HRM Fan – iPhone User Manual
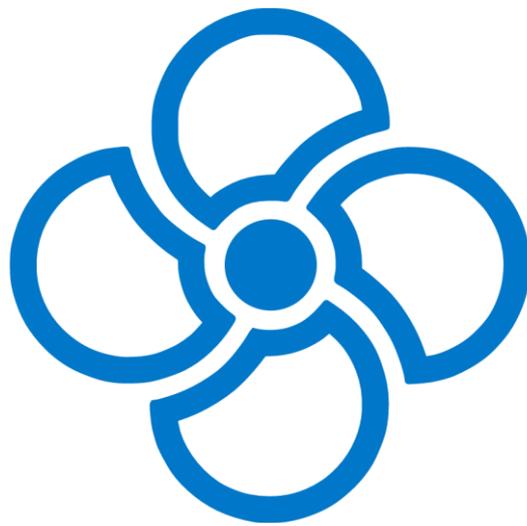
Table of contents

1. History of changes of the document

The table below presents a list of changes done to this document (the iPhone User Manual).

Version no	Date	Changes
1.0	21.10.2022	First published version of the iPhone User Manual in English
1.1	21.10.2022	Added description of the new mobile app release (1.0.2)

2. iPhone application change log

The table below presents the history of changes introduced in subsequent versions of the mobile application for the iPhone platform.

Version no	Date	Change
1.0.0	11.10.2022	First published version of the iPhone application
1.0.1	18.10.2022	Added support for white color in the external RGB LED controller in test mode; minor bug fixes
1.0.2	21.10.2022	Spelling and translation corrections

3. Short description

The HRM Fan application for the iPhone platform is used to configure the HRM Fan device. Thanks to the application it is also possible to manually, remotely control the speed of the fan connected to HRM Fan and a color of a connected compatible RGB LED set.
The application is available in two languages that automatically switch depending on the language set on the phone:
- English – the default language,
- Polish.

The description of the capabilities of the HRM Fan device itself is presented in a separate document: HRM Fan User Manual. **The user manual must be read before the first start-up of the device.** The manual can be downloaded from the support page of our online store at: https://www.hrmfan.dragilla.com/support

4. App installation

The application can be downloaded from the Apple App Store. The link to the application can be found on the website: https://dragilla.wixsite.com/hrmfan/support

5. App first run and description of sections

After installing the application, its icon will appear in the list of applications installed on the device:

After clicking on the icon, the application will start. Right after booting, you'll be asked to turn on Bluetooth. Bluetooth is used for communication between the mobile device (smartphone) and HRM Fan, and between HRM Fan and the optional LED driver.

After turning on Bluetooth, the app will start looking for your HRM Fan. Plug the device into an outlet. Once connected to power, the green LED will light up on the device.

The device will appear on the list in the application - select it.

Device list screen

After selecting the device, the application will establish a connection with it and the main application screen will open. On this screen you will see:

- The top bar, on which the following elements are shown:
  - "Scanner" button that allows you to return to the scanning for HRM Fan devices screen,
  - Sleep button ("SLEEP"), which allows you to put the device to sleep,
  - Device name (e.g. HRM Fan # 50),
  - The software (SW) and hardware (HW) version of the connected device.
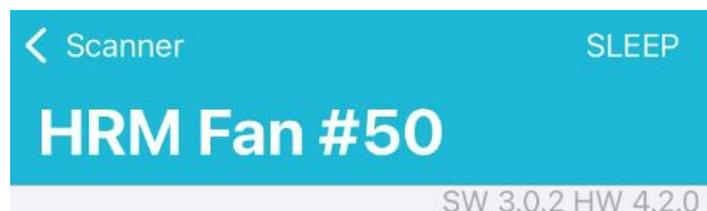
The top bar, after being connected to a HRM Fan device

- Application workspace, which consists of the following sections:
  - "Fan speed test" – a section for manual, smooth control of the fan speed. This section allows you to test the fan before configuring its ranges,
  - "Fan speed range" section - a section for setting the fan speed (power) thresholds,
  - The "HRM strap and HR ranges" section - this is the section where you define the heart rate thresholds, that is the heart rate range in which the device will control the fan and (optionally) connected RGB LEDs. This section is also used to configure the heart rate sensor used,
  - "RGB LED configuration" section, which consists of:
    - "LED driver - USE" switch, which enables the use of an external, compatible RGB LED driver. After enabling this option, two more subsections will appear:
      - "LED Test" section for color testing - in this section you can set any color that will be displayed on the connected RGB LED strip.

Controlling the LEDs is possible only through a dedicated Bluetooth RGB LED driver, which can be purchased in our store https://www.hrmfan.dragilla.com/shop

- "Color configuration" section, where you can set the edge color values that will be used during the training.
  - At the very bottom of the workspace there is a "SAVE and SEND" button, used to save the configuration locally on the phone and send it to the connected HRM Fan device.

The description of individual sections can be found in the following chapters.

NOTE: When the application loses connection to the HRM Fan device (e.g. the user goes beyond the Bluetooth range, puts the device to sleep or the device goes into sleep mode automatically), the reconnect/wake-up screen will appear. From this screen, you can try to connect again (the device will then wake up in the sleep state) or return to the list of devices.
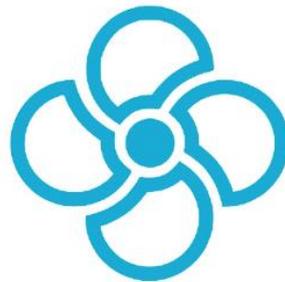
Disconnection screen view

6. Device configuration

Before starting the configuration, connect the device to the power supply and connect the fan to it. If the fan has more than one operating mode, select the mode corresponding to the highest speed.

The configuration is saved locally on the phone in the current profile. Each time you save the settings (the "SAVE and SEND" button), it also sends the configuration from the current profile to the device. HRM Fan remembers the last settings sent to it between runs.

Configuration should begin with a fan speed test. Due to the need to support various types of fans, the device allows you to configure a wide range of operation. **Not all fans will work in the full range**. You need to check the speed at which the fan will turn on and will have the right speed for you (appropriate blowing power). The test can be performed in the "Fan speed test" section.

Once you have tested the fan speeds and set the range of its operation using the slider in the "Fan speed test" section, you can now set the selected speeds in the "Fan speed range" section.

You can then set the desired heart rate limits in the "HRM strap and HR ranges" section. When the lower heart rate threshold is reached, the device will set the fan to the set speed configured as the lower threshold in the "Fan speed range" section. As your heart rate increases, the device will steadily increase the fan speed until you reach the upper heart rate threshold. The device will then reach the defined maximum speed which has been set as the upper threshold in the "Fan speed range" section. A further increase in heart rate will not change the speed of the fan. The fan speed will be regulated automatically within the defined heart rate range.

The same configuration as for the fan speed can be made for the external RGB LED driver. The colors on the RGB LED strip connected to it will change smoothly in the given range, configured in the "RGB LED configuration" section.

7. The Sleep mechanism

The sleep mechanism is a mechanism in the HRM Fan device that allows you to:

- Easily turn off the fan after training without disconnecting the cables or reaching to the fan to physically turn it off,
- Leave the device connected to the power supply between workouts. In sleep mode, the fan will not turn on, even if there is an active heart rate monitor in the range of the HRM Fan device,
- Conveniently turn on the device (wake it up) just before training (e.g. from a mobile application or by pressing the button on the housing).

The device in sleep mode indicates its state with a constantly lit red LED on the housing. In sleep mode, the device does not search for sensors, so it will not connect to them and will not start the fan. However, it is visible for scanning in the mobile application.

The device can be put to sleep in three ways:

1. With a button on the housing,
2. The Sleep button in the mobile application ("SLEEP" – in the top-right corner of the screen),
3. The device will go into sleep mode by itself after a certain period of inactivity (when no sensor is connected and the device is not in test mode). The default timeout (set when the application is started for the first time) is 15 minutes.

You can wake up the device by:

1. Pressing the button on the housing,
2. Connecting to the device using the mobile application.

8. „Fan speed test" section

Manual mode allows for manual fan speed control in the range from 0 to 100%,

NOTE: When manual fan control is enabled, the fan will run at the speed set on the slider regardless of the data coming from the heart rate sensor.

To test the selected fan speed, set the desired value on the slider and set the switch on the right to "ON". This will turn on the test mode. After turning on the fan speed test mode, any adjustment of the value on the slider will automatically send a new value to the HRM Fan device, which will change the speed of the connected fan accordingly.

The fan speed test mode is signalled on the device by a flashing red LED (single flashes).

NOTE: If both the fan speed and LED test modes are enabled, the LED on the HRM Fan housing will flash red - three short blinks.

When making changes in the "Fan speed test" section, there is no need to save the settings with the "SAVE and SEND" button. After setting the selected parameters, they are saved automatically.

Thanks to the possibility of setting any fan speed, the user has the opportunity to check which speeds are suitable for him as the initial and maximum speed, and then use these values in the speed ranges configuration ("Fan speed range" section).
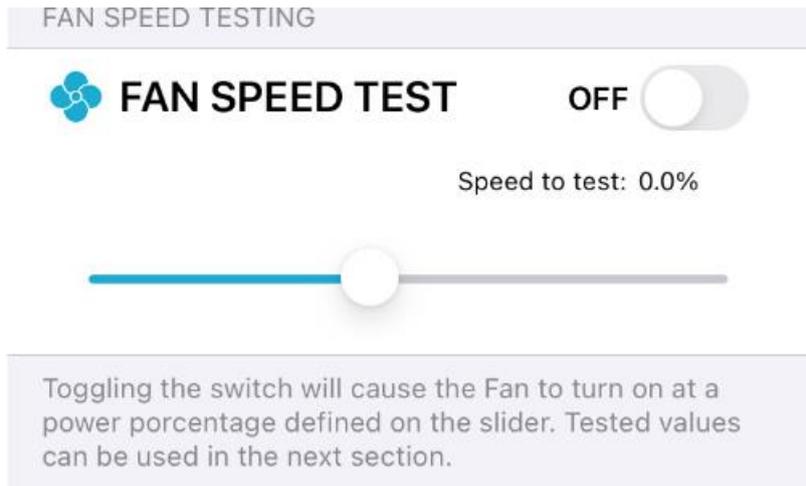
„Fan speed test" section

9. „Fan speed range" section

In the "Fan speed" section, you can set the edge fan speeds that will be used by the HRM Fan algorithm:

- The minimum speed at which the fan turns on when the heart rate reaches the low heart rate threshold defined in "HRM strap and HR ranges",
- The maximum speed that the fan will reach when the heart rate reaches or exceeds the upper heart rate threshold.
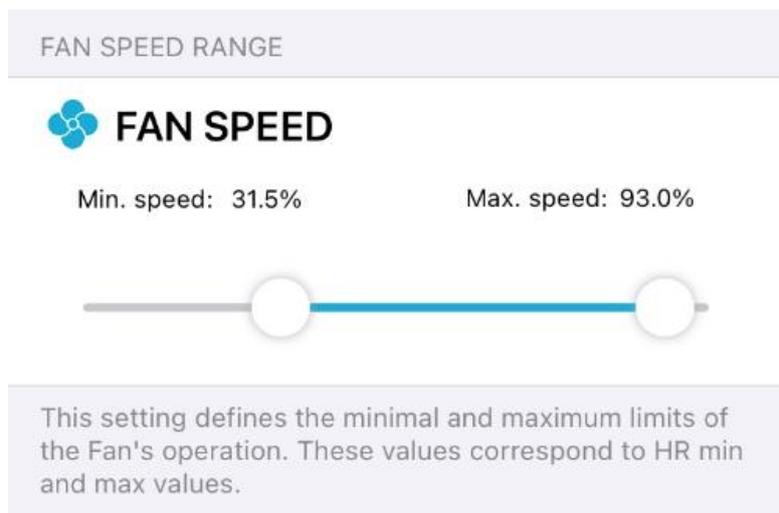
„Fan speed range" section

10. „HRM strap and HR ranges" section

The „HRM strap and HR ranges" section is divided into two parts:

1. Heart rate sensors (strap) configuration,
2. Hear rate (HR) ranges configuration.

The configuration of the heart rate sensor allows you to define the type (ANT + or BLE) and the ID / name of the heart rate sensor (ANT ID for the ANT+ sensor or name for the BLE sensor), which will be used to control the fan and (optional) RGB LEDs.

The ID/name of the HR sensor can be read e.g. in the Garmin device or in the Zwift application, in the device detection section. The BLE name can be additionally found by searching for it in the mobile application ("SEARCH" button). After selecting a sensor from the list, a fragment of its name will be automatically copied to the field in the application.

NOTE: The search function is only applicable to a Bluetooth heart rate sensor. The SEARCH button is not available for ANT+ sensors. This functionality has not been implemented because the search takes place on the smartphone, and most of the smartphones sold today are not equipped with ANT+.

If you don't know the ID/name or don't know how to check it, you can leave this field blank. The device then detects the nearest heart rate sensor and connects to it automatically. However, if you plan to train in a larger group, when there may be a greater number of heart rate sensors in close proximity to HRM Fan, you will need to enter your ID/name of your sensor.
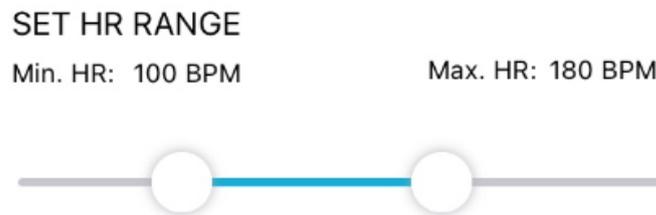
„HRM strap and HR ranges" section, HR sensor configuration

The HR range configuration is used to set the heart rate thresholds. The heart rate thresholds set the heart rate range within which the device will control the fan and/or the RGB LEDs. When the lower heart rate threshold is reached, the device will set the fan to the set speed configured as the lower threshold in the "Fan speed range" section. As the heart rate

increases, the device will steadily increase the fan speed until the upper heart rate threshold is reached - the fan will then reach the maximum speed defined as the upper limit in the "Fan speed range" section. A further increase in heart rate will not change the speed of the fan. When the heart rate starts to drop, the HRM Fan will reduce the fan speed accordingly until the heart rate reaches the lower limit of the defined range - then the fan will turn off.


„HRM strap and HR ranges" section, heart rate range configuration

NOTE: In order to avoid switching the fan on/off several times, when the heart rate fluctuates on the border of the lower range, the so-called hysteresis was introduced, which causes the fan to turn off two beats/min below the set value, and turn on exactly when this value is reached. For example, when the user sets the heart rate range as 100-200 beats/min and his/her heart rate increases from 90 beats/min, the fan will turn on when the heart rate reaches 100 beats/min. When the heart rate is 99 beats/min, the fan will remain on. It will turn off only at 98 beats/min.

11.   „RGB LED configuration" section

This section consists of three parts::

1. A switch enable the use of RGB LEDs („LED DRIVER" – „USE"),
2. A section for testing RGB LEDs („LED TEST"),
3. The part related to the configuration of the color ranges („COLOR CONFIGURATION");
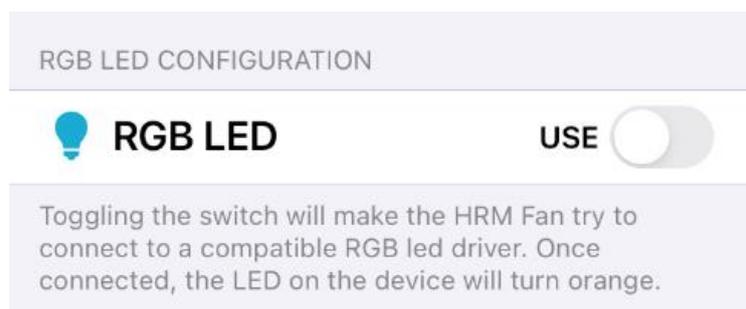
„RGB LED configuration" section – use of RGB LEDs turned off

Parts 2 and 3 are hidden by default and are only shown when the switch from point 1 is turned on („LED DRIVER" – „USE"). After enabling this option, HRM Fan will start searching for a compatible RGB LED driver. Make sure that the driver is connected to the power supply and is within range of the HRM Fan device. After connecting the RGB LED driver, the device will change the color of the LED on the housing to orange (does not apply to the test mode in which the LED blinks red).

The part related to testing the RGB LEDs allows you to control the external RGB LED driver (provided that HRM Fan has connected to it - this is indicated by the orange color of the LED on the device) and manually change colors on the RBG LED strip connected to it.

Color testing is done by selecting a color on the color range slider (rainbow) and setting the switch on the right to "ON" ", which will turn on the test mode. After turning on the test mode, each adjustment of the value on the slider will automatically send a new value to the HRM Fan device, which will change the color of the RGB LEDs accordingly.

NOTE: If the HRM Fan device has failed to connect to the RGB LED driver, it is not possible to test the colors. The switch will automatically return to the "OFF" position.

NOTE: When LED manual control is on, the RGB LEDs will show the color set on the slider regardless of the data coming from the heart rate sensor.

NOTE: If both the fan speed and RGB LED test modes are enabled, the LED on the HRM Fan housing will flash red - three short blinks.
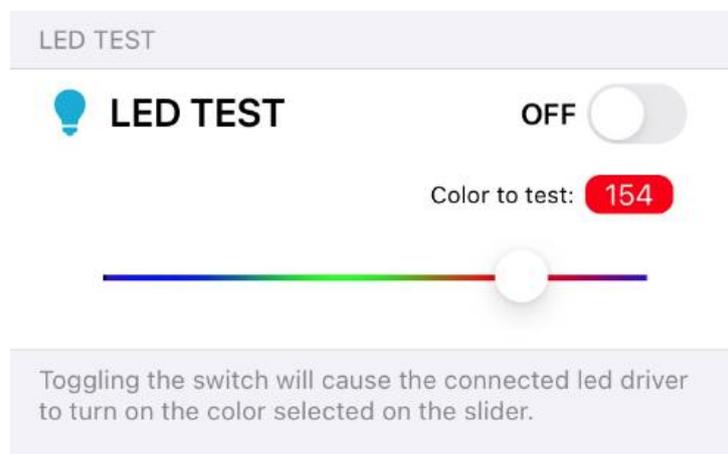

RGB LED configuration – LED test

In addition to the color itself, the number of the selected color appears above the slider. This number allows you to remember the exact color that has been tested in manual mode to be used in the color configuration ("Color configuration" section).

The rightmost color color on the slider is white (200). The leftmost is black (000) which represents the RGB LEDs being off.

In the color range configuration – "Color configuration" section, you can set the color range to be used within the defined heart rate range (see section "HRM strap and HR ranges"). The colors are selected on the slider with a rainbow.
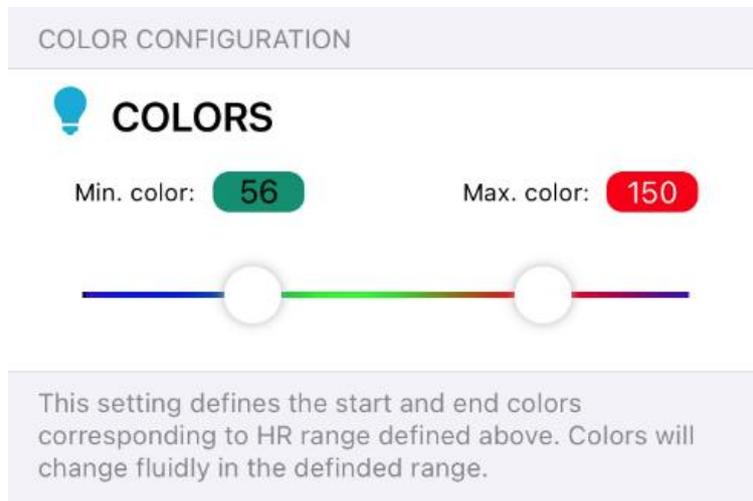
Color range slider – a rainbow

The left color selected on the slider will be sent to the connected RGB LED driver when the heart rate reaches the lower limit. This will be the same heart rate value at which the fan will turn on.

The right color is the "maximum" color - that is, corresponding to the upper limit of the heart rate. If the heart rate rises above the high threshold, the color will no longer change.

The colors will smoothly change over the configured heart rate range, from left to right, which is in the example scenario shown in the photo above - from dark green to red through all the colors of the rainbow in between.

NOTE: In the color configuration, the white color is available only for devices with firmware version 3.0.3 or later.

12. Trouble shooting

Common problems are described in the main user manual in a separate document: HRM Fan - User Manual, which can be downloaded in the support section of our website: https://www.hrmfan.dragilla.com/support

13.   Contact information

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