OpenWind Display kit

User Manual

Liesenberg GmbH
Am Buchberg 7, 82335
Berg, Germany

1. GENERAL INFORMATION

Information and Explanations for the Operating Instructions

This manual is intended to assist and familiarize you with your Displaykit device and to provide you with the information needed for its safe and proper operation. Please read the entire manual before using your Displaykit instrument for the first time.

To minimize the risk of injury and avoid damaging the device, please do not use the Displaykit until you are certain that you have fully understood this manual. We are not liable for personal injury, property damage, or damage to the device caused by improper handling or incorrect use of the Displaykit instrument, or for injury resulting from failure to comply with the safety regulations contained in this manual. Please contact our support team with any questions.

Device Description

The Displaykit is a wireless display that allows you to read all the data from the OpenWind device. This connection ensures real-time data monitoring, providing a seamless and user-friendly interface for accessing all relevant information from your OpenWind system. The device is equipped with built-in GPS, enhancing navigation capabilities. It also features solar panels around the display for sustainable power but can be charged via USB-C or wireless charging, offering flexibility in different
environments. Additionally, the Displaykit includes an LED backlight, making it suitable for night navigation and ensuring clear visibility even in low-light conditions.

Safety and Handling

Repair

Do not attempt to open or repair the Displaykit on your own. Disassembling the device will void the warranty, potentially cause permanent damage, and may result in personal injury. If your Displaykit is damaged or malfunctioning, please contact our support team for assistance.

Radio Frequencies

The Displaykit uses wireless signals (Bluetooth Low Energy) to connect to the OpenWind instrument. It was designed, tested, and produced to comply with radio frequency emission regulations and meets all relevant standards.

2. TECHNICAL SPECIFICATIONS

OpenWind Display kit

Dimensions	150,8x120,2x20mm
Weight	280 grams
Wireless Charging input	5V
USB-C input	5V
Power consumption	15 mA / 85 mW
BLE Connection	Bluetooth version 4.2
BLE Connection Range	100 meters with no obstruction
Battery capacity	2500mAh
Solar panel	up to 1,2 Watt (2v 600mA)
Backlight	RGB
Refresh rate	2 Hz
Data rate	10 Hz
USB-C cable dimension	30 cm
Water Resistance	Up to 1 meter below surface
Operating Temperature	-20 0 to 700 C

3. DISPLAYKIT STARTUP GUIDE

This guide will walk you through the process of setting up and connecting your Displaykit to the OpenWind device for real-time data monitoring and seamless navigation.

Establishing connection

Power On the OpenWind Device

Before attempting to connect the Displaykit, make sure your OpenWind device is turned ON. This is essential for enabling the Bluetooth connection between the devices. You can check if the OpenWind device is on by verifying that it is flashing its blue LED indicator light.

Power On the Displaykit

Locate the bottom left button on the Displaykit that features the OpenWind logo.

Press and hold the button for 3 seconds, then release it. You'll see a splash screen as the Displaykit powers on. Once activated, the Displaykit will automatically begin searching for the OpenWind device, and the connection should occur instantly.

When the connection is successful, the OpenWind device's indicator will start flashing green, confirming that the devices are linked. Once connected, all real-time data from your OpenWind device will be displayed on the Displaykit screen, allowing you to monitor everything seamlessly.

Setting up the Display

Download the NMEAkit App

To download the NMEAkit app, go to the App Store (for iOS) or Google Play Store (for Android) and search for "NMEAkit." Install the app on your device. When you open it for the first time, the app will request Bluetooth permissions—ensure you grant these to enable connection with your Displaykit device.

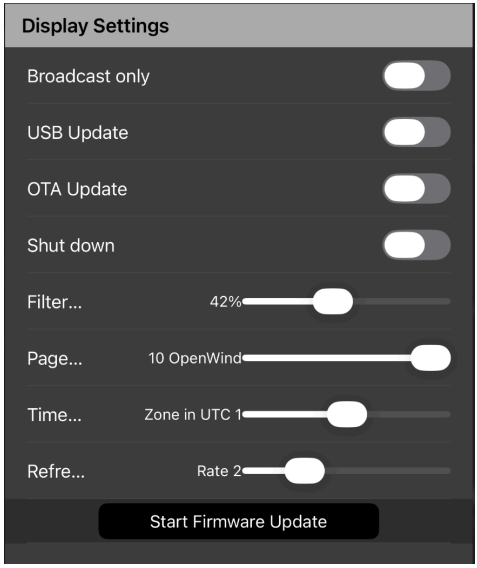
Once the app is open, it will automatically connect to the Displaykit system, and you'll see real-time data from your OpenWind device on the screen. To configure your Displaykit, tap the Displaykit icon in the bottom-right corner. This will bring up a settings page where you can adjust display options, control the backlight, and customize your dashboard layout.

Available on the iPhone App Store

ANDROID APP ON Google play

Display Settings

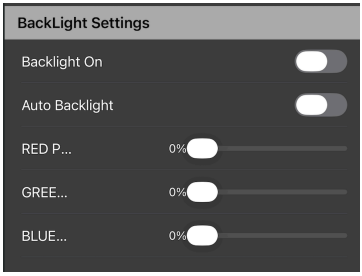
Broadcast Only: Enable this if DisplayKit should not connect directly to OpenWind. In this mode, the device will only read incoming broadcast data.
USB Update: Places DisplayKit into USB Update mode. Connect a USB-C cable to the PCB and copy the update file into the mounted folder.
OTA Update: Initiates an Over-the-Air (OTA) update. This allows you to flash firmware using an external application (e.g., a DFU app).
Shutdown: Select this option to remotely power down the DisplayKit. This is useful if the device is mounted in an unreachable location.
Filter: Adjusts data smoothing. Set a value from **0% to 100%** to filter fluctuations in displayed values.
Page: Use the slider or selector to choose which data page is currently visible on the display.
Timezone: Manually set your local time offset relative to **UTC (+/-)** for accurate timekeeping.
Refresh Rate: Determines how many times per second the display updates its values (adjustable from **1 to 5 Hz**).



BackLight Settings

Auto Backlight: Enable this feature for night navigation. The display will automatically activate the backlight when ambient light levels drop.

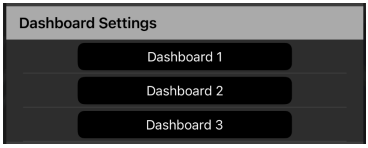
RGB Customization: Personalize your display by using the RGB sliders to adjust the backlight color to your preference.

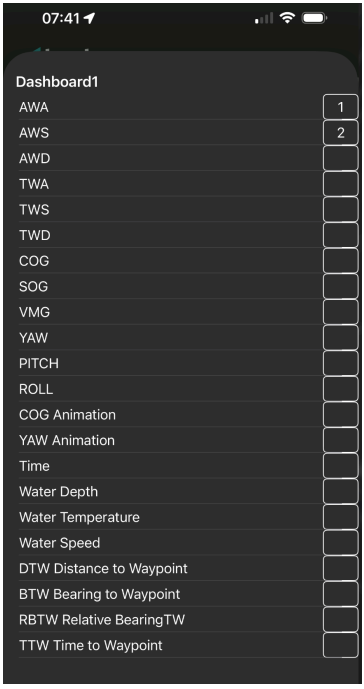


Dashboard Settings

You can fully customize up to **three independent dashboards** to monitor the specific data relevant to your needs.

1. **Select a Dashboard:** Choose one of the three available dashboard slots to modify.
2. **Choose a Layout:** Select whether you want to display **two or three data points** on the screen.
3. **Assign Data:** From the provided list, select the specific metrics you wish to view in each display field.





Waypoint and Race Settings

Race Configuration

DisplayKit supports up to **six waypoints**. Once your waypoints are selected, you can initiate a race by setting the **Start Time**. As the start time approaches, your waypoints will automatically appear on the **SailView** page.

Waypoint Navigation Data

- **Distance to Waypoint (DTW):** Displays the distance to the active mark. You can set the units to **Nautical Miles (nm)**, **Kilometers (km)**, or **Meters (m)**.
- **Bearing to Waypoint (BRW):** Displays the bearing to the mark in degrees relative to **Magnetic North**.
- **Relative Bearing to Waypoint (RBW):** Shows the relative angle between your current heading and the waypoint.

Waypoint Sequencing

- **Arrival Radius:** You can set an arrival threshold of **10, 25, 50, or 100 meters**. Once you enter this radius, the system will automatically sequence to the next waypoint.
- **Manual Skip:** If you pass a mark without entering the predefined radius, you must manually advance the sequence by pressing the **Skip Waypoint** button on the display.

Pro-Tip: Race Start

To ensure the most accurate timing, verify your **Timezone** and **Refresh Rate** in the General Settings before the countdown begins.

4. MOUNTING SETUP

SP Connect

We've partnered with SP Connect to provide robust, vibration-dampened mounting for your DisplayKit.

- Included: An SP Connect Wall Mount and adapter, which installs easily using two M3 screws.
- Mechanism: The secure twist-to-lock system allows for effortless attachment and removal, even in rough conditions.
- Compatibility: The system also supports the SP Connect Universal Mount and Wireless Charging Mount for added flexibility.

For additional flexibility, explore other SP Connect mounting solutions that may better suit your needs: https://sp-connect.de/

SP Connect wall mount

SP Connect universal mount

SP Connect wireless charging

5. FIRMWARE UPDATE

Follow these detailed instructions to ensure a smooth firmware update for your Displaykit.

Step 1: Download the Latest Firmware

1. Visit the official OpenWind website: www.openwind.de/specs.
2. Locate and download the latest version of the Displaykit firmware. Ensure you save the file in an easily accessible location on your computer.

Step 2: Connect the Displaykit to Your Computer (USB Update)

1. Use the USB-C cable provided in the box to connect the Displaykit to your computer.
2. Ensure the connection is secure, and the Displaykit is powered on.

Step 3: Activate Firmware Update Mode

1. Navigate to the settings menu on the Displaykit.
2. Select the option to activate Firmware **Update USB Mode**. Once activated, the Displaykit will be recognized as an external hard drive by your computer.
   For **OTA Update**, the Displaykit will show “OTA Update” on display.

Step 4: Perform the Update

4.1 USB Update

macOS

1. After activating Firmware Update Mode, the Displaykit will appear on your Finder application as an external drive.
2. Open the drive and drag the downloaded firmware file **displaykit.uf2** into it.
3. Wait for the file transfer to complete. The update process will be automatically triggered and should finish in a few seconds.

Windows

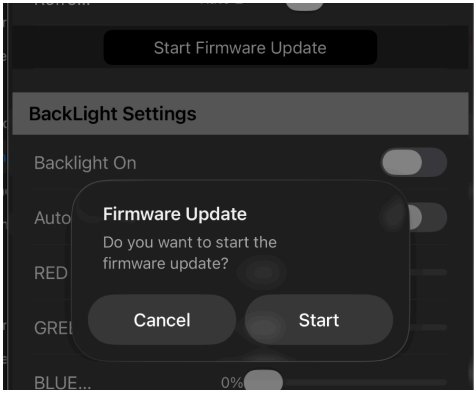
1. Before proceeding, download and install the necessary Windows driver from the OpenWind website: www.openwind.de/specs.
2. Once the driver is installed, the Displaykit will appear as an external drive in File Explorer.
3. Open the drive and drag the downloaded firmware file **displaykit.uf2** into it.
4. Wait for the file transfer to complete. The update process will be automatically triggered and should finish in a few seconds.

4.2 OTA Update on iOS/Android using NMEAkit app

Updating your **DisplayKit** wirelessly is simple using the **NMEAkit** app. Follow these steps to ensure a successful firmware flash:

1. **Check for Updates:** If a new software version is available, the **"Start Firmware Update"** button will automatically appear within the app.
2. **Initiate Update:** Tap the button and confirm the update. The DisplayKit will begin the process automatically.
3. **Monitor Progress:** The update typically takes a few minutes.

Keep the App in the Foreground: Do not close the NMEAkit app or switch to other applications during the update. Ensure your mobile device stays within range of the DisplayKit until the process is 100% complete.



Updating Displaykit

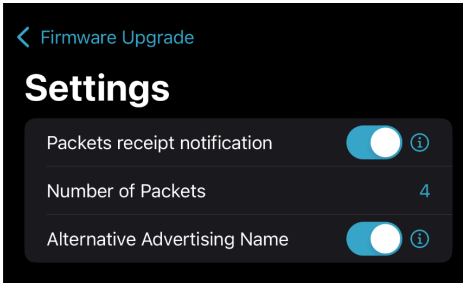
10%

4.3 OTA Update on iOS/Android using DFU app (Optional)

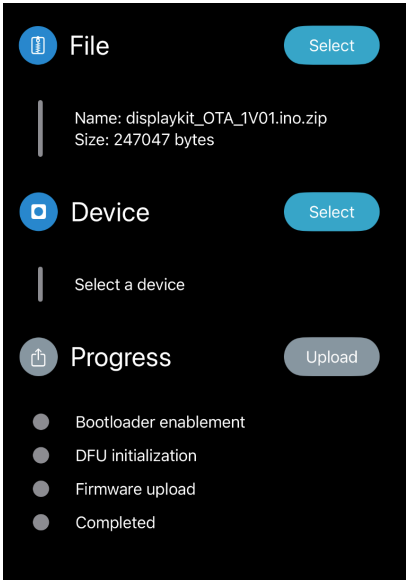
Before proceeding, send the firmware file **displaykit.zip** to your phone via AirDrop or email, and save it to your files. Ensure your phone is not in power-saving mode so the display remains visible and the app stays in the foreground. Otherwise, the firmware update may stop, and the display will enter safe mode. If this issue occurs, you will need to perform a USB update instead. Make sure you enable OTA update in NMEAkit app

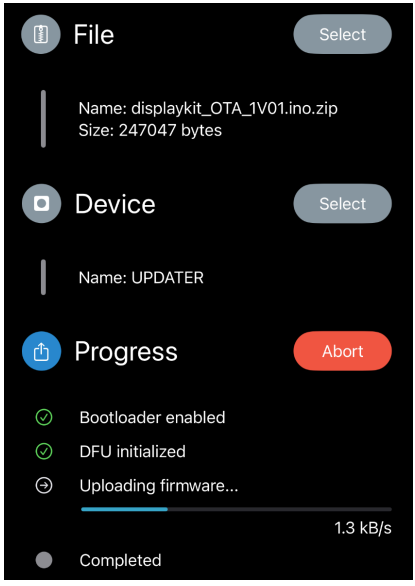
1. Download the DFU Application from App store or Google Play Store.

2. Reduce **Number of Packets** 4.



3. Select the zip file downloaded from the webpage, select the device named **UPDATER** and then finally press the Upload button to complete the firmware update.





6. TRANSPORTATION AND PACKAGING

Transportation

Please ensure that the device is not exposed to impact during transport, as this may cause damage. If needed, transport the device in its original packaging or in a suitable protective container.

Packaging

If you choose not to keep the original packaging, please dispose of it properly by separating the materials in accordance with your community's recycling and disposal guidelines.

7. MANUFACTURER WARRANTY

What is covered by this warranty

Liesenberg GmbH, Berg, Bavaria, Germany, warrants the hardware product contained in the original packaging against defects in materials and workmanship, when used in accordance with Liesenberg GmbH's published guidelines, for a period of two (2) years from the date of the original retail purchase by the end-user purchaser ("Warranty Period").

What is not covered by this warranty

This warranty does not apply to any non-Liesenberg GmbH branded hardware products or any software, even if packaged or sold with Liesenberg hardware. Manufacturers, suppliers, or publishers other than Liesenberg GmbH may offer their own warranties— please contact them for more information. Liesenberg GmbH does not guarantee
that the operation of its hardware will be uninterrupted or error-free. Additionally, Liesenberg GmbH is not responsible for any damage resulting from failure to follow the provided instructions for using its products.

This Warranty does not apply:

(a)Consumable parts, such as batteries or protective coatings that are designed to diminish over time, unless failure occurs due to a defect in materials or workmanship; (b) cosmetic damage, including but not limited to scratches, dents, and broken plastic on ports, unless failure occurs due to a defect in materials or workmanship; (c) damage caused by the use of third-party components or products that do not meet the specifications of the hardware; (d) damage resulting from accidents, abuse, misuse, fire, liquid contact,

earthquakes, or other external causes; (e) damage caused by operating the hardware outside of Liesenberg GmbH's published guidelines; (f) damage resulting from service (including upgrades and expansions) performed by anyone other than a representative of Liesenberg GmbH; (g) any hardware that has been modified to alter its functionality or capability without the written permission of Liesenberg GmbH; (h) defects caused by normal wear and tear or the natural aging of the hardware; (i) if any serial number has been removed or defaced from the hardware; or (j) if Liesenberg GmbH receives information from relevant public authorities indicating that the product has been stolen, and you cannot provide proof of authorized ownership (e.g., by presenting proof of purchase).

What will Liesenberg GmbH do in the event the warranty is breached

If you submit a claim to Liesenberg GmbH during the warranty period in accordance with this warranty, Liesenberg GmbH will, at its discretion:

(i) repair the hardware using new or previously used parts that are equivalent to new in performance and reliability; (ii) replace the hardware with the same model (or, with your consent, a product that offers similar functionality) made from new and/or previously used parts that are equivalent to new in performance and reliability; or (iii) exchange the hardware for a refund of your purchase price. Liesenberg GmbH may request that you replace certain user-installable parts. A replacement part or hardware, including any user-installable part that has been installed according to the instructions provided by Liesenberg GmbH, will assume the remaining term of the warranty or ninety (90) days from the date of replacement or repair, whichever provides longer coverage for you. When a hardware product or part is replaced, or a refund is issued, the replacement item becomes your property, and the replaced or refunded item becomes the property of Liesenberg GmbH.

Limitation of liability

Except as provided in this warranty and to the maximum extent permitted by law, Liesenberg GmbH is not responsible for direct, special, incidental, or consequential damages resulting from any breach of warranty or condition, or under any other legal theory. This includes, but is not limited to, loss of use, revenue, actual or anticipated profits (including loss of profits on contracts), use of money, anticipated savings, business opportunities, goodwill, reputation, data (including loss, damage, compromise, or corruption), or any indirect or consequential loss or damage of any kind, including costs associated with the replacement of equipment and property, recovery, programming, or use with Liesenberg GmbH's hardware, or any failure to maintain the confidentiality of information stored on the hardware.

The foregoing limitation does not apply to claims for death or personal injury, or any statutory liability for intentional and grossly negligent acts and/or omissions. Liesenberg GmbH disclaims any representation that it will be able to repair any hardware under this warranty or replace the hardware without risk of loss or damage to information stored on the device.

REGULATORY

EU Compliance Statement

Liesenberg GmbH declares that this wireless device complies with the essential requirements of the Radio Equipment Directive 2014/53/EU and the Electromagnetic Compatibility Directive 2014/30/EU, as applicable.

European Union—Disposal Information

The symbol above indicates that, in accordance with local laws and regulations, your product and/ or its battery must be disposed of separately from household waste. When this product reaches the end of its life, please take it to a collection point designated by local authorities. Properly separating and recycling your product and/or its battery upon disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

Software safety

If the hardware firmware encounters a persistent issue during standby or normal operation, it will automatically reset and reboot itself.

This feature enhances device stability and increases resilience in various environments or under stressful conditions. If the automatic reset does not function, please disconnect the device to manually reboot the system.

Hardware safety

All assembly components in the hardware are made from corrosion-resistant materials to ensure durability in harsh environments. To prevent injury during installation or maintenance, all edges of the hardware have been designed to be smooth and rounded.

EG Declaration of Conformity

Manufacturer:	Liesenberg GmbH
Address:	Am Buchberg 7, 82335 Berg, Germany
Product name:	Display kit

We declare under our sole responsibility that the above referenced product complies with the following:

Electromagnetic Compatibility 2014/30/EU
Radio Directive 2014/53/EU
Restriction of certain Hazardous Substances 2011/65/EU
Low Voltage 2014/35/EU

The following standards have been applied:

EN 61000-6-4:2007:	Electromagnetic compatibility (EMC) - Generic standards - Emission standard for residential, commercial and light-industrial environments.
EN 62368-1:2016-05:	Audio/video, information and communication technology equipment Part1: Safety requirements.

Berg, June 05, 2024

Michael Liesenberg
Head of Engineer

Head of Visual Development