

NaviEye II User Manual

Manual Version 1.3

Software Version 1.1.0

Hardware Version 1.1

Background:

Thank you for purchasing NaviEye II, which uses the GPS and GLONASS (Global Positioning System and Globalnaja nawigacionnaja sputnikowaja sistemiema - satellite systems that can provide information about exact position in the world) to determine the exact geographical position of the user. It is designed for people who are blind or partially sighted as an aid in orientation and surrounding areas.

Reminder:

NaviEye II is a complementary device informing the user where he is located, within the limits set by the terrain and GPS/GLONASS signal in the area, the conditions for receiving signals from the satellites and the accuracy of the coordinates of the satellites in the Earth's atmosphere. It does not remove the need to adhere to safe movement practices with a cane or a guide dog.

Disclaimer:

One of the NaviEye II components is a GPS/GLONASS receiver which systems are wholly owned by the Government of the United States/Russian Federation. Owners of these systems thus assume full responsibility for the accuracy and reliability of GPS/GLONASS positioning systems. The systems can be modified at any time, without prior notice, which is associated with possible changes in their characteristics. GPS/GLONASS signals may not be available at all times, especially in tunnels, indoor, built-up urban areas with high buildings or in dense forests. They can also be unavailable or there can be a significant error in the areas of operation of the US or Russian Federation armed forces.

Using NaviEye II may be subject to restrictions on aircraft, in hospitals, public buildings, government offices, laboratories, etc. It is in such places comply with the relevant rules in this matter.

Do not allow small children to play with the device. It contains elements that can endanger children's health.

The device must be stored away from heat sources such as radiators. Leaving the device in place of intense sunlight should, if possible, be avoided. Excessive heat can not only deform the case but also damage the battery -

leading to the destruction of the device. The situation does not apply to the case of normal use of the device on a sunny day.

The housing is not suitable to use it in the case of heavy rainfall without additional protection. Do not expose the device to direct contact with water in any form (rain, flooding, etc.). The design of the keyboard and the top side of the device may be in contact with a small amount of moisture (light rain) but is not waterproof. It is particularly important to protect the speaker, integrated microphone and connectors on the front of the device.

GPS/GLONASS receivers used in the device are partially susceptible to electromagnetic interference in the range of the operating frequency of the system (about 1.6GHz). Avoid placing mobile phones in the vicinity of NaviEye II during navigation. The same should be followed when using equipment with radio interfaces or Bluetooth® wireless technology.

All product names and services mentioned herein may be trademarks or registered trademarks, in which case they are property of their respective owners. Maps and address data come from the OpenStreetMap project, based on the **ODbL** open license.

The software described in this manual and included on semiconductor memory of the device or any other media is to be considered as software for the **NaviEye II** device and, is fully owned by the Manufacturer or third party license-holders. It is protected by copyright, thus cannot undergo reverse-engineering, be modified, sold or reproduced in any form. In addition, the purchase of the device should not be, in any event deemed to grant licenses, copyrights, or patents belonging to the Manufacturer or other third-party companies. It is an ordinary, non-exclusive, non-patent granting authorization for use, which results in an obvious manner by operation of law in the sale of the product. Thus, it cannot undergo re-engineering or reverse engineering.

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1. Description of buttons and connectors

- **on/off** (small, concave button in the top right corner of the device)
- **favourites** (button marked with an asterisk, below the **on/off** button)
- **help** - dynamic support at every level of the device. Pressing it gives the current position in the menu. A long press (or multiple long presses) gives extended information about the currently selected functionality (button marked with a man figure, located below the **favourites** button)
- **back** (button marked with an open circle, below the **help** button)
- **voice control** (the biggest button marked with the microphone, it is located in the lower-right corner of the device)
- directional buttons (**up**, **down**, **left**, **right**) depending on the position in the menu have different functions (the buttons with triangular directional arrowheads, situated in the form of a cross on the left side of the device)
- **OK** - approving the execution of the function (the button marked with the tick, similar to ones from the task list. It is located in the middle of the directional buttons)
- on the front panel there are the **headphone** and **microphone** jacks, positioned to the right of the front panel (a microphone jack is located on the edge when viewed from the right). Right next to it there is a headphone jack (stereo). On the opposite side of the device there is the micro USB port, and next to it on the left the "hard" reset hole, for use in the event of a device lock-up during normal operation.

2. Operating the menu by using the keyboard

Notice: The device distinguishes between short and long keystrokes

- to confirm an action, use the **OK** button
- navigate the list of supported functions using the **left/right** buttons
- directional buttons **up/down** are used to increase or decrease the volume level. Indicated by a corresponding: Level 0 – muted, 1, 2, 3, 4, 5, 6, 7, 8, 9
- **undo/exit** button to exit the menu to the upper level. A long press let's you come back to the top of the list of functions (so-called idle state)
- **voice control** button is used to activate the voice recognition and control enabling use of the device with spoken keywords. **Activating the microphone and the end of recording is signalled by an audio signal.**

3. Voice Control

- **Important!!!** To activate this function it is necessary to hold microphone button (bottom right corner of the device) during delivery of the desired command or address. Speech recognition is active only after a short beep sound while keeping the **voice control** button pressed.
- Voice control commands are issued using the keywords given in the tables available in this manual. See section 4 of this manual.

4. **Keywords** - used for voice control. Each keyword is interpreted by the device as a command to perform an action (function) associated therewith.

Global – always active commands	
Keyword	Meaning
localize	Gives the current device/user location
volume up	Increases the volume
volume down	Decreases the volume
next	Moves between items in the menu
previous	Moves between items in the menu
time hour	Gives the current time
date	Gives the current date
select	Approval of current selection
turn off switch off power down shut down	Turns the device on or off
battery battery level battery state	Information about the level of battery charge

Idle – device mode selection	
Keyword	Meaning
localize	Gives the current device/user location
navigate	Use the navigation functions
audio player audio player music play music	Start the audio player
books book reader	Start Book Reader
recorder voice recorder dictaphone	Start Dictaphone
calendar schedule	Open the Calendar
alarm clock alarm clock	Open the Alarm
compass	Start the Compass
settings	Enter the Settings menu

Address search	
Keyword	Meaning
next	The transition to do next found address (corresponds to the right key)
previous	Go to the previous found address (corresponds to the left key)
yes accept o.k.	The approval/confirmation of the selected address (suggested by the device)
no find search	Transits from the suggestion list to voice search

Navigations	
Keyword	Meaning
localize	Provides information about the addresses passed on the way
favourites	Provides information about the favourite points passed on the way
turn direction	Gives the direction in which to move to get to your target
distance	Gives you the distance to the next waypoint

Working with files	
Keyword	Meaning
next	Go to the next file/directory (same as right arrow)
previous	Go to the previous file/directory (same as left arrow)
select yes play	Confirms selection
enter go in	Enters the currently chosen directory
parent go up	Exits the directory (same as back button)

Audio Player / Book Reader	
Keyword	Meaning
next skip	Go to the next file (same as right arrow)
previous	Go to the previous file (same as left arrow)
pause	Pause audio playback
unpause resume	Resume to the audio playback
stop	Stop playback

Dictaphone	
Keyword	Meaning
add record	Add a new recording
play browse	Browse recorded voice notes
Viewing the recorded notes: see Working with files	

Alarm Clock	
Keyword	Meaning
add add alarm add an alarm	Add a new alarm
Commands available only while having an alarm selected:	
delete delete alarm	Delete an alarm
edit edit alarm	Open the Edit sub-menu
edit time edit alarm time	Edit the time of the alarm

Alarm Clock		
edit description edit alarm description	edit alarm	Edit the voice description of the alarm
edit repetition edit alarm repetition	edit alarm	Change the alarm repetition

Schedule/Calendar		
Keyword		Meaning
browse browse events		Access the list of added events
today today's events		Access the list of today's events
add add event add an event		Add a new event
Commands available only while having an event selected:		
delete delete event		Remove current event
edit edit event		Open the Edit sub-menu
edit time edit event time		Edit the time of selected event
edit date edit event date		Edit the date of the selected event
edit description edit event description		Edit the description of the selected event
edit repetition edit event repetition		Change event repetition

5. Turning the device on or off

- To turn the device on, press and hold the **on/off** button for 3 seconds. After another 10 seconds, you will hear a **device starting** message. Then wait for the **device ready** message.
- To turn off, press and hold the on/off button until you hear the message **shutting down**.
- To switch off using voice commands please say **turn off**. In order to confirm say **turn off** or **yes**.

6. Available functions

- **localize** - give the current position of the user
- **navigate** - navigate to the location selected on the map
- **audio player** - plays audio files stored on the built-in internal memory
- **book reader** - allows you to play books in audio format (mp3, wav) with bookmark support
- **voice recorder** - allows you to record voice memos for general use. The files are stored in WAV format
- **calendar** - here you can, add events, add notifications, view existing events, edit and delete them
- **alarm (clock)** - a function that allows you to set alarms just like a traditional watch or phone
- **settings** - here you have access to basic settings like: map, date, time zone, language option, gender of the voice synthesizer, voice speed and battery level, serial number, compass calibration and adjustments of the messages heard during navigation

- **compass** - gives information which direction device/user is facing
- **storage mode** - connect to your computer and copy files or update the software
- **own points** with sound descriptions. Important: You can use saved points as navigation destinations. Simple recording, viewing, editing and starting the navigation.

7. LED signals

LEDs are located in the upper left corner of the device at the level of the on/off button. Left (red) LED indicates battery and charging status, right (green) the state of the current GPS positioning.

- red LED (left):
 - ◆ no light: device is off
 - ◆ standard light: normal operation of the device
 - ◆ pulsating glow: battery low; also during normal charge process
 - ◆ fast flashing: critical battery level. battery charger connection required
- green LED (right)
 - ◆ no light: no fixed position
 - ◆ pulsating glow: starting the device
 - ◆ steady light: GPS position acquired.

8. Battery level messages

- The user is informed about two substantial battery charge states:
 - ◆ **battery low** is a state of about 30 % of the battery.
 - ◆ **battery level critical** is the state about at 10% of the battery charge, after which the device switches off automatically when the battery charge level drops to 0.

These messages are repeated every 10 minutes.

- After connecting the battery charger you will hear the message **charging**.
- When battery charging completes, you will hear the message **battery charged**.

9. Charging the device

To charge the battery, the device must be connected to a supplied charger using the USB cable. Charging will start automatically. If the battery was fully discharged turning on the device is only possible when you connect the charger and wait for about 3 to 5 minutes. If the device was left fully discharged for a prolonged period of time, this time may be extended up to 20 minutes. You can also use a computer's USB port to charge the device, but the charging time in this case may be much longer. The Manufacturer is not liable for the consequences of using chargers other than the one supplied.

Operating the NaviEye II

1. Localize

By pressing the **OK** button you will receive information about the nearest point. It will be one of the points on the map or nearby point from the favourites list, if any is nearby.

[to use voice commands say **localize**]

2. Navigate:

Possible choices: "**To address**" or "**To previously selected point**".

Press the **OK** button to enter the destination address, first choose the city, then the street and in the end building number.

There is also the option to select a point from the list of previously used destinations (up to 20 previous points).

OK button pressed during navigation will give the nearest known location on the map. Long press the **OK** button during navigation to get the location of the nearest **favourite point** (if located within the notification distance. To set the distance: see section 8).

Short pressing the **right arrow** will give you what we need to do to get to the next step. Similarly, pressing the **left** during navigation gives you the distance to the next point on your route.

Long pressing the **left** arrow gives you the distance to your destination.

Long pressing **up arrow** opens a navigation sub-menu, where you can recalculate the route, set the interval between the voice prompts the distance in which the next point is treated as reached (setting is active only during the current navigation session).

Long pressing **down** arrow gives the current time.

Back button ends navigation.

Note: If compass has not been calibrated before starting the navigation device will force its calibration. See also: compass calibration, point 8.2.

[to use voice commands say **navigate**].

2.1. Selecting a city:

The device always prompts the nearest city, taking into consideration the current or last acquired location of the user.

Left/right buttons cycle through the list of cities suggested by the device.

OK button [or voice: **Yes**] confirms the selection of the city as destination.

Back button [or voice: **No**] goes to the city voice search (message: **find city**).

Speak out the name of the city without the use of additional keywords (for example: **London**). The device will ask for confirmation by pronouncing the name: **London?** Controls are the same as in the list of suggestions.

2.2. Selecting the street:

The device always prompts the nearest street after the user has selected the city he is currently residing in.

Otherwise, it goes straight to the voice search.

Left/right buttons cycle through the list of the streets suggested by the device.

OK button [or voice: **Yes**] confirms the selection of the city as destination.

Back button [or voice: **No**] goes to the street voice search (message: **find street**).

Speak out the name of the street without the use of additional keywords (for example: **Regent Street**). The device will ask for confirmation by pronouncing the name: **Regent Street?** Controls are the same as in the list of suggestions.

2.3. Selecting the building number:

In building search the device automatically switches to voice search (message: **find building**).

Speak out the number without the use of additional keywords (for example : **Eleven**). The device will ask for confirmation by pronouncing the number: **Eleven?**

Left/right buttons cycle through the list of the building numbers suggested by the device.

OK button [or voice: **Yes**] confirms the selection of the building as destination.

Back button [or voice: **No**] goes to the building number voice search (message: **find building**).

3. Dictaphone:

Press the **OK** button to start recording. Pressing any key during the recording finishes recording.

To listen to the recordings: while being in the voice recorder sub-menu, browse with the **right/left** arrows and confirm by pressing **OK** button.

To delete a voice note while the list of voice notes press and hold **up** arrow, to remove the current note confirm with **OK** button, then press **left/right** arrow and confirm again.

[to use voice commands say **dictaphone**].

4. Audio Player:

Press the **OK** button to choose file or directory.

During playback, the **OK** button pauses or resumes the playback.

Left/right arrows can be used to navigate between songs.

Press **exit** button to stop. Long press the **exit** button to exit the player.

[to use voice commands say **audio player**].

4.1 Working with files:

Pressing the **OK** button selects a file.

Left/right arrows are used for browsing through the list of files.

4.2 Working with directories:

Pressing the **OK** button enters the directory.

Long press the **OK button** to start playback of the selected directory.

4.3 Removing files and directories

To remove the currently selected file/directory in the list of files/directories, long press the **up** arrow, confirm intention to remove the current file/folder with the button **OK**, then use the **left/right** arrows to confirm the deletion.

5. Books reader:

Pressing the **OK** button selects the directory.

Each book must be placed in a separate directory.

During playback, the **OK** button pauses or resumes playback. **Left/right** arrows can be used to navigate between files/chapters in the directory. Press the **exit** button to stop playback. Long press the **exit** button to exit the player.

[To use voice commands say **books**].

5.1. Working with directories:

Press the **OK** button to enter the directory.
Long press **OK** button to start playback of the entire directory.
Note: The book operates on directories and not on single files.
There is no way to play a single file outside of a directory.

5.2. Removal

To remove the currently selected book from the list of directories, long press the **up** arrow, confirm with **OK** button, then use **left/right** arrows to confirm the deletion.

6. Calendar:

You must enter in the proper order: year, month, date, time, voice description (your own recording describing the event).
Press the **left/right** arrows to move up or down by one (year, month, day) on the event list.
Long press the **left/right** arrows to move up or down by 5 (years, months, days) on the event list.
You can set the event as repetitive or not. You will hear the message: **event added**.
[to use voice commands say **calendar**]
To delete an entry using voice commands in your calendar while having an entry selected say **delete** and confirm again saying **delete** or **yes**.
In case you do not want to delete that entry say **no**.

6.1 Repetition:

Daily - repeat the event every day.
Days of the week - repeat the event on selected days of the week.
Weekly - repeat the event every week or selected number of weeks.
Monthly - repeat event every month of every selected number of months.

6.2 Enter a description:

Event description is a recording - maximum length is 10 seconds.
Pressing any key finishes recording.

6.3. Browsing:

Today's events - here you will find entries for the current day.
View events - press the **left/right** arrow to jump by one day.
Long press of **left/right** arrow to jump to the next or previous month.
OK button selects a particular day.
Calendar view of the day - press the **left/right** arrow to jump by one entry.
Long press **left/right** arrow to jump by five entries.
Long press **up** arrow opens edit entry sub-menu.

7. Alarm clock:

You must enter in the proper order: hour, minute, repetition (repeat daily, on specified weekdays, or one time alarm), voice description.
Alarm description is a recording - maximum length is 10 seconds.
Left/right arrows are used for browsing the existing alarms.
OK button activates or deactivates the alarm
Long press **up** arrow to edit/remove the alarm.

Notice! Using edit/remove functions requires additional confirmation - press the **OK** button.
[To use voice commands say **alarm**]
To remove an alarm using voice commands say **remove** and confirm again saying **remove** or **yes**.

In case you do not want to remove that entry say **no**.

7.1 Hour selection:

Press the **left/right arrows** to jump one hour. Long press **left/right arrows** to jump five hours.

7.2. Minute Selection

Press **left/right** arrows to jump one minute. Long press **left/right** arrows to jump five minutes.

7.3. Repeat:

Daily - repeat the alarm every day.

Days of the week - repeat the alarm on certain days of the week.

No repeat - single alarm, without repetition.

7.4. Enter a description:

Alarm description is a recording - maximum length is 10 seconds.

Pressing any key finishes recording.

8. Settings:

In this menu, you can get information about the level of battery charge, the device (software version, serial number), change the language settings (language, gender, voice, speech speed), set the date, time zone, and calibrate the compass.

Warning: Changing the language or voice gender requires a restart of the device.

[to use voice commands **settings**].

8.1. Map:

In this menu, you can check what map is currently loaded and change the loaded map.

8.2. Calibrating the compass:

All devices have factory-calibrated compass, however if you receive erroneous information about the direction during navigation you can re-calibrate the compass.

To calibrate the compass select **Compass calibration** in the settings menu. You will hear a brief statement describing the process. Rotate the device around all axes for about 15-25 seconds. The device will notify you when the calibration has finished.

9. Compass:

For information on the geographic directions use compass function, press OK button and then rotate the device.

To re-calibrate the compass, long press the **up** arrow (see section 8.2).

[to use voice commands say **compass**].

10. USB Connection:

You have a choice of two modes: **copy files** and **update**.

Copying files can be used if you wish to save your files in the devices memory eg. music or books or remove stored files in way you do when you use a flash drive (memory stick). The files of particular types should be saved in the appropriate directories in the device memory. For example: mp3, wav, ogg and similar should be saved in music directory, book directory is for audio books, maps in maps.

The user can set up any folders on the device, but music and books must be put in the appropriate pre-created directories. Only such a structure of files/directories enable correct operation of the device.

Warning: The upgrade option should be used with care, using only the files provided by the manufacturer. The manufacturer is not liable for any damage resulting from attempts of using the update files from other sources.

11. Dedicated favourites button

After pressing the button you can add or change description of your favourite points or use the navigation features based on such points. Short press **Favourites** button to enter the favourite points menu.

After entering the favourites menu use **left/right** arrows for browsing favourite points. Pressing the **OK** button sets the selected point as the target. This is equivalent to starting the navigation to the selected point.

Long pressing the **up** arrow or **OK** button enters the edit selected favourite point option where we can change the audio description to obtain information about the geographical coordinates or remove unnecessary point.

While in the favourite points menu, long pressing the **Favourites** button either from your current location or by selecting an address from the map (see 2.1, 2.3 and 2.3). After selecting the location you will be prompted to provide a voice description of the newly added point (up to 10 seconds, pressing any button ends the recording earlier).

The number of stored favourite points is limited only by the available memory in the device.

12. Updates

Update files can be downloaded from our website at www.migraftech.eu after logging in. The first log-in will require registration of the device - its serial number and basic personal information will be needed.

To update do as follows:

1. After downloading the file, save it locally on your computer by selecting e.g. desktop as a storage location without changing the file name.
2. Connect NaviEye II to the PC using the included USB cable.
3. Select the **Storage mode** menu option and then update.
4. Use explorer to find NaviEye II on the list of connected external devices.
5. The update files saved on the desktop should be moved or copied to the **update** directory located in the internal memory of the device.
6. Remove (eject) the storage device from your computer using the standard procedure for safe removal (ejection) of a USB device.
Warning: Do not disconnect the USB cable from the PC or connect it to the supplied charger. The update will not start if the device isn't connected to a power source.
7. Press and hold the button Back for one second starting the update process.
8. The device will check the correctness of update files and ask for permission to restart.
9. The device will restart. If the update process is successful, the device will play the message **device successfully updated**.

Warning !

During the whole process of updating, the device must be connected via a included USB cable to an external power source (computer or external power supply). In the event of power loss (discharged battery) during updating manufacturer can not guarantee the restoration of full functionality of the device and is not responsible for any damages.

13. General usage remarks

When you first start up or after a complete battery discharge, the time needed for finding GPS position can be noticeably longer due to the need to rebuild positioning information.

After starting the device and determining the latitude and longitude for proper direction in which to move, you will need to pass about 20 meters in any direction.

14. Where to find support

Answers to questions about the use of the device can be found on the website at www.migrafterch.eu after entering contact tab and filling the contact form.

We also encourage users to register through the above-mentioned website their devices with the serial number (read the serial number in **Settings, Device info, Serial Number**). Only registered users will have access to software updates and new maps.

You can also contact us using the e-mail address: support@migrafterch.eu.

15. Specifications

- Cortex® A8 processor 1.2GHz
- 1GB DDR3 RAM
- Precision GPS/GLONASS receiver
- Li-Ion battery, 2700mAh
- 16, 32 or 64 GB of built-in memory available for user
- Built-in speaker and high sensitivity microphone
- 3.5mm jack connectors for an external microphone and headphones
- Micro USB 2.0 High Speed port for charging and communication with the computer [USB device mode]
- Nuance® Speech Recognition
- Clear speech synthesis
- OpenStreetMap maps with free updates

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