eSense Pulse FAQ

(effective 09.02.2022)

Please consider these tips and tricks before you write Mindfield with a technical question!

Contents

General FAQ and Troubleshooting

Question 1: **How do I perform effective biofeedback-training?**
How does the App work?
How do I use my own audio or video?
How should I interpret the measurements?

Please see our extensive tutorial online at www.mindfield.de/en/ on our pages for eSense products:

www.mindfield.de/en/eSense-Pulse

Read the guidelines inside the app, when tapping the "I" button.

For data files which you can load as own media into the eSense App, the general limitations by Android and iOS apply. We have successfully tested the following:

- Images: PNG and JPG (GIF can be loaded but isn't animated)

- Audio: MP3, WMA and WAV (Android) and MP3, WAV and AAC (iOS)

- Videos: MOV, MP4 and 3GP (Android) and MOV, MP4 and M4V (iOS)

- If your audios or images are in other formats you simply can convert the files on your computer. Just use a free tool like Free Audio Converter (https://www.freemake.com/free_audio_converter/) or Free Video Converter (https://www.freemake.com/free_video_converter/)

You can use your own pictures in the picture module, your own videos in the video module or your own music or melodies in the audio module in the procedures.

Android usually enables this without any further problems. As long as you allow the eSense app to access your files on your device, you can upload them to the eSense app.

iOS is a bit more restrictive. As usual, you can use your pictures from your device in the iCloud for pictures and videos.

For audio files you need iTunes (or an alternative such as "CopyTrans Manager"). This is where your music or melody must be. You can find your music in iTunes (or CopyTrans Manager) under the tab "My Sound" and insert it into your procedures.

We have a detailed video at https://www.youtube.com/watch?v=A_CRbmBeBBc where we show all the steps.

On **iOS**, the **power saving mode** must also be deactivated, otherwise the videos in the procedures cannot be played.

Another tip: You can also directly download videos from YouTube and format them to suitable format (MP4) with tools like

- https://notube.net/en (Desktop)

- https://snaptube-video.en.softonic.com/android (Android)

- https://apps.apple.com/de/app/video-saver-pro-cloud-drive/id1297144302?l=en (iOS)

- If you already use the messenger Telegram, you can also download YouTube videos with a Telegram bot https://blog.getphp.ir/en/2019/09/youtube-downloader-with-telegram-bot/ (Android and iOS)

More additional information:

https://developer.android.com/guide/appendix/media-formats.html

https://stackoverflow.com/a/1535876

Question 1b: **Which App do I need and where can I download it?**

You need the eSense Universal App which is available for free for Android and iOS.

You can download the App here:

Android: https://play.google.com/store/apps/details?id=com.mindfield.esense

iOS: https://itunes.apple.com/us/app/mindfield-esense/id1141032160?mt=8

Question 2: **The app doesn't find the eSense Pulse**

1. Make sure that not only Bluetooth but also GPS or location is activated on your device. We will NOT determine your location. It is a mandatory requirement of Google / Android that GPS must also be active when using Bluetooth. We cannot change anything, but have to accept this. No GPS data is used by our eSense App.

2. If you have problems connecting to the eSense Pulse, please check that the eSense Pulse is NOT paired in the Bluetooth settings of Android / iOS. This is not allowed. Otherwise, it cannot be paired in the eSense app anymore. Remove the pairing there if necessary. The connection between eSense Pulse and your Smartphone/Tablet is only established within the eSense App. As mentioned under 1., Bluetooth and GPS must be activated and the eSense App must have received the requested authorization to use these two functions. The query for use comes up the first time the app is started and must be affirmed.

3. If the eSense Pulse cannot be found in the settings of the eSense App, please check the battery. Reset the eSense Pulse once by removing the battery, put on the eSense Pulse WITHOUT battery at the chest strap and remove it again. This triggers the reset. Then, insert the battery again or connect a new battery and the chest strap again. Then try reconnecting the eSense Pulse in the settings of the eSense App.

4. Please make sure to use electrode contact spray. Without bad electrode contact, a connection may not occur.

Question 3: **Can I use the eSense with my device?**

Please see the PDF document on our products pages (see question 1), under eSense Compatibility (sample list): https://www.mindfield.de/dwnld.php/?download=63.

Question 3b: **Which iOS devices are supported? Does the eSense work with an iPhone 7, iPhone 8 or iPhone X?**

In general, the eSense works with All iOS devices from version 12.5 or higher, which are (in part):

- Apple® iPhone® 5S, iPhone® 6 / 6S, iPhone® SE / SE 2, iPhone® 7/7 +, iPhone® 8/8 +, iPhone® X, iPhone® XR, iPhone® XS, iPhone® 11/11 Pro, iPhone® 12/12 Pro
- Apple® iPad® from 5th generation (iPad Air) or newer, including all iPad Mini from 2nd generation
- Apple® iPad® Pro from 1st generation or newer
- Apple® iPod Touch® from 6th generation or newer

Question 3c: **Which Android Devices are Supported?**

- All Android Smartphones and Tablets from Android 7.0 (Nougat).

- If you plan on purchasing a device for using the eSense, we suggest a Nokia 2.4 (https://amzn.to/3olUjyn), a Nokia G20 (https://amzn.to/35JPDvS), a Motorola Moto E7i Power (https://amzn.to/3GyOh3X) or a Xiaomi Redmi 9a (https://amzn.to/32WHvao) as an inexpensive entry-level device.

Question 3d: My procedures are not synchronized correctly

This is usually due to two reasons:

Android: You need a Google account (Gmail account) which can't be a cooperative account. The same Google account must be used on all devices. Attention: It is not possible to load procedures from a device with a higher Android version to a device with a lower Android version.

iOS: You must have activated iCloud Backup and ensure that the eSense app is in the backup list. On some devices, you can also force the backup so you don't have to wait for the backup to take place. Attention: Technical limitations from Apple unfortunately do not allow the upload (and thus the synchronization) of audio files. The synchronization of picture and video files is possible, however.

Question 3e: Can I also use (Bluetooth-)speakers instead of headphones with the eSense?

The (Bluetooth-)Speakers are blocked by Android and iOS when the eSense is plugged into the smartphone or tablet. There are two solutions to use external speakers:

You can simply plug in normal speakers via cable into the headphone jack of the eSense. We recommend the Bose® Companion 2 Serie III Multimedia Lautsprechersystem: https://amzn.to/2Nmvw9d.

You can also plug in a Bluetooth Transmitter (f.i. https://amzn.to/3oDJ9oG) into the headphone jack of the eSense and hence connect Bluetooth speakers. We recommend the Bose® SoundLink Mini Bluetooth Lautsprecher II: https://amzn.to/2IKlYl3.

This solution has been tested by us with the named products and works for 100% without latency.

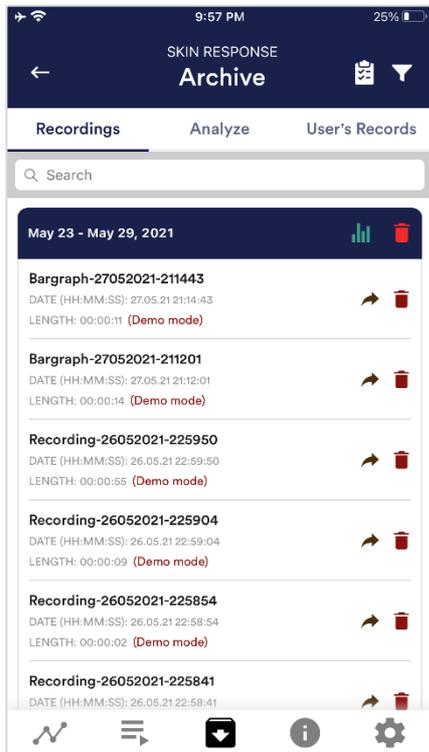**Question 4: How can I process the measured values further, e.g. with Excel or HRV Software?**

Please note the PDF-document on our pages (see Question 1):
eSense Streaming and Analysis (CSV, eSense Web App, OSC): https://www.mindfield.de/dwnld.php/?download=187.

The data (that you can export as a csv-file from the eSense app) can also be evaluated with special HRV software such as the Kubios Standard or the Kubios Premium Software: https://mindfield-shop.com/kubios-hrv-premium-software.html

You can also create your own apps with our SDK or use our Web App: https://www.mindfield.de/en/Streaming-eSense-data-to-a-PC/Mac/Browser-eSense-Dashboard-OSC.html.

Question 4a: How can I export the measurements?

The app also contains an archive, in which you can save your measurements and export them as well. You can watch those in detail again, compare them to each other and export them individual or all together (as ZIP file).

If you click on the clipboard symbol at the top right, you can mark one, several or all measurements. You can then export, analyze or delete the exported measurement (s).

On the filter symbol you can choose whether you want to sort the measurements by name, date, length in ascending or descending order.

Question 5: My eSense is still not working. It does not respond if I touch the electrodes or the thermometer or not. I have turned, pressed and changed the Velcro electrodes without any resulting improvement in the measurement. I have followed the instructions in question 1 and taken all other questions in this FAQ into account.

Please check with at least one other smartphone or tablet device to see if your device is specific for your problem. Please test on an iOS device if possible, as they are known to work fine. For a list of compatible devices please see the pdf document on our products pages (see question 1), under eSense Compatibility (sample list): https://www.mindfield.de/dwnld.php/?download=63.

If the eSense fails on other devices too (strong fluctuation of values with no reactions) and none of the above questions helps to generate a good signal, you can exchange the eSense at the retailer where you purchased your eSense. Please ask the retailer to send the defect device back to the manufacturer.

If you bought the eSense directly at Mindfield, please follow the return procedure (https://www.mindfield.de/en/Support/How-to-return-items-to-Mindfield.html), which you find on our website at „Support" => „Return procedure".

Smart Bulb FAQ (Magic Blue Bluetooth bulb and Philips™ Hue™ products)

The FAQ for both smart bulbs, the "Magic Blue" and "Philips Hue" in combination with the Mindfield eSense sensors. **Please consider these tips and tricks before you contact Mindfield with a technical question!**

Image 1: Magic Blue Smart Bulb in a round lamp

Image 2: Magic Blue beside retail packing

Magic Blue FAQ

Question 1: **How do I connect to the Magic Blue?**

You connect to the Magic Blue from inside the eSense app. To connect to the Magic Blue, open the eSense app and follow these steps:

1. Choose the eSense sensor you want to use
2. Choose the 'settings' (cogwheel symbol)
3. Enable the 'Smart bulb feedback' and choose 'Magic Blue' as the bulb type
4. Tab on the 'Choose A Bulb' button and select the bulb from the list that you want to connect to
5. (You can also test the chosen bulb by tapping on the 'Connection Test' button. If the color of the bulb changes by this, the bulb is connected.)

After you have followed these steps, the app will remember the Magic Blue you have chosen (you usually don't need to follow these steps again, unless you want to use another Magic Blue).

You should not pair the Magic Blue by the device generic Bluetooth settings. (Attention: If you pair your bulb that way, you won't be able to find and select the Magic Blue from inside the eSense app. If you did so by accident, simply un-pair the Magic Blue from the generic Bluetooth settings and follow the steps above).

Question 2: **What can I do, if connecting to Bluetooth fails or the Magic Blue is not found?**

Restart the Magic Blue (switch the switch of your lamp off and on again). <u>Especially if the Magic Blue is already switched on more than 1 minute, the Magic Blue stops sending the Bluetooth signal to connect.</u> Restarting activates the signal again and the Magic Blue can be found.

Question 3: **Why can't I find the device when scanning for Bluetooth devices?**

Check the light from the Magic Blue to make sure the Magic Blue is switched on. If there is metal around the Magic Blue (for example a lampshade around the Magic Blue), it could shield the Magic Blue and block the signal.

Make also sure that the Magic Blue is not connected to another phone or tablet already since the Magic Blue can just be connected to one phone or tablet at a time (see also next question).

Question 4: **How many Magic Blue bulbs can I control at the same time?**

You can control one Magic Blue at the same time.

Question 5: **How far can the distance between Magic Blue and phone or tablet be?**

Usually the range is 18 to 30 meters without any objects in between. It will be less with objects between the Magic Blue and your phone or tablet (for example a wall between the Magic Blue and the smartphone or tablet can decrease the range).

Question 6: **Where can I buy the Magic Blue Bulb?**

We suggest our shop at www.mindfield-shop.com/en/product/magic-blue-v2/

Philips™ Hue™ FAQ

Question 1: **Which products from Philips Hue can I use with the eSense app?**

In general, all Philips Hue products are compatible with our eSense App and therefore can be used together with the eSense. We tested the most common products:

- Philips Hue White
- Philips Hue White Ambiance
- Philips Hue White and Color Ambiance
- Philips Hue Go (very nice!)
- Philips Hue LightStrips White and Color Ambiance

For the best experience, we recommend the Philips Hue White and Color Ambience, because with the colors, the feedback can be enhanced more than with only white colors. Especially we recommend using the Philips Hue Go, as it is mobile with battery and a very nice, complete lamp.

Question 2: **How do I connect to the Philips Hue?**

You connect to the Philips Hue products from inside the eSense app. As usual with the Philips Hue products, you need to connect to the Philips Bridge first and then you can choose the individual bulbs.

To connect to the Philips Hue products, open the eSense app and follow these steps:

1. Choose the sensor you want to use
2. Choose the 'settings' (cogwheel symbol)
3. Enable the 'Smart bulb feedback' and choose 'Philips Hue' as the bulb type
4. Tab on the 'Change Hue settings' button
5. Choose the 'Find Hue Bridge' tab in the upper right and then choose the plus icon in the lower right. Follow the instructions.
6. Next you can choose the lamp(s) under 'Hue lamps' in the upper left. You see a list of available lamps and you can choose each with the tick right next to it. Selected lamps light up, deselected turn off.
7. (You can also test the chosen bulb by tapping on the 'Test' button. If the color of the bulb changes by this, the bulb is connected)
8. When you have chosen the bridge and the lamp(s), you can leave the menu by tapping on the tick in the upper right corner. The settings are now saved.

After you have followed these steps, the app will remember the Philips Bridge and Hue bulb you have chosen. You usually don't need to follow these steps again unless you want to use another Bridge or another bulb(s).

Question 3: How many Philips Hue bulbs/products can I use with the eSense app?

We have successfully tested up to 9 products/bulbs (mixture of different type of bulbs, Hue Go and LightStripe). However, from 3 products and more the reaction time of the products/bulbs slows down significantly (Philips enables a maximum transfer speed of 100ms per signal and per bulb).

Especially if you use several bulbs, a short distance to the Philips Bridge, the bulbs and your smartphone or tablet becomes more relevant. See also the next question about this.

Question 4: How far can the Philips Hue, the Hue Bridge and the smartphone or tablet be away?

Usually the range is between 30 and 100 meter, depending on the environment. The range is less with objects in between (for example a wall in between can decrease the range). Also, if the Hue Bridge and your modem should be in another floor level, it can influence the range.

However, the transmission of the signal by Philips is good enough so that there weren't any problems with our tests in normal households with the signal. Just from 4 (and more) bulbs at the same time a recognizable lag can occur, see also the question above about this.

Question 5: Where can I buy the Philips Hue products?

You should find the Philips Hue products in every well-sorted electronic store. You can also order online. A list of the on- and offline-merchants can be also found on the page of the Philips Hue: https://www2.meethue.com/en-us

We suggest one of the starter kits from Philips for the use with the eSense. This also contains a colored bulb ('White and Color Ambience'): https://amzn.to/3uzSFx8

We recommend the "Hue White and Color Ambience" for the best experience because with the colors, the feedback can be enhanced more than with only white colors.
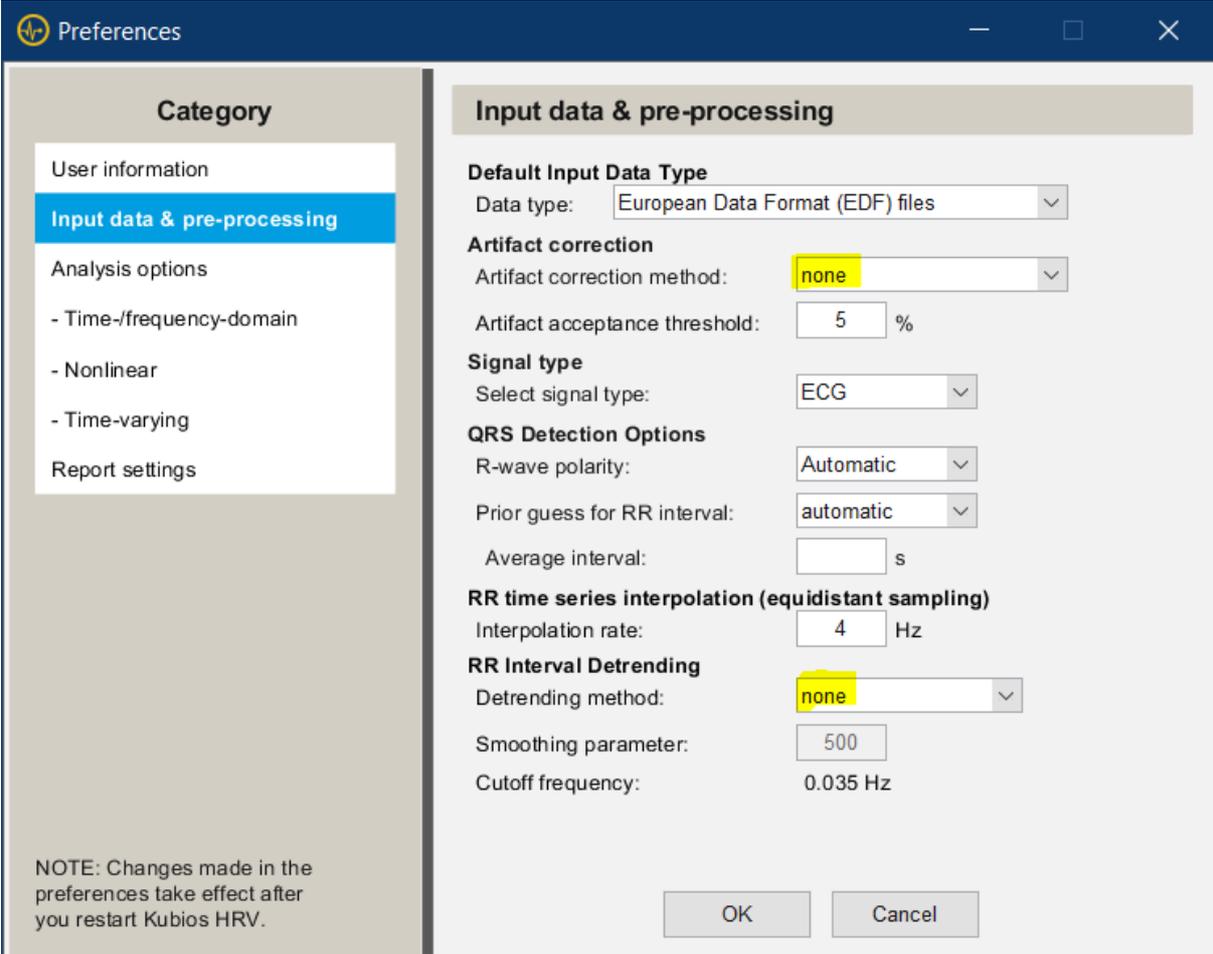
Kubios HRV Software

Here you will find questions and answers about reading the data collected using the eSense Pulse with Kubios HRV software. **Please read these notes and tips before contacting Mindfield with technical questions.**

Question 1: **Why are some parameters (e.g. SDNN, RMSSD, pNN50) a bit different in the eSense app than in the Kubios software?**

By default, the Kubios software calculates the data somewhat differently than the eSense app. However, you can adjust the settings in Kubios so that the data are identical.

To do this, you must set the "Artifact correction method" and the "Detrending method" to "none" (marked in yellow below):