the information message "To pair with the device, it is necessary to have the BlueTooth settings open. By confirming this message, a window with phone settings will automatically open.
- In it, you need to go to the BlueTooth settings. Execute desired and wait.
- After a short time (*max. 1 minute*) a window with a numerical code indicating pairing will appear. **The code does not need to be written down or remembered anywhere. Just confirm it.**
- **(for iPhone only)** - return to the application. Wait for another max. 1 minute. Information about successful pairing will be displayed. This completes the pairing and automatic guarding is immediately available. If any of these steps do not occur (*the window with the code does not appear or the information about successful pairing does not appear*), you must end the pairing or wait until it ends by itself with an error message. Then the whole procedure must be repeated from the beginning.



If pairing problems persist, perform the following sequence of steps:

- Remove the bikeAngel device in the application settings (*it is necessary to enter the serial number (SN) that you entered when adding the bike to the app*).
- Wait at least 1 minute
- Re-add the device to the application (*chapter 2.5*)
- Pair the mobile phone (*chapter 2.6*)



## 2.7. Mounting the device to the handlebars of the bicycle

After the battery of the bikeAngel device is fully charged, the notification "**Battery charged**" will appear on the mobile phone. You can disconnect the charging cable and proceed to mounting the assembly of the device to the handlebars of the bicycle. Disassemble the assembly into individual parts, approach the bicycle and mount the entire assembly, straight into the handlebars, according to the video tutorial, the address of which is given in the QR code, or in the video on the website:



[www.bikeangel.eu](http://www.bikeangel.eu)

**VIDEO TUTORIAL:**



After successful assembly, you can start using the bikeAngel system to the fullest.

## 3. Features of the bikeAngel application

You have already seen the main window with the list of bicycles when adding a bicycle (*chapter 2.5*). This window is displayed every time the bikeAngel application is started. You can display the second window with a list of functions by selecting the **Settings** tab marked with the gear wheel icon . You can return to the main window by selecting the **List** .

### 3.1. The meaning of each icon

**Guarding states:**



**Guarding on** - in this state, any movement of the bike will trigger the alarm



**Guarding off** - the bicycle can be used freely, the alarm will not be triggered



**Alarm status** - in the guarded state a movement of the bicycle was recorded



**Unknown status** - the device lost connection with the central server

The reasons can be different, such as a disconnected or discharged battery, loss of GSM signal, device malfunction...



## Guarding regimes:



**Manual mode** Guarding is turned on and off manually through the application. When the key icon is missing, guarding is turned on and off automatically (**Automatic mode**).

## Types of alarm:



**Hand on the bicycle** Indicates touch or shock to the bicycle during guarded state, the bicycle does not move permanently (*e.g. falling from the stand, impact, etc.*)



**Bicycle in motion** The bicycle is currently moving during the alarm (high probability of theft).



**Bicycle fall** Indicates the condition that a large mechanical overload of the bicycle occurred during driving due to a fall or impact.

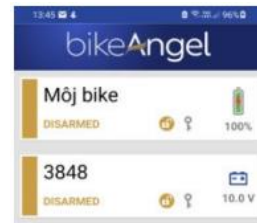
## Battery status:



The battery status indication is displayed differently for different versions of the BikeAngel:

1 - for devices with independent and self-powered power (motorcycle, quad bike, e-scooter, etc.) - displays the voltage of the vehicle's battery in volts (BikeAngel 1)

2 - for devices without own power supply and with battery (BikeAngel 2) - displays the battery charge status in percentage.



**Battery completely discharged.** After the battery runs out, the bikeAngel device will stop working and the bike will stop being guarded. This state is represented by a red battery.







**Charger connected.** The flash indicates charging the battery (the animation symbolizes charging) or maintaining the charged state (*the battery is filled with green color*).





**Unknown status.** The state of charge of the battery is unknown (*lost connection with the device*).


## 3.2. Bicycle guarding

The bikeAngel device contains motion sensors that constantly detect handling of the bicycle, its movement or fall. According to the current settings, the device informs the user (*or another person*) about the current state of the bicycle.

When the bicycle guard indicated by the lock icon  is turned on, an alarm  will be triggered for any movement of the bicycle. The lock icon will change to an alarm icon and in the right part of the status line of the device, a specification of the type of alarm will be added  or .

The mobile phone announces the alarm status with regular notifications, and acoustically when the application is inactive. By confirming the notification, the acoustic indication stops, but the alarm status remains.

Tapping on the status line of the device and selecting the item "**About device**" in the context menu displays information about the device, including the location of the bicycle on the map, which automatically updates according to the movement of the bike. The type of alarm can change over time, depending on what is currently happening with the bike during the alarm. The alarm state can only be cancelled by tapping on the status line of the device and selecting the "**Turn off alarm**" item in the context menu. The device then switches to the original guarding state. When the bicycle guarding is turned off, indicated by the icon , the bicycle can be used freely without triggering an alarm. In the status line, when moving shows the icon .

Arming or disarming can be done manually (**Manual mode**) or let the app do the switching automatically (**Automatic mode**). Manual mode is indicated by the key icon , automatic by its absence. Automatic mode means that the bike is not armed when paired with it. the mobile phone is close to it (*up to approx. 10 m*). When you move away from the bike, the guard is turned on. When you return to the bike, you can leave with it without an alarm. You can monitor the current status of the guard in the bike-Angel application.

Switching guarding modes can be done in the menu of the bike, which is displayed after tapping on the status line of the respective device. The bike menu offers options that are not currently selected.

**Note:**

**The current guarding mode can only be changed when the bike is not in alarm.** If the condition of the bicycle is unknown (*loss of connection with the central server, discharged battery of the bikeAngel device, etc.*), the request to change the condition will be implemented only after the communication between the bikeAngel device and the server is restored.

In the bicycle menu, there is also the option "**Turn off the device**". The bikeAngel device then goes into battery saving mode. The bikeAngel application cannot then determine the current status of the bike or control it in any way. The device "wakes up" just by moving the bike. After waking up, it works in the same mode in which it was turned off. If the bikeAngel device was turned off in guard mode, then it will send an alarm in the standard way in case of unauthorized handling of the bike. In short: **Even when the device is switched off, the bicycle can be fully guarded for a long time.**

### 3. Assistance in the event of an accident / fall of the bicycle

If at any time during the ride there is a large mechanical overload of the bicycle due to a fall or an impact, this information is displayed on the user's mobile using a notification; in the right part of the status line of the device, the icon "**Bike fall**" will also appear. After tapping on the status line of the device, the "**Information about fall**" function can be called up from the context menu, where the warning about the fall can be cancelled or the location of the bicycle can be displayed on the map (*alert will not be cancelled*).

**Note:**

**If you want someone else to receive this message about the fall and be able to help you** or at least call you to be sure if you need help, this person must install the bikeAngel

application and add your bike to the list of devices. Then he/she becomes a full-fledged user of the bikeAngel system and will also receive all notifications about the bikes he has added to the list. The number of users who have the same bike added is limited to two.

### 3.4. Device battery management

One of the most important parameters of any autonomous GPS monitoring system is the life of the power battery. That's why we want to inform you about the battery life of the bikeAngel device, as well as the possibilities of using the battery capacity as efficiently as possible. The typical battery life of the bikeAngel device in different operating modes is shown in the following table.

<b>Mode</b>	<b>Durability approx.</b>	<b>Note:</b>
Driving	24 hours	permanent non-stop driving
Standing	6 days	automatic guarding mode
Standing	10 days	manual guarding mode
Shutdown	5 months	long-time storage

#### **Note:**

The data apply to the standard supplied battery consisting of three parts. The bikeAngel device monitors the state of charge of the batteries and informs about it through the status line of the device in the bikeAngel application with the icons mentioned in chapter 3.1.

#### **TIPS:**

- If you are on a multi-day hike, charge the bikeAngel device at least every other night.
- If you have a bike locked in the basement or garage and you want to keep it guarded for a long time without the need to charge it, turn off the bikeAngel device via the mobile application in guarded mode. The bikeAngel system will guard your bike for several months. In the event of unauthorized handling or shaking of your bicycle, the device will automatically start up and notify you of the event within a minute.
- When the bike is parked for a long time, connect the bikeAngel device to the charger and use unlimited monitoring regardless of battery life. The charger is fully intelligent and self-regulates and starts charging the battery.

### 3.5. Settings

The settings are displayed after clicking on the gear wheel icon in the lower right part of the screen. The following options will appear:

- **Add device**

This function allows you to add a new bike to the list. When starting the application for the first time, it is necessary to start with this function, later it is possible to add further bikes (*chapter 2.5*).

- **Remove device**

With this function it is possible to remove a bicycle from the list. After selecting a bike to delete, it is necessary to enter the correct serial number as a verification before accidentally deleting the bike. You can find it in the window "About device".

- **Eshop bikeangel.eu**

By clicking on this menu item, you will open the eshop bikeAngel.eu, where, among other things, you can find various other bicycle accessories and spare parts for bikeAngel.

- **Instructions and FAQ**

This menu item is used to display instructions for bikeAngel and the FAQ section on the bikeAngel.eu website

- **About the user**

The following information is displayed here:

- registration name entered during user registration in the bikeAngel system
- e-mail address entered during registration
- date of registration
- SW version

- **Change password**

With this function it is possible to change the login password. It is necessary to enter the original password and 2x new password (*to confirm the correctness*).

- **Log out**

This function allows you to log out of the system. When you start the application again, a welcome screen will appear with the option to log in or register a new user.

### 3.7. Main screen

After tapping on the selected device a menu with functions that can be used on the selected device is rolled out below the line with the device. The following icons are displayed in the top line of the menu:





Opening the menu with functions:

- **Turn on guarding** - turns on the manual guarding mode. It is indicated by a green band and a key in the status line of the device. The device is guarded, and any detected movement will cause an alarm. The device remains in this state until switching to another mode.
- **Turn off guarding** - turns off the guarding mode. In this mode, the device only indicates movement with a movement icon, but does not report an alarm. The device remains in this state until switching to another mode.
- **Turn on automatic mode** - switches the device to automatic mode. This mode is only possible after the Bluetooth device has been paired with the phone. If the paired phone is in BlueTooth range, the device is unguarded (*yellow colour*), if the paired phone goes out of BlueTooth range, the device will automatically switch to guarded mode (*green color*) and every movement will trigger an alarm.
- **Turn off automatic mode** - turns off automatic mode and the device goes into manual mode (*indicated by a key in the status line of the device*). The device will remain in the state (*armed or unarmed*) in which it is currently in automatic mode.
- **Turn off the device** - turns off the device. The device disconnects from the main server, and it is not possible to enter further commands. The device can only be turned on again by shaking or moving it. If the device is switched off in guarding mode, when it is turned on due to movement, an alarm will be triggered at the same time (*thanks to this, the object is guarded even in the switched off state*).
- **My Rides** - will display a screen with recorded routes. More detailed description in the *Tracking* chapter.



Window with information about device:

- **Battery** - shows the state of charge of the device's battery
- **Last position** - shows the time of the device's last known position. If the device is not in motion, the position is not updated due to energy saving in the batteries, and the time of the last position may be several days old. Another reason for the possibly older time of the last position may also be the location of the device in a place without a GPS signal (*underground cellar, garage, ...*)
- **ID (SN):** device serial number. It is necessary when signing off the device from the phone, as well as during technical support.



- **License expiration date** - license expiration time. If the license extension is not paid after this date, the device will be automatically deactivated.
- **Paired with the phone** - shows whether the BlueTooth pairing of this phone with the device has been successful. Only in such a case can the automatic mode be activated.



Shows the last known location of the device on the map. The map is displayed reduced directly in the application, it can be moved, zoomed in and out.

**TIP1:**

After tapping on any place on the map, the map will be displayed enlarged in a separate window.

**TIP2:**

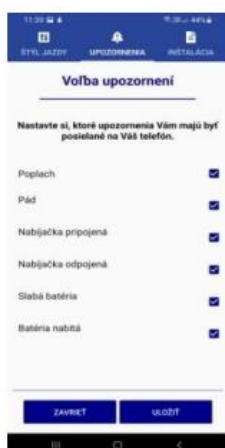
Tapping on the button "**Navigate me to it!**" launches the navigation on your mobile, which will navigate you to the last known location of your device.



Displays a window that allows you to set up the device. This window consists of three tabs:

Fall intensity setting - It is possible to set the fall detection intensity in three levels.

- **Sensitive level** - the fall will be indicated even with gentler impacts. Suitable for driving on straight roads
- **Level medium** - normal setting for normal driving
- **Level extreme** - the fall will be indicated only in case of a really intense impact. Suitable for driving on difficult mountain terrain.

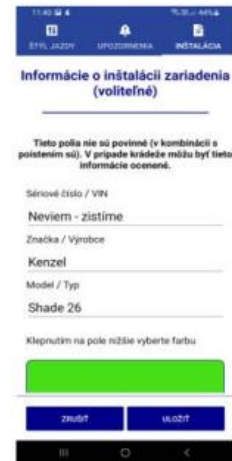


Settings for notifications sent to the current phone:

- **Alarm** - option to turn on or off notifications about the alarm
- **Fall** - option to turn on or off notifications about the fall of a bicycle or motorbike.
- **Charger connected** - option to turn on or off notifications about charger connection

- **Charger disconnected** - option to turn on or off notifications about disconnecting the charger
- **Low battery** - option to turn on or off notifications and battery discharge
- **Battery full** - option to turn on or off notifications about pin charge of the battery

**Installation** - information about the bike in which the BikeAngel device is installed. This information is optional for the functionality of the system but is useful if the BikeAngel device is used as a supplement to bicycle insurance.



### Tracking

After selecting the Tracking function, a screen with a list of recorded routes opens. The screen is divided into three tabs:

- **List** - a list of ride segments and their information
- **Map** - a map for displaying selected segments
- **Summary** - displaying statistical information about selected segments
- **Share** - exporting selected parts of the ride for display in other applications

The tab "**List**" is always displayed first with a table of recorded routes. The routes are arranged in blocks according to dates and are marked with the start time.

Each block of rides represents one day with rides. At the beginning of each block there is basic summary information about the rides on the given day:

- Day of the week and date.
- Total distance travelled within the day
- Total ride time for the day
- Total elevation gain (*difference between the highest and lowest altitude reached on the given day*)
- Maximum speed reached on the given day
- Average speed for the given day

This information is followed by the individual segments of the ride, sorted by time from the most recent to the oldest ride.





There is a green square in front of each driving segment, which allows you to mark the segment by tapping your finger. In this way, it is possible to mark certain segments of the journey. In the lower part of the block of rides there is a command for displaying selected segments on the map (*Show selected rides*).

If the user does not mark any segment, this command is used for displaying all ride segments on a given day (*Show all day's ride*).

Information that is displayed about each ride segment in each row of the segment table:

- Start time of the ride segment
- Distance travelled within the segment
- Duration of the segment



The daily ride is divided into segments automatically, the bikeAngel system divides the ride into two segments if the device is stationary (*without movement*) for longer than 5 minutes.

You can display selected segments of the ride on the map in two ways:

- Tapping on the command "*Show selected rides / Show all-day driving*"
- Tapping on the icon "Map" in the upper part of the screen

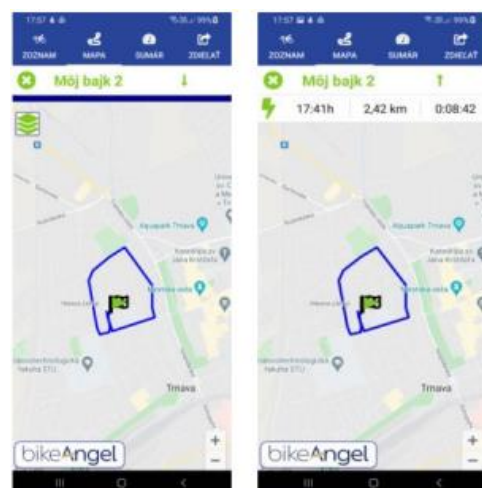


Display on the map is only possible if at least some driving segments are selected in the "List" tab.

After this action, the display switches to the **Map** tab where individual selected segments will be displayed on the map. The segments are shown by a thin blue line on the map, the beginnings and ends of the segments are depicted with red marks.

Segment details can be viewed by tapping on the red separator markers. The map can be switched to three different formats according to the habits of using Google maps:

- Standard map
- Satellite map
- Terrain map





In the upper part of the map there is a line with the name of the device, next to which there is a green arrow. After tapping it, the details of the displayed segment are displayed (*their description matches the descriptions of the rows in the table of the "List" tab*).

The "Summary" tab displays statistical information about the selected driving segments. This tab cannot be displayed without selecting the segments in the "List" tab either. The following information is displayed in this tab:

- **Duration** – total duration of selected ride segments. In the right part there is displayed an exact start time and end time of the selected segments' block
- **Distance** – total travelled distance of the selected ride segments
- **Burned calories** – estimated burned calories when completing the selected bicycle ride
- **Highest point** - highest altitude reached on selected segments
- **Lowest point** - lowest altitude reached on selected segments
- **Elevation graph** - shows the graph of altitude over time during the ride
- **Maximum speed** - maximum speed on selected segments
- **Average speed** - average selectable speed early segments
- **Speed graph** - graph of speed over time displayed for selected speeds. 4 different speed intervals are distinguished by colour and are described below the graph.

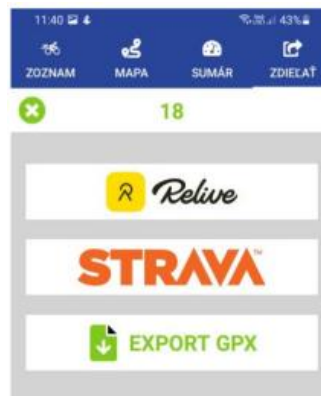


In the "Share" tab, the segments of the ride selected in the first tab can be displayed in other applications:

**Relive** - after tapping, the procedure for displaying the selected rides in the Relive

**Strava** - after tapping, the login screen of the Strava portal will be displayed, where it is possible to log in and view the ride

**Export to GPX** - after tapping, a window will appear for saving a GPX file with information about the selected route to the phone's file system. The GPX file can be opened in many other applications and web services to display the route on various maps (e.g. Google Earth).



### 3.8. And something more

If you have a smart watch connected to your mobile phone with the bikeAngel application, set up notification forwarding, and you will see all messages from the bikeAngel application directly on your wrist.

All our devices and their correct functionality are checked by our service technicians.

Visual inspection

GPS signal

GSM signal

Bluetooth connectivity

Battery voltage

Quality control performed on:

Signature of service technician:

*Made in Slovakia by:*

INFOCAR a.s.  
Račianska 30/A  
831 02 Bratislava  
Slovakia

[info@bikeangel.eu](mailto:info@bikeangel.eu)  
[www.bikeAngel.eu](http://www.bikeAngel.eu)



#### TECHNICAL PARAMETERS OF THE AMB02 DEVICE:

Parameter	Value
Supply voltage	3.7 V DC
Supply current	5 - 80 mA
Temperature range	-35° - +75° C
GNSS specification	GPS L1 , GLONASS L1 , SBAS , QZSS , A-GPS, EGNOS , WAAS , GAGAN , MSAS
Cold start GNSS	< 35 s
Warm start GNSS	1s
GNSS sensitivity ( <i>position search</i> )	-149 dBm
GNSS sensitivity ( <i>position tracking</i> )	-167 dBm
Position accuracy	< 2.5 m
Velocity measurement accuracy	< 0.1 m/s
GSM specification	Quad-band GSM 850/900/1800/1900MHz, Class 12 multi-slot GPRS
GSM transmission power	Class 1 / Class 4
Bluetooth specification	BT 3.0/4.0, SPP/HFP/GATT/FMP/PXP profile
Motion detection sensitivity	0.1 G
Charging current	0.3 A
Batteries	3x 14650, 2040 mAh
Battery temperature range	0- + 45° C charging, -20° - +60° C operation
Charging time	Approximately 6 hours