SORAMA L642

User Manual

Sorama

2.21.0

rev: 2.5 — January 2026

CONTENT

CONFORMITY

Sorama B.V.
Achtseweg Zuid 153H
5651 GW Eindhoven
The Netherlands

Declare under our sole responsibility that the products:

Product name	L642 Acoustic Monitor
Model number(s)	L642, L642+, L642v, L642v+

Are in conformity with the requirements of the following EU Directive or other normative documents. This declaration is based on the full compliance of the products with the following European standards:

- 2014/30/EU For Electromagnetic compatibility directive (EMC)
  - EN 61000-6-3:2007+A1:2011
  - EN 61000-6-2:2005 + AC:2005
- RoHS3 Restriction of Hazardous Substances
  - EU2011/65/EU RoHS2
  - EU2015/863

Technical Compliance Data held by:
Sorama B.V.
Achtseweg Zuid 153H
5651 GW Eindhoven, NL

Signed for and on behalf of Sorama B.V.

Name: Rick Scholte, CEO
Address: Achtseweg Zuid 153H, 5651 GW, Eindhoven

SAFETY INFORMATION

This document contains important information which should be kept at all times with the instrument during its operational life. Any user of this instrument should be in possession of these instructions with the instrument. Eventual updates to this information will be added to the original document. The instrument can only be operated by trained personnel in accordance with these instructions and local safety regulations.

This instrument is intended only for the measurement of sound and vibration. The instrument is appropriate for continuous use. The instrument operates reliably in demanding conditions, as long as the documented technical specifications of all components are adhered to. Compliance with the operating instructions is necessary to ensure the ideal performance.

Replacement Parts and Accessories

Only use original parts and accessories approved by the manufacturer. Using non original replacement parts and accessories can compromise the operation safety and functionality of the product. Misuse will void warranty.

To prevent possible electrical shock, fire, or personal injury follow these guidelines:

• Read all safety information before you use the product.

• Use the product only as specified in this manual.

• Do not use the product around explosive gases and vapor.

• Do not use the product if it is damaged.

• Do not use the product if it operates incorrectly.

• Do not apply more than the rated voltage.

• Incorrect wiring can damage the sensor and void the warranty. Before applying power, make sure all connections are correct and secure.

• To prevent possible electrical shock, fire, or personal injury make sure that the sensor is grounded before use.

• Only allow an approved technician repair the product.

• The metallic enclosure of the sensor is not necessarily earthed by installation. At least one of the following safety measures must be met to minimize the danger of electrostatic charges:

- Earth grounding of the cable shield
- Installing the unit's metallic enclosure on an earth grounded mounting bracket or on any other grounded bases
- Protect the operator from electrostatic discharge

CONTACTS

The supplier will, during the warranty period in office hours (GMT +1), provide the required first line support when technical faults occur. Customers can request support by sending an email to helpdesk@sorama.eu or by calling +31 (0) 40 304 10 19. After receiving a detailed description of the occurring error(s), Sorama will evaluate the problem. When the issue does not have any relations to the services of Sorama or support is requested outside the warranty period, costs will be charged to the customer.

DESCRIPTION

The Sorama L642 is the evolution in acoustic monitoring solutions. It combines the powerful use of acoustic imaging, detection of sound levels, and accurate localization. The Sorama L642 supports edge computing, all powered and connected with one single network cable.

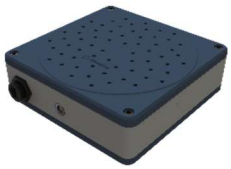
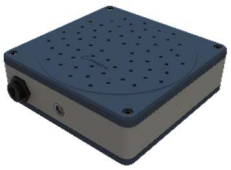
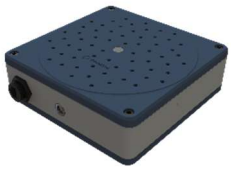
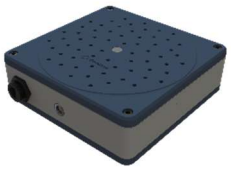
The Sorama L642 can be used in a variety of application fields: safety and security, mobility, environmental noise monitoring or loud vehicle detection. The acoustic monitors can be easily connected to cover larger areas with secure and General Data Protection Regulation (GDPR) proof data handling.

Features

- All in one acoustic monitoring
- Sound intensity mapping
- Acoustic anomaly detection
- Visual light camera integrated (L642v(+))

Available models

The following model variants from L642 series.

			
Sorama L642	Sorama L642+	Sorama L642v	Sorama L642v+
• 64 MEMS microphones • Sunflower Array • Jetson Nano • Base API Framework • Sound Source Detection API • dB values • Sound Localization	• 64 MEMS microphones • Sunflower Array • Jetson Xavier NX • Base API Framework • Sound Source Detection API • dB values • Sound Localization	• 64 MEMS microphones • Sunflower Array • Jetson Nano • Base API Framework • Sound Source Detection API • dB values • Sound Localization • Integrated camera	• 64 MEMS microphones • Sunflower Array • Jetson Xavier NX • Base API Framework • Sound Source Detection API • dB values • Sound Localization • Integrated camera

TECHNICAL DATA

Physical Properties

Size (LxWxD)	170 x 170 x 65 mm	6.7 x 6.7 x 2.5 inch
Weight	0.85 kg	1.7 Lb
Mounting	Backplate: VESA100, M5 bolts	Tripod: 1/4-20 bolt
Connector	RJ45	
Power	L642(v) PoE port, 802.3af 44-57 VDC, Max 15.4 W, Typ 12.95 W	L642(v)+ PoE+ port, 802.3at 44-57 VDC, Max 30 W, Typ 25.5 W
Status indicator	RGB LED	

System Integration

API	Open HTTP REST
Event Triggers	dB SPL or SoundSurface Threshold
Event Actions	Acoustic SoundSurface overlay image Acoustic SoundSurface overlay video Audio measurement
Output Protocols	HTTP(S) REST, Websocket (Secure), RTSP, webRTC

Camera (for L642v and L642v+)

Visible light camera	Integrated
Aspect ratio	4:3
Resolution video stream	640x480 at 30 fps

Microphones

Type	MEMS	Digital Bottom Port
SNR (A-weighted, at 1 kHz)	64 dB for 94 dB SPL	@ 1kHz
Sensitivity	-26 dBFS +/- 1.5dB	At 1 kHz, 94 dB SPL
Acoustic Overload Point	120 dB SPL	At 1 kHz, <10% THD

General

Ingress Protection	IP54
Operating Temperatures	-20 °C to 50 °C (4 °F to 122 °F)
Warranty	2-year

ENVIRONMENT

Ambient Temperature

The L642 is designed to operate in ambient temperatures ranging from -20°C to 50°C (4°F to 122°F). Ensure the environmental temperature is within this range. Install the housing away from any heat sources. Be cautious of cold water, as it can cause condensation and potentially damage the device. The acceptable ambient operating relative humidity is between 10-100% RH (non-condensing).

Protection

The L642 complies with the international protection standard IP54. For v and v+ versions, a protective lens is attached. Note that the L642 is splash-proof but not watertight. To maintain its splash-proof effectiveness under IP54, periodically inspect all seals and the waterproof connector.

INSTALLATION

The L642 series is an IP-based device. A reliable network and power infrastructure is crucial for the optimal performance of any IP-based solution, including the L642 acoustic monitor. In this section, you will find the minimum requirements necessary to ensure the best operating experience with the L642 acoustic monitor.

System Requirements

1. **Power:** The L642 is powered via Power over Ethernet (PoE). Only one CAT5e or CAT6 network cable is needed for connecting a L642. The power can be provided either via a PoE switch or a separate PoE injector to the L642. The L642(v) uses up to 12.95 W of power (IEEE 802.3af-2003). The L642(v)+ needs PoE+ (IEEE 802.3at-2009) and uses up to 20 W of power.

2. **a. Connection (Wired):** The L642 can be connected to the network via one CAT5e or CAT6 network cable. In case of a fiber optic network, a fiber to copper converter with PoE capability needs to be used to connect the L642 to the network.

   b. Connection (Wireless): In case of a wireless network requirement, the L642 can be connected to the network using a Wifi, 4G or 5G router with PoE.

3. **Internet:** The L642 does not require an active internet connection for normal operation. However, an internet connection is required when using the Insights page, as this feature loads map imagery from Google Maps. Additionally, the system time of the L642 can be synchronized via a Network Time Protocol (NTP) server. Synchronization with a public NTP server requires an active internet connection.

4. **Network requirements**
   1. **Throughput:** The L642 requires approximately 3 Mbit/s of network bandwidth when using live SoundSurface. When both SoundSurface and video streaming are enabled (via the streaming page), the data usage increases to up to 7 Mbit/s.
   2. **Broadcast/Multicast messages:** The network to which the L642 devices are connected must support (or not block) broadcast messages. Broadcast messages from the L642 are used to find them (mDNS protocol, ZeroConf). ZeroConf utilizes the IP address 224.0.0.251. If there is no DHCP server on the network, the L642 will assign itself an IP address within the Auto IP range (169.254.0.0-169.254.255.255). Alternatively, the user can configure a static IP address to access the unit, in which case mDNS is not required.
   3. **Ports:** Communication to a L642 device is handled via ports 80, 443, 3478 (UDP), 8189 (UDP), 8550-8553, 8560-8567, 8999, 9011-9018 & 9100.

Connecting to the L642

There are several modes in which you can connect the L642:

1. Mode 1: Connect to a Network using DHCP
2. Mode 2: Connect directly to a PC/Laptop using Auto IP
3. Mode 3: Connect to a Network using Static IP
4. Mode 4: Connect directly to a PC/Laptop using Static IP

ⓘ INFORMATION

When you get a new L642 device, it is configured so it can be connected in both mode 1 and 2 without any additional configuration.

If you want to configure the L642 to connect it in mode 3 or 4, you will first need to connect it in mode 1 or 2 and change the configuration of the L642 via the dashboard.

ⓘ INFORMATION

To power the L642, you need a PoE injector or PoE capable switch. The PoE switch detects if a device needs PoE. The requirement is PoE+ for the L642+ and L642v+.

Mode 1: Connect to a Network using DHCP

To connect using mode 1, connect the L642 to a network which has a DHCP server available. Typically, the router of your network runs a DHCP server, but this can also run by a server. Contact your network administrator for more information about your particular network setup.

Connection can be made in two ways:

1. Connect the L642 directly to a suitable PoE capable switch that is connected to the network
2. Connect the L642 via a suitable PoE injector to a non-PoE capable switch that is connected to the network

The DHCP server will then automatically provide an available IP address to the L642 in the address range of the existing network. **The devices that will communicate with the L642 (e.g. your PC/laptop/server) need to be connected to the same network, either via a wired connection or a wireless access point.**

Mode 2: Connect directly to a PC/Laptop using Auto IP

To connect using mode 2, connect the L642 directly to a PC or Laptop.

Since ethernet ports on a PC/Laptop are (almost) never PoE capable, you will require a suitable PoE injector. Connection can be made in two ways:

1. Connect the L642 via a suitable PoE injector to a free ethernet port on your PC/Laptop
2. Connect the L642 via a suitable PoE injector to an ethernet-USB dongle plugged into your PC/Laptop

The L642 will assign itself an IP address in the 169.254.0.0/16 range, also known as the Auto IP range.

Mode 3: Connect to a Network using Static IP

To connect using mode 3, connect the L642 to any network (with or without DHCP server).

Connection can be made in two ways:

1. Connect the L642 directly to a suitable PoE capable switch that is connected to the network
2. Connect the L642 via a suitable PoE injector to a non-PoE capable switch that is connected to the network

A manually determined, fixed IP address can be assigned to the L642 via the dashboard.

⚠ IMPORTANT

Manually setting a static IP Address incorrectly can lead to the device becoming unreachable. Make sure you configure the device correctly or ask your network administrator for help.

Mode 4: Connect to a to a PC/Laptop using Static IP

To connect using mode 4, connect the L642 directly to a PC or Laptop.

Since ethernet ports on a PC/Laptop are (almost) never PoE capable, you will require a suitable PoE injector. Connection can be made in two ways:

1. Connect the L642 via a suitable PoE injector to a free ethernet port on your PC/Laptop
2. Connect the L642 via a suitable PoE injector to an ethernet-USB dongle plugged into your PC/Laptop

A manually determined, fixed IP address can be assigned to the L642 via the dashboard.

⚠ IMPORTANT

Manually setting a static IP Address incorrectly can lead to the device becoming unreachable. Make sure you configure the device correctly or ask your network administrator for help.

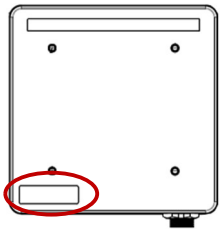
Setting up the L642

Before you start:

- Make sure the L642 is connected to your PC/Laptop in either mode 1 or mode 2 as described.
- Wait until the status indicator LED (on the side of the L642) becomes solid green.

Step 1

Keep the serial number of the L642 ready. The serial number can be found on the back of the device at the bottom-left.

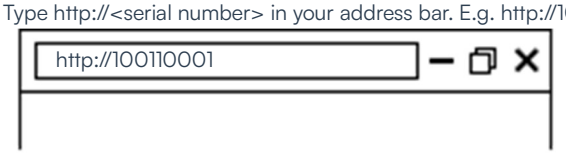


Step 2

Open your web browser. For the best user experience, it is recommended to use Chrome, Edge, or Safari.

Step 3

Type http://<serial number> in your address bar. E.g. http://100110001



If your network does not have DNS server or if you connected the device directly to your PC add *.local* at the end of the serial number address. e.g. *http:// 100110001.local*

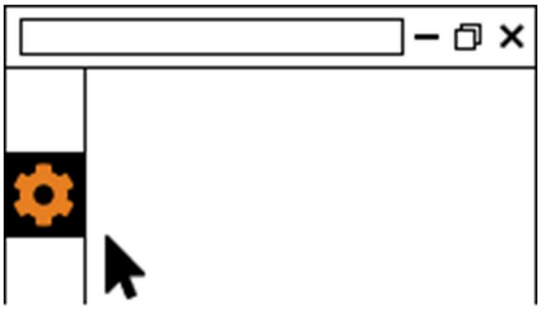
Step 4

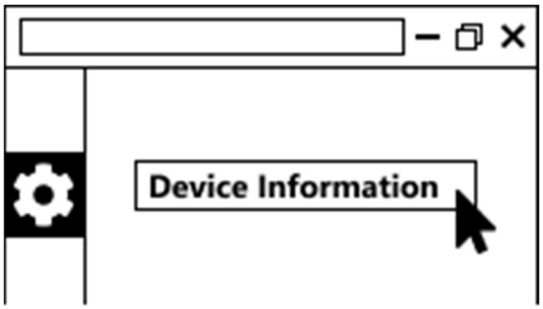
Your browser will now show the device dashboard and prompt you to login. The default credentials are:

Username: admin	and	Username: user
Password: admin		Password: user

Step 5

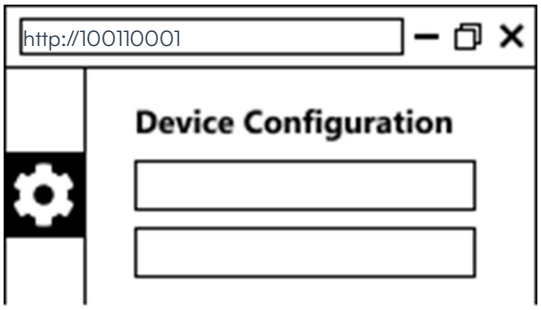
In the device dashboard go to the “Device Configuration” page and click on Device Information





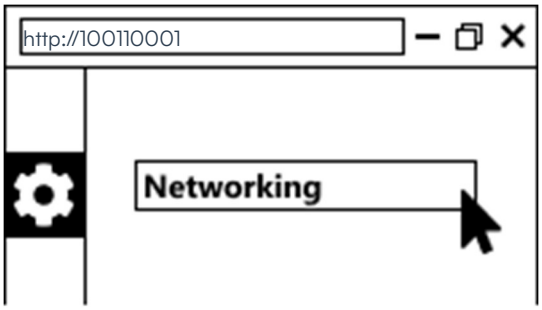
Step 6

Set the device coordinates and relevant installation information.



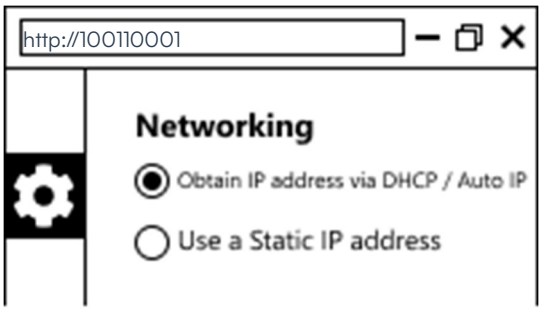
Step 7

Go back to the “Device Configuration” page and click on Networking.



Step 8

In the Network page set the preferred network settings according to your project.



Select “Obtain IP address via DHCP / Auto IP” (the default) if you want to run the L642 in either mode 1 or 2 as described in section 3. No additional configuration is required.

Select “Use a Static IP address” if you want to run the L642 in either mode 3 or 4 as described in section 3. You will need to specify the following:

- IP address: The static IP address that the L642 should use
- Subnet mask: The subnet mask of the network the L642 is (going to be) connected to
- Gateway: The gateway address of the network the L642 is (going to be) connected to
- Primary and Secondary DNS Address: The IP addresses of the primary and secondary DNS server on the network.

After the device has been configured, you will need to reload your browser window since the IP address of the L642 has changed. Depending on your network setup and the values you have entered, you might also need to change the configuration of your network adapter before you can reach the L642 again. Ask your network administrator for assistance.

ⓘINFORMATION

All values must be specified. If a particular value is not needed, leave it at the default setting. If you are unsure about these settings, please contact your network administrator.

⚠IMPORTANT

Incorrectly setting a static IP address can render the device unreachable. Ensure the device is configured correctly, or seek assistance from your network administrator.

Performing a firmware update

Step 1

First browse to https://sorama.eu/dev and check if a firmware update is available for the L642.

If yes, download the specific firmware file for the L642.

⚠ IMPORTANT

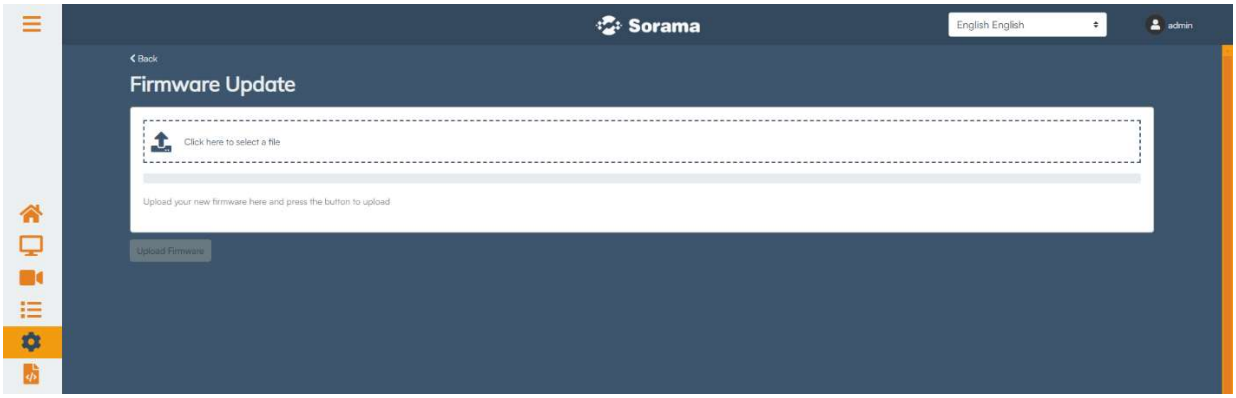
Please note that the L642+ and non-plus L642 models use different firmware update files. Ensure that the correct firmware file is selected for your specific device before performing an update.

Step 2

In the device dashboard go to the “Device Configuration” page and click on Firmware Update.

Step 3

On the Firmware Update page, click “Click here to select a file”. A file selection menu will appear.

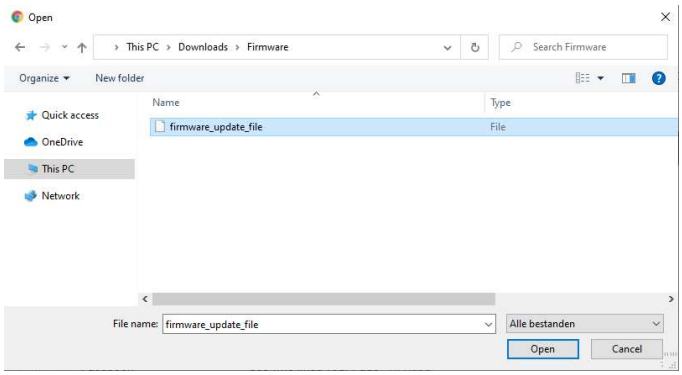


⚠ IMPORTANT

When the unit is updated in Auto-IP mode, the IP address may change. The new IP address can be found using an IP scanner, or the device can be accessed locally using the serial number.

Step 4

Select the firmware file from the file selection menu and click “Open”.



Step 5

Click “Upload Firmware”. A popup window will appear asking you to confirm, click “OK”.

Step 6

First, the file will be uploaded to the device, and the progress bar will indicate the upload progress. Second, the device will install the new firmware, which can take between 1 and 5 minutes, with the progress bar continuing to animate during this process.

Once the firmware update is complete, the progress bar will turn green, and the device will reboot. Wait until the LED on the device turns green again, then refresh the dashboard to start using the device with the new firmware.

Status Indicator LED

The status indicator is a LED on the side of the L642. The LED will light up when the device is powered over Power over Ethernet. The color of the LED resembles different states of the L642.

Color:	State:	Function:
Red	Solid	Starting
Green	Solid	Ready
Blue	Solid	Error state
Purple	Solid	Factory reset initiation phase
Orange	Solid	Performing factory reset

The LED indicator can be turned off through the dashboard. This can be done on the Device Information page as described on page 42.

General Mounting solution

The L642 can be installed in the environment in two main ways. Regardless of the mounting choice, we recommend using the VESA 100 mounting on the back of the unit.

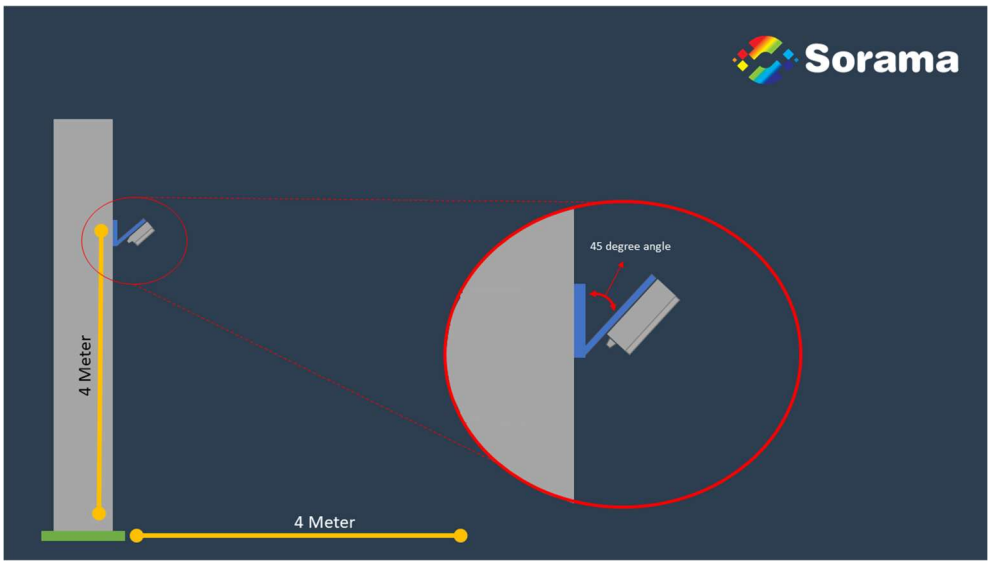
Pole mounted

Sorama has a pole mounting bracket available that can be ordered as a separate accessory which can be connected to a pole mount adapter.

The orientation should be such that the RJ45 connector of the L642 is facing the pole.

Wall mounted

Sorama has a 45 degree wall mounting bracket available that can be ordered as a separate accessory.
The orientation should be so that the RJ45 connector points to the wall.



Mounting height

The mounting height is depending on your situation and differs from area to area. In general, the distance to the area being measured should be:

- Minimum of 4 meters.
- Maximum of 15 meters.
- Outside of these bounds the system will not be able to properly monitor the whole area.
- Inside of these bounds, the area that can be monitored approximately equals twice the mounting height. Example:
    - The L642 mounted at 4 meters high can cover an approximate area of 8x8 meters.
    - The L642 mounted at 8 meters high can cover an approximate area of 16x16 meters.
    - The L642 mounted at 15 meters high can cover an approximate area of 30x30 meters.

⚠ IMPORTANT

No other holes should be drilled in the L642's housing as this will affect the water-resistance capabilities of the device and damage the electrical components inside.

Configuring a L642 to be reachable from the Internet.

The L642 device can be accessed on a local network by default. To enable Internet accessibility, the L642 can be connected to a 4G/5G or fiber router, allowing the device to be used on-site while storing data off-site on a central server. This requires additional configuration, starting with the Internet-facing router.

Router configuration

To enable traffic between the Internet and the L642, configure the router to forward the necessary ports used by the L642. This process, known as Port Forwarding, allows data to pass through the router's firewall. The required ports for the L642 and web dashboard are:

- 80
- 443
- 3478 (UDP)
- 8189 (UDP)
- 8999
- 9011-9018
- 9100

In most cases, this configuration is sufficient. However, if the video stream does not appear on the web dashboard, an API call is required to add the public IP address of the router to the L642 configuration. This API call is available in firmware version 2.18.0 or later. Ensure your device is updated to the specified firmware, available at https://sorama.eu/dev

HTTP API Call:

Use the following PUT HTTP call to configure the internet facing IPv4 address of the router:

http://<L642_IP>:9018/MediaMTXConfigurator

with body: {"allowedIpAddresses":["<xxx.xxx.xxx.xxx>"]}

- <L642_IP>: IPv4 address of the L642
- <xxx.xxx.xxx.xxx>: IPv4 address of the router/SIM card/gateway

Example Command:

curl -X PUT "http://<L642_IP>:9018/MediaMTXConfigurator" -H "accept: application/json" -H "Authorization: Basic YWRtaW46YWRtaW4=" -H "Content-Type: application/json" -d "{"allowedIpAddresses": ["123.245.167.89"]}"

Expected response: 200 OK with body:

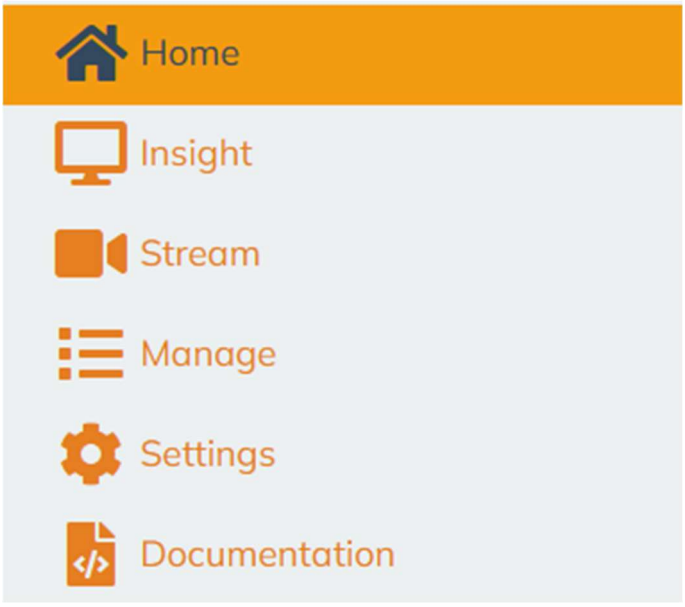
```
{
  "allowedIpAddresses": [
    "123.245.167.89"
  ]
}
```

Authorization: The Authorization string is the L642 username:password encoded in base64. Update the string if the default password has been changed.

Support: For any issues or further questions, please reach out to support at helpdesk@sorama.eu

L642 DASHBOARD

The L642 devices offer comprehensive functionality accessible via the dashboard. All features available on the dashboard can also be utilized directly through the API. To navigate to specific pages, please use the navigation menu located on the left.



INFORMATION

Additional pages may become available when extra feature licenses are activated on the device.

Sign in page

To access the L642 dashboard, open your preferred web browser and navigate to http://<serialnumber>.local. You can find the device's serial number on the label located on the back of the L642. For a device with serial number 100010001, the URL is http://100010001.local. This will connect to the L642 and open the dashboard in your browser, where you will be greeted with the sign-in page.

INFORMATION

If the dashboard does not open using the serial number

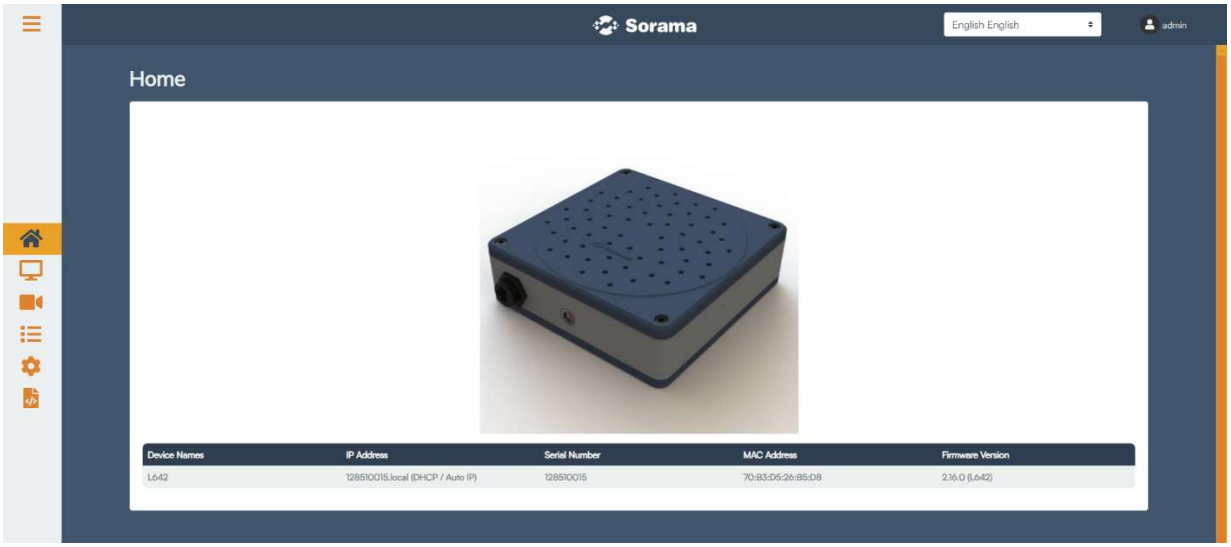
Sometimes your browser may not recognize the device name (for example, http://<serialnumber>.local). In that case, you need to find the device's IP address. Use an IP scanner tool to search your network. This will show all devices connected to your network. Look for the entry that matches your L642 device. Once you have the IP address (for example, 192.168.1.45), type it into your browser like this:

http://<ip address> Example: http://192.168.1.45

This will open the L642 dashboard in your browser.

Home page

Providing the basic information of the L642; name/tag, IP address, serial number, MAC address and firmware version.



The default language for the L642 dashboard is English. You can change the dashboard language using the selection box in the top banner. The following languages are currently supported: English, Chinese (Simplified), Dutch, French, German, Japanese, Korean, and Spanish.

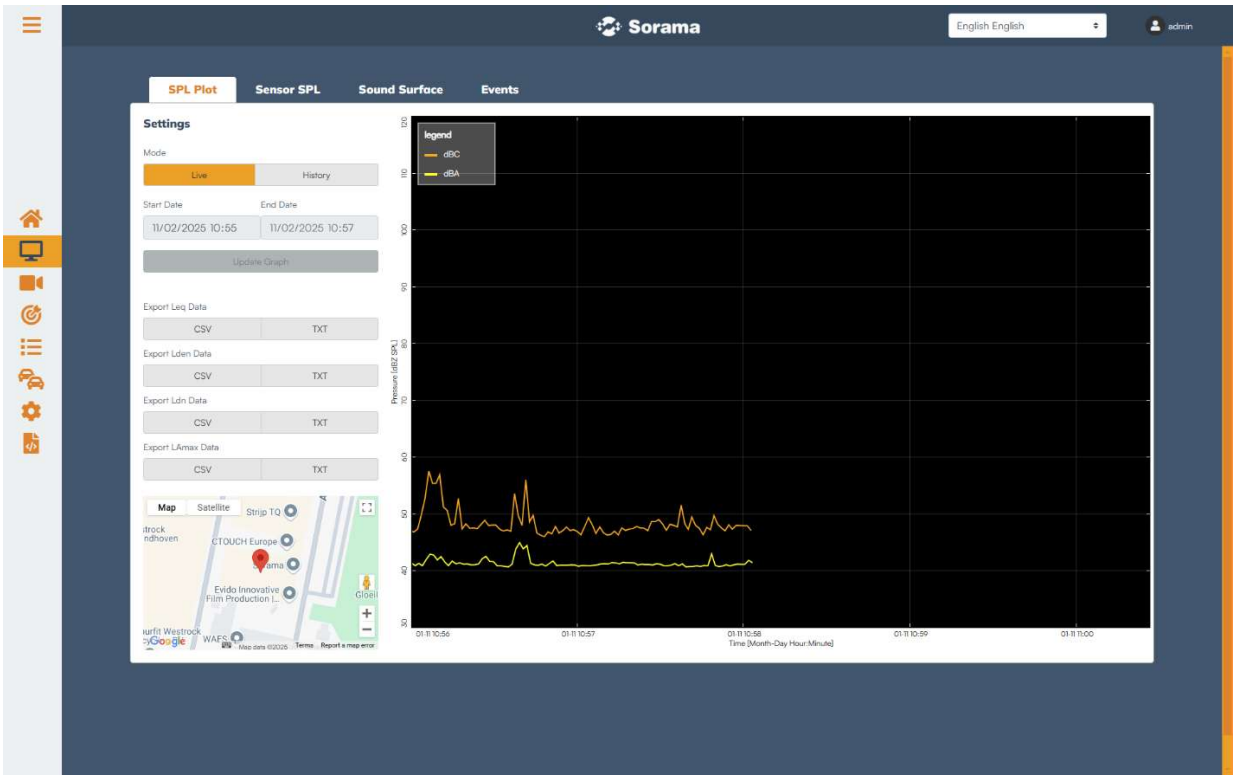
To properly log out from the dashboard, click on the logged-in user in the top right corner and select "Sign out." This will redirect you to the Sign in page.

Insight page

The insight page offers several tabs that provide basic insights into the acoustic data of the device.

SPL Plot

By default, this page shows the measured Sound Pressure Level (SPL) in dB(A) and dB(C) over time. A higher SPL value indicates higher sound pressure.



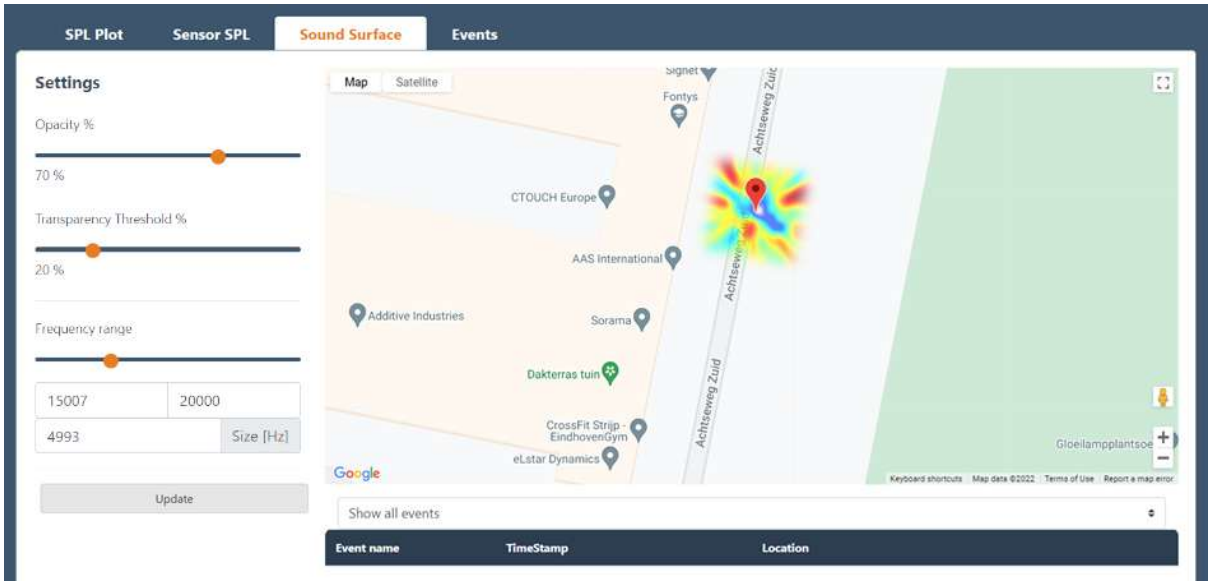
- **Mode:**
  - **Live Mode:** Updates the SPL graph in real-time.
  - **History Mode:** Allows viewing of historic data from the selected start time to the selected end time.
- **Start Date/End Date:** Select the start and end times for the historic plot. After changing the start/end dates, press Update Graph to refresh the plot.
- **Export Leq Data:** Download a file with the currently visualized SPL data in either .csv or .txt format.
- **Export Lden Data:** Download a file with all stored Lden data within the set start and end date in either .csv or .txt format.
- **Export Ldn Data**: Download a file with all stored Ldn data within the set start and end date in either .csv or .txt format.
- **Export LAmax Data:** Download a file with all stored LAmax data within the set start and end date in either .csv or .txt format.

ⓘINFORMATION

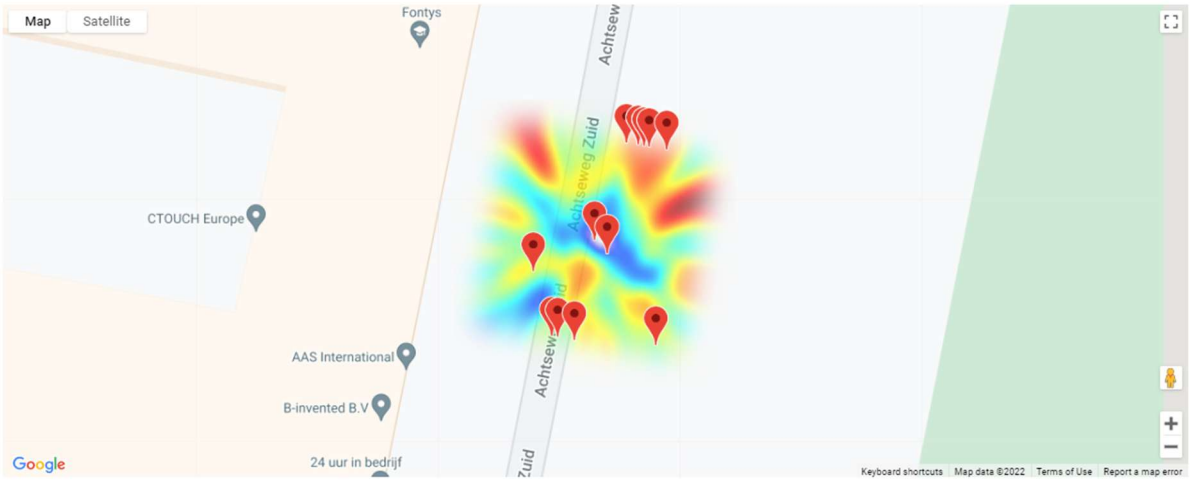
The map displays the location specified in the Device Information settings. To load the map, the L642 requires an active internet connection.

SoundSurface

Each acoustic monitor has a specified GPS position, height, and orientation. The sound pressure level within its monitored area is plotted on a background image (map). An example of the User Interface is provided in the figure below.



- **Opacity** slider: Adjust the opacity slider to make the SoundSurface overlay more opaque.
- **Transparency** slider: Adjust the transparency slider to make lower sound pressure levels transparent.
- **Frequency range** slider: Configure the frequency range for the SoundSurface analysis using the frequency range slider. Press Update to apply the new frequency selection.



Show all events

Event name	TimeStamp	Location
location event	2022-07-28 15:05:28	3964914.95, 378563.6, 4964942.03
location event	2022-07-28 15:05:28	3964914.95, 378563.6, 4964942.03
location event	2022-07-28 15:05:21	3964914.97, 378564.17, 4964941.97
location event	2022-07-28 15:05:21	3964914.97, 378564.17, 4964941.97
location event	2022-07-28 15:05:21	3964914.92, 378563.03, 4964942.09

The Soundsurface page can also show the triggered events and the location of the events.

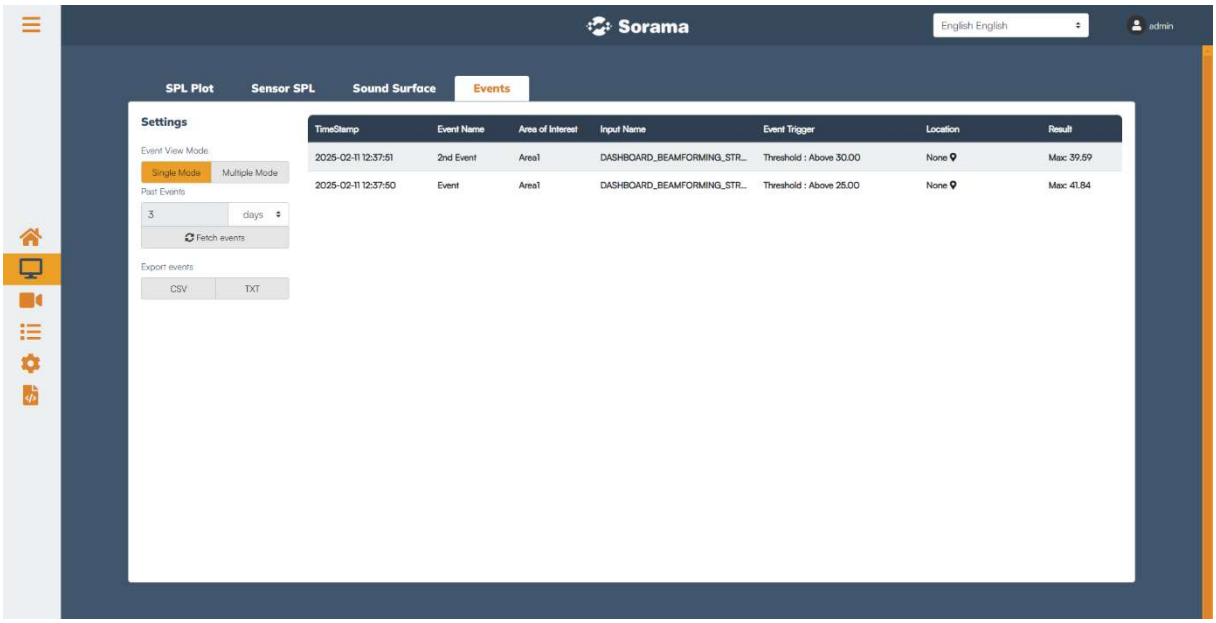
- Logged events are displayed below the SoundSurface image. When an event is triggered on a certain position, the location where this event was triggered is shown on the map. With the dropdown menu, you can choose to:
    - Show all events
    - Show last the event
    - Show no events
- Events can be discarded by clicking the 🗑 icon, or simply turned invisible by unticking the box.

ⓘ INFORMATION

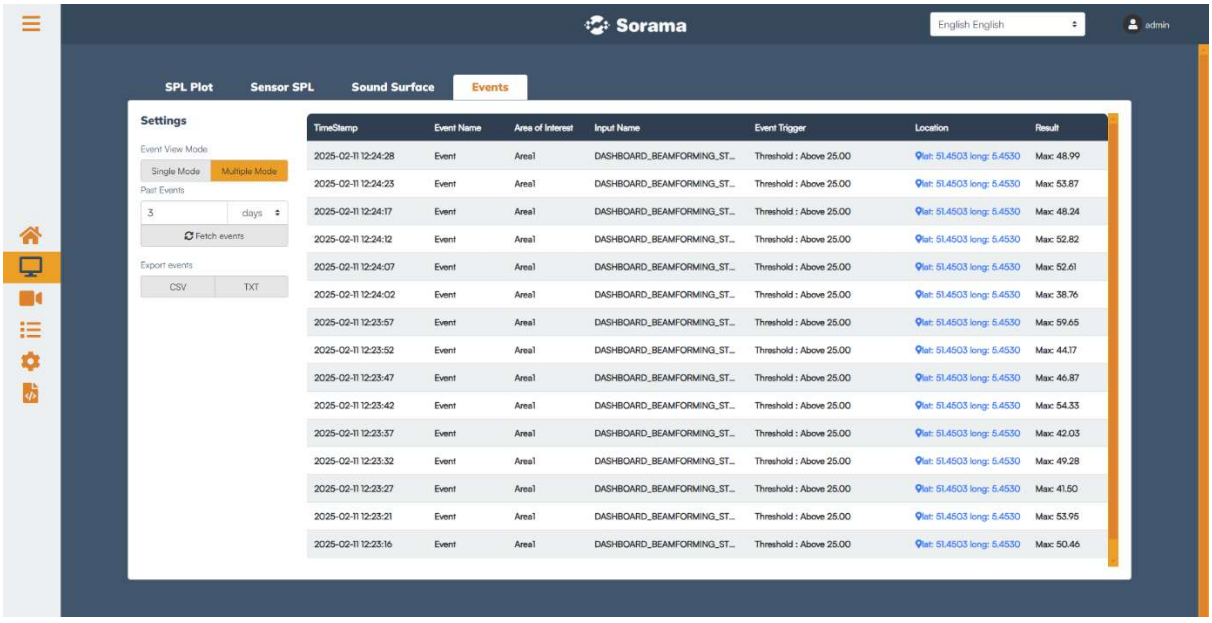
If the beamforming mode is set to "Camera," a warning will be displayed. To resolve this, set the beamforming mode to "Area" on the Device Information page.

Events

Triggered events on the device are displayed on the Events page. If multiple different events have been configured, this page will show all of them in one central location. From this page, it is also possible to export the triggered events data for analysis in other software or to store them offsite for long-term statistics.



In "**Single Mode**", only the latest instance of the triggered event is displayed and refreshed whenever the event is triggered again. More information about events is discussed on the Management page.



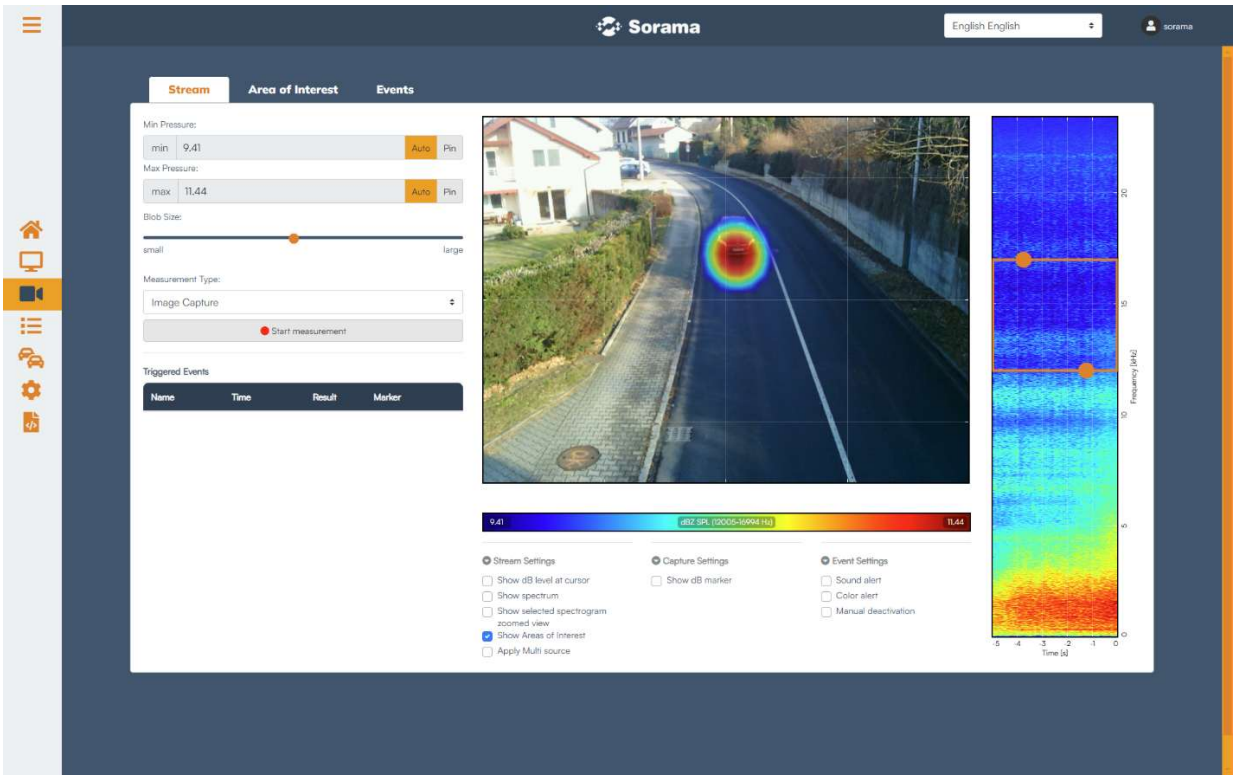
In "**Multiple Mode**", all triggered events are displayed with a timestamp and additional information.

- **Past Events:** Define a timeframe to load past events. Options include loading events from the last set minutes, hours, days, or weeks.
- **Fetch Events:** Load past events for the defined timeframe.
  Export Events: Use the **CSV** button to export events in ".csv" format or the **TXT** button for ".txt" format.

Streaming page

Stream

The streaming page displays the camera feed with the SoundSurface overlay. The live feed indicates the location of the loudest sound within the selected frequency range, which is outlined in orange on the spectrogram. The spectrogram provides information about the detected frequencies, with red colors representing high intensity and blue colors representing low intensity. The sound pressure level within the selected frequency range is shown on the color bar and in the min/max SPL values beneath the stream.



- **Frequency range:** Drag the frequency range to view a different band in the spectrogram on the right. Adjust the frequency range by dragging the orange circles. The minimum frequency range is 2000 Hz wide, and the maximum is 8000 Hz wide.
- **Pin** Min/Max values: Click "Pin" to set the min/max values manually.
- **Auto** Min/Max values: Click "Auto" to automatically rescale the min/max values for optimal visualization of the sound source.
- **Blob size:** Use this slider to decrease the size of the SoundSurface source indicators. This effectively reduces the gap between the min/max SPL values in the SoundSurface,
- **MultiSource Settings:** To enable the multi-source filter, check the "Apply Multi source" option under Stream Settings.
    - **Number of sources:** The number of sources to be displayed by the SoundSurface source indicators.
    - **SNR Threshold:** The SoundSurface source indicators are displayed when the SNR exceeds the threshold value. If no sound sources are detected above the threshold value, no source indicators/blobs will be displayed.
    - **SNR Values:** The SNR values for each source, as indicated in the MultiSource settings (Number of Sources), serve as useful indicators for setting the SNR Threshold value.

- **Measurement Type:** This specifies the type of measurement that will be performed when "Start Measurement" is clicked. All measurements initiated in this manner will be automatically downloaded to the user's computer. They will also be saved on the L642 and accessible via the File Management page. You can optionally enable the dB value marker in the capture settings, as well as choose between the spectrum or spectrogram, depending on the selection in the stream settings.
    - **Image Capture:** Captures an image of the current SoundSurface. The image is in .jpeg format.
    - **Video Capture:** Starts recording a video from the video stream. The recording will stop when the specified duration is reached, or the "Stop Measurement" button is pressed. The video is in .mp4 format and includes audible audio.
    - **Audio Capture:** Initiates a full-frequency range beamformed audio recording. The recording will stop when the specified duration is reached, or the "Stop Measurement" button is pressed. The audio measurement is in .wav format.

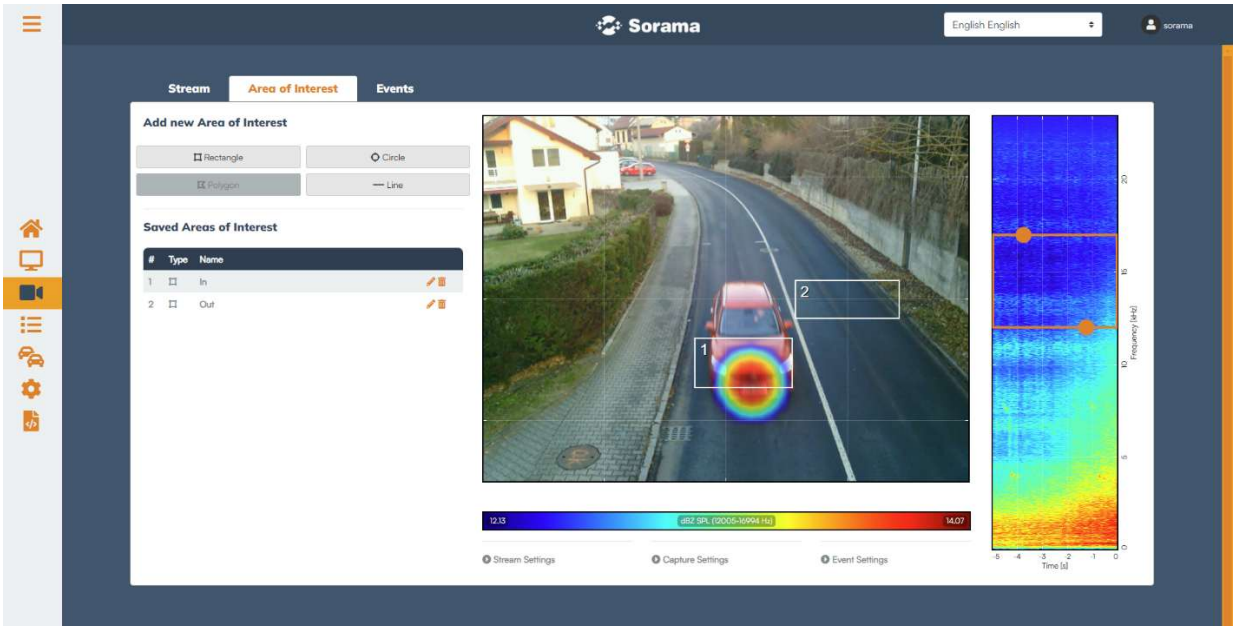
- **Stream Settings:**
    - **Show dB Level at cursor**: Displays the decibel level of the beamforming point when the cursor hovers over it.
    - **Show spectrum:** Changes the time-based spectrogram to a real-time spectrum plot.
    - **Show selected spectrogram zoomed view:** Provides a more zoomed-in visualization of the selected frequency range.
    - **Show Areas of Interest:** Makes the existing Areas of Interest visible in the camera image.
    - **Apply Multi source:** Enables or disables the Multi-Source filter. When enabled, the Multi-Source settings will appear on the left side of the Streaming dashboard.

- **Capture settings:**
    - **Show dB marker:** Displays the dB marker on the most dominant source in image and video captures.

- **Event settings:**
    - **Sound Alert:** Plays a sound when an event is triggered. The sound will be played by the computer/laptop monitoring the dashboard.
    - **Color Alert:** Displays a visual warning in the dashboard stream when an event is triggered.
    - **Manual Deactivation:** Shows any triggered event in the list with a red color until the operator manually deactivates it. This ensures that the issue is actively reviewed before being discarded.

Area of Interest

The Areas of Interest can be configured in the Area of Interest tab, as shown below. Areas of Interest can be used to trigger special alerts when an event occurs in a specific area within the field of view, or to exclude sound sources from other parts of the SoundSurface.



Add New Area of Interest: Create a new area of interest, which can be a rectangle, circle, or line.

- Once the desired shape is selected, draw the area of interest in the video stream.
- The area of interest is automatically saved and can be named by clicking the "pencil" icon.

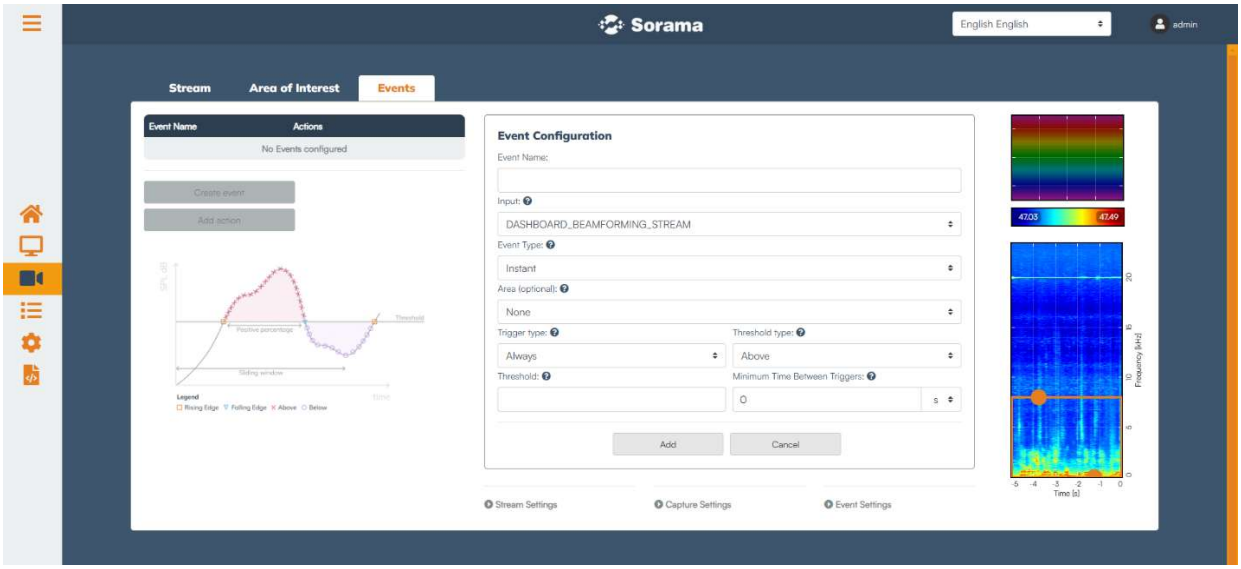
Saved Areas of Interest: To edit an already saved area of interest, select the desired area of interest by clicking it from the list or in the video stream.

- The area of interest is automatically saved after it is moved or reshaped and can be named by clicking the "pencil" icon.
- Delete the area of interest by clicking the "delete" icon.

The maximum number of Areas of Interest is currently limited to 9.

Events

On the Events page, you can configure events based on sound level thresholds. These thresholds can be precisely set for different applications. When the sound level exceeds the specified threshold, an event is triggered. Possible actions triggered by an event include: image capture, video recording & audio measurement. Events and actions can also be configured from the Manage page.



Located on the left side, this list displays all active events on the device

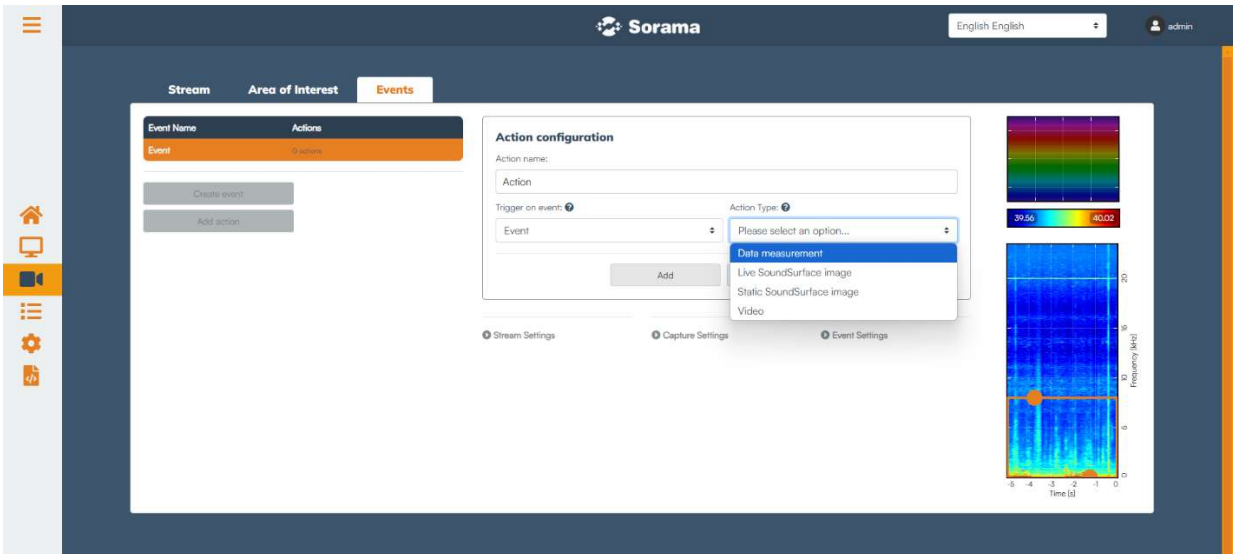
- **Event Name:** The name of the event.
- **Actions:** The number of actions performed when the event is triggered.
- **Create Event:** To add a new event, click the button. The settings for the new event can then be configured on the right side of the dashboard.
- **Add Action:** To add a new action to an event, click the button. The settings for the new action can then be configured on the right side of the dashboard.

The settings for a selected or new event are displayed on the right side of the dashboard.

- **Event Name:** The name of the event, which can be changed after the event configuration is added.
- **Input:** The entity to which this event is added. This can be a measurement or a SoundSurface.
  - If the input is a SoundSurface, an Area of Interest (AOI) can be chosen. This means the event will only trigger when the peak of the SoundSurface is inside the AOI and exceeds the set dB threshold.
- **Event Type:** The type of event. The options are “Instant” and "SlidingWindow”. Depending on the “Event Type” there are other settings available which tell the system when to trigger this event. For the **Instant** event type it are the following settings:
- **Trigger type:** On which edge of the signal to trigger the event. The options are; Always, Rising Edge, Falling Edge & Dual Edge.
- **Threshold type:** When to trigger the event, if the measured output is above or below the specified threshold.
- **Threshold:** the specified threshold, if the measured output exceeds the specified threshold it will trigger the event.
- **Minimum time between triggers:** Defines the minimum time interval between event triggers, functioning as an event rate limiter. If a second trigger occurs before the minimum time after the first trigger has elapsed, the second trigger is ignored and will not generate an event. If this setting is set to zero, the event rate is not limited. The minimum time is capped at 60 seconds.

The SlidingWindow event type allows you to configure two additional parameters:

- **Sliding Window Length:** Defines the time range over which the sliding window is determined. The time should be set between 1 second and 10 minutes.
- **Positive Triggers Percentage:** Specifies the percentage of positive triggered sub-events during the Sliding Window Length required to trigger the actual event.



Actions can be linked to an event and will be executed when the event is triggered. To define an action, click "Add action." Below is a list of possible actions:

- Data measurement (wav)
    - **File name:** The name of the file that will be created. The filename should only contain A-z, a-z, 0-9, _ and - with a maximum length of 32 characters. The timestamp will be automatically added to the filename.
    - **File Format:** The format used to store the data. The default is Wav.
    - **Duration:** The total duration of the audio measurement.
    - **Pre-recording time:** The number of seconds before the event is triggered to include in the recording, at most 5 seconds.

- Live/Static SoundSurface image
    - **File name:** The name of the file that will be created. The filename should only contain A-z, a-z, 0-9, _ and - with a maximum length of 32 characters. The timestamp will be automatically added to the filename.
    - **Pre-recording time:** The number of seconds before the event is triggered to include in the recording, at most 5 seconds.
    - **Frequency range:** The selected frequency range which is visible in the image. When choosing Live SoundSurface image, the frequency selection will be same as the SoundSurface frequency selection.
    - **Frequency visualization:** How the spectral data is visualized in the image. The “Spectrum” will show the instantaneous spectrum, where the spectrogram will show the spectrum data of the past 5 seconds.
    - **Color opacity:** Opacity of the SoundSurface overlay in percentage, with 100% being completely opaque and 0% being completely transparent.
    - **Show dB Marker:** Enables the dB marker showing the peak dB level in the image capture.

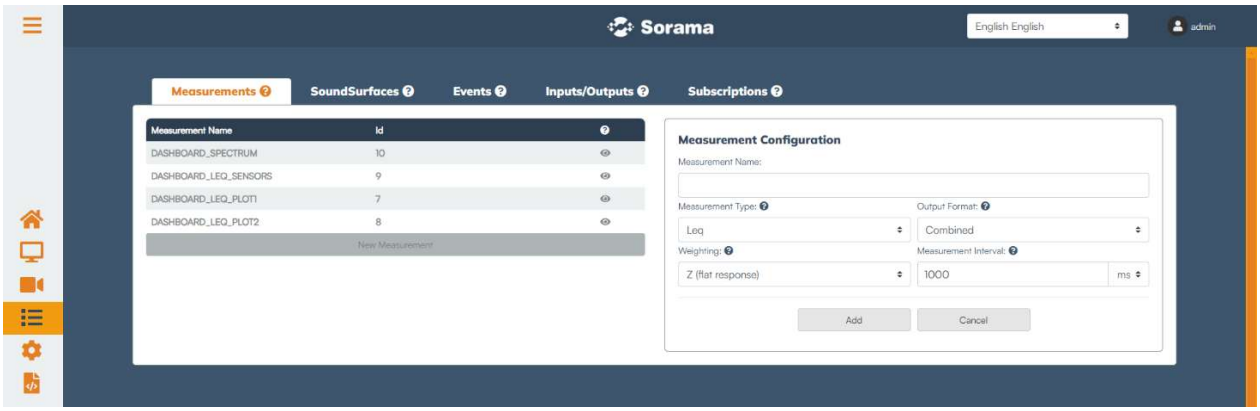
- Video:
    - **File name:** The name of the file that the video will make. Filename should only contain A-z, a-z, 0-9, _ and - with a maximum length of 32 characters. The timestamp will be automatically added to the filename.
    - **Pre-recording time:** The number of seconds before the event is triggered to include in the recording, at most 5 seconds.
    - **Duration:** The total duration of the measurement.
    - **Frequency visualization:** How the spectral data is visualized in the image. The “Spectrum” will show the instantaneous spectrum, where the spectrogram will show the spectrum data of the past 5 seconds.
    - **Color opacity:** Opacity of the SoundSurface overlay in percentage, with 100% being completely opaque and 0% being completely transparent.
    - **Show dB Marker:** Enables the dB marker showing the peak dB level in the video capture.
    - **Frequency range:** The selected frequency range which is visible in the video.

Management page

In the management page, users can view which entities are active and running on the device. There are tabs for different groups of entities. Certain entities created by the dashboard have a visible tag and a flag indicating their status. Entities are categorized into three groups: **Measurements**, **SoundSurfaces** & **Events**.

The **Inputs/Outputs** tab contains all the input & output channels through which the L642 can send its data, including WebSocket and HTTP connections. In the **Subscriptions** tab, you can assign which data from the measurements, SoundSurfaces, and events groups is sent to which output channel. Multiple types of data can be sent to the same output channel through this subscription-based system.

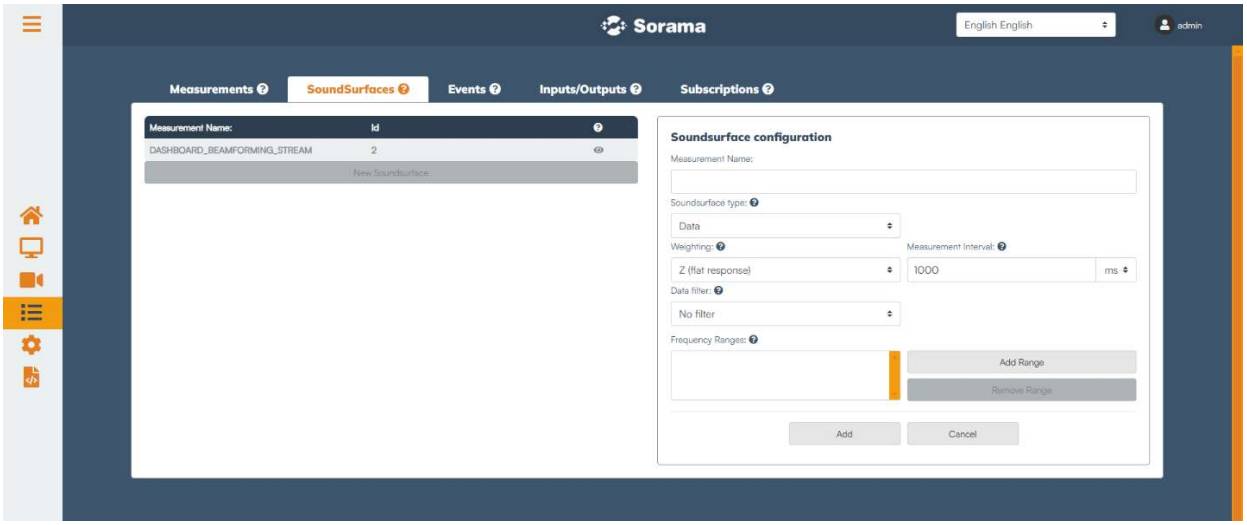
Measurements



- On the left side is a list of all running measurements on the device.
  - **Measurement Name:** A human readable name of a measurement, does not have to be unique. Names starting with “DASHBOARD” indicate that the measurement is used for displaying data in the dashboard.
  - **Id:** The unique number automatically assigned to each measurement. IDs are always unique.
  - The -icon in the last column shows that a measurement is automatically created by the dashboard. An -icon indicates that the measurement is created by the user.
  - **New Measurement:** To start adding a new measurement, click the corresponding button. Then, fill in the settings on the right.

- On the right side, you can see the settings for a selected or new measurement.
  - **Measurement Name:** A human readable name of a measurement, does not have to be unique. Names starting with “DASHBOARD” indicate that the measurement is used for displaying data in the dashboard.
  - **Measurement Type:** The type of measurement. Options are Leq, spectrum or data.
  - **Output Format:** Determines if the measurement will **combine** the 64 channels or returns back 64 individual **separate** results.
  - **Weighting:** Can be used to apply a predefined acoustic weighting to the results.
  - **Measurement Interval:** Defines how often the measurement will produce a result. Audio is averaged over this duration.
  - **Frequency ranges:** Can be selected, edited, added, or removed.
  - **Frequency Resolution:** If the Measurement Type is spectrum, the resolution of the spectrum can be defined. By default, the **Normal** resolution has frequency bins of ~27 Hz wide. When the resolution is set to **High** the frequency bins will be ~1 Hz wide.

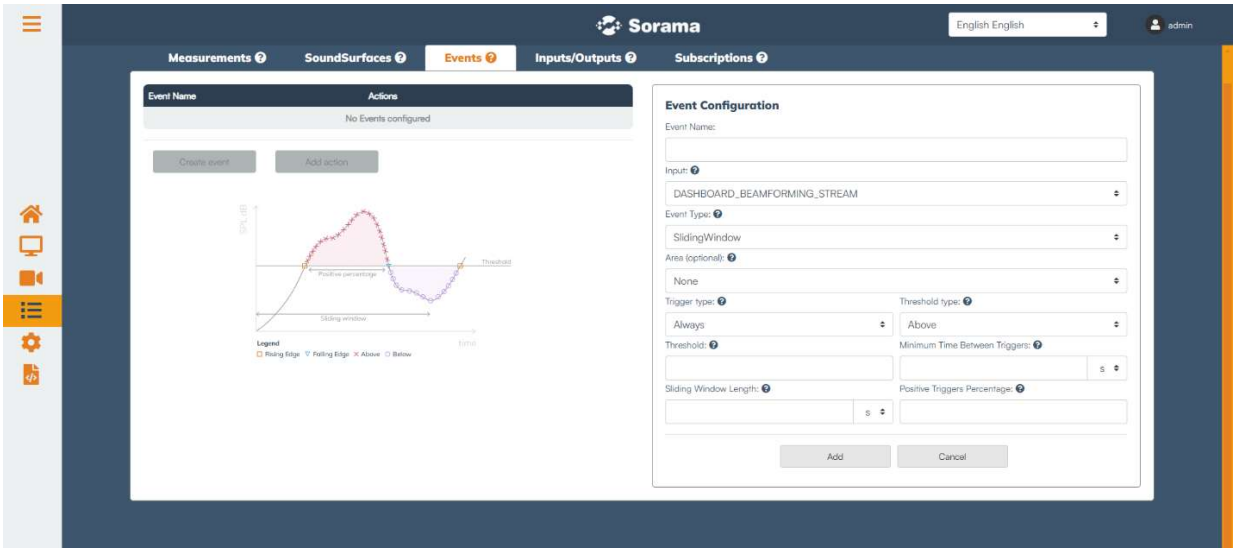
SoundSurface



- On the left side is a list of all active SoundSurfaces on the device.
  - **Measurement Name:** A human readable name of a measurement, does not have to be unique. Names starting with "DASHBOARD" indicate that the measurement is used for displaying data in the dashboard.
  - **Id:** The number automatically assigned to the SoundSurface. Ids are always unique.
  - The -icon in the last column indicates that a measurement is automatically created by the dashboard. An -icon indicates that the measurement is created by the user.
  - **New SoundSurface:** Click to start adding a new SoundSurface. Then, fill in the settings on the right.

- On the right side, you can see the settings for a selected or new SoundSurface.
  - **Measurement Name:** The name of the SoundSurface.
  - **SoundSurface Type:** The type of SoundSurface. Options are Data, Image or Video.
  - **Weighting:** Can be used to apply a predefined acoustic weighting to the results.
  - **Measurement Interval:** Defines how often the SoundSurface will produce a result.
  - **Data filter:** Option to enable to Multi Source filter.
  - **Frequency Ranges:** Can be selected, edited, added, or removed. Note that the device can analyze a maximum range of 8000 Hz.
  - For when "SoundSurface Type" image or Video is selected:
    - **Weighting:** The weighting to apply to the measured frequency content before calculating the result
    - **File Name:** The name of the SoundSurface video file
    - **Opacity:** Opacity of the SoundSurface overlay in percentage, with 100% being completely opaque and 0% being completely transparent.
    - **Frequency visualization:** How the spectral data is visualized in the image. The "Spectrum" will show the instantaneous spectrum, where the spectrogram will show the spectrum data of the past 5 seconds.
    - **Duration:** If Video is selected as SoundSurface type; The total duration of the video.
    - **Show dB Marker:** Enables the dB marker showing the peak dB level in the video capture.

Events



Located on the left side, this list displays all active events on the device

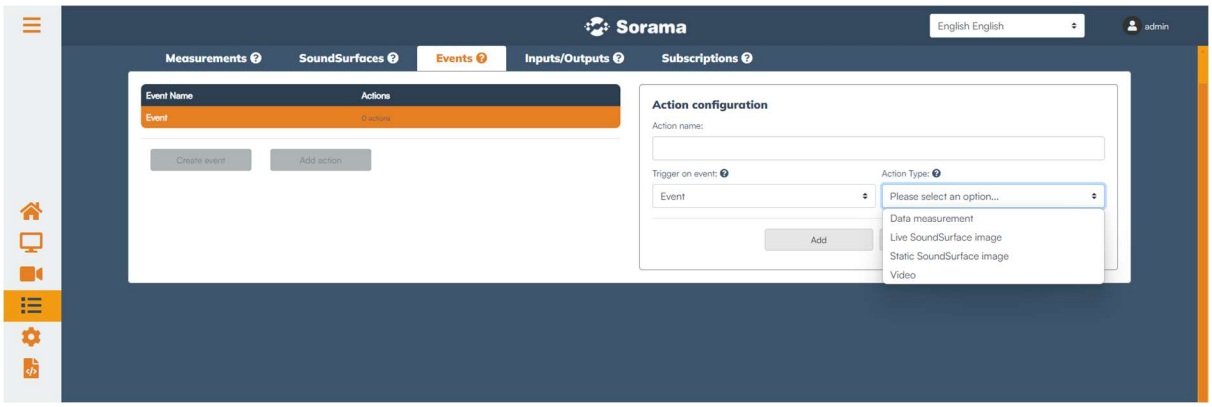
- **Event Name:** The name of the event.
- **Actions:** The number of actions performed when the event is triggered.
- **Create Event:** To add a new event, click the button. The settings for the new event can then be configured on the right side of the dashboard.
- **Add Action:** To add a new action to an event, click the button. The settings for the new action can then be configured on the right side of the dashboard.

The settings for a selected or new event are displayed on the right side of the dashboard.

- **Event Name:** The name of the event, which can be changed after the event configuration is added.
- **Input:** The entity to which this event is added. This can be a measurement or a SoundSurface.
  - If the input is a SoundSurface, an Area of Interest (AOI) can be chosen. This means the event will only trigger when the peak of the SoundSurface is inside the AOI and exceeds the set dB threshold.
- **Event Type:** The type of event. The options are “Instant” and "SlidingWindow”. Depending on the “Event Type” there are other settings available which tell the system when to trigger this event. For the **Instant** event type it are the following settings:
- **Trigger type:** On which edge of the signal to trigger the event. The options are; Always, Rising Edge, Falling Edge & Dual Edge.
- **Threshold type:** When to trigger the event, if the measured output is above or below the specified threshold.
- **Threshold:** the specified threshold, if the measured output exceeds the specified threshold it will trigger the event.
- **Minimum time between triggers:** Defines the minimum time interval between event triggers, functioning as an event rate limiter. If a second trigger occurs before the minimum time after the first trigger has elapsed, the second trigger is ignored and will not generate an event. If this setting is set to zero, the event rate is not limited. The minimum time is capped at 60 seconds.

The SlidingWindow event type allows you to configure two additional parameters:

- **Sliding Window Length:** Defines the time range over which the sliding window is determined. The time should be set between 1 second and 10 minutes.
- **Positive Triggers Percentage:** Specifies the percentage of positive triggered sub-events during the Sliding Window Length required to trigger the actual event.



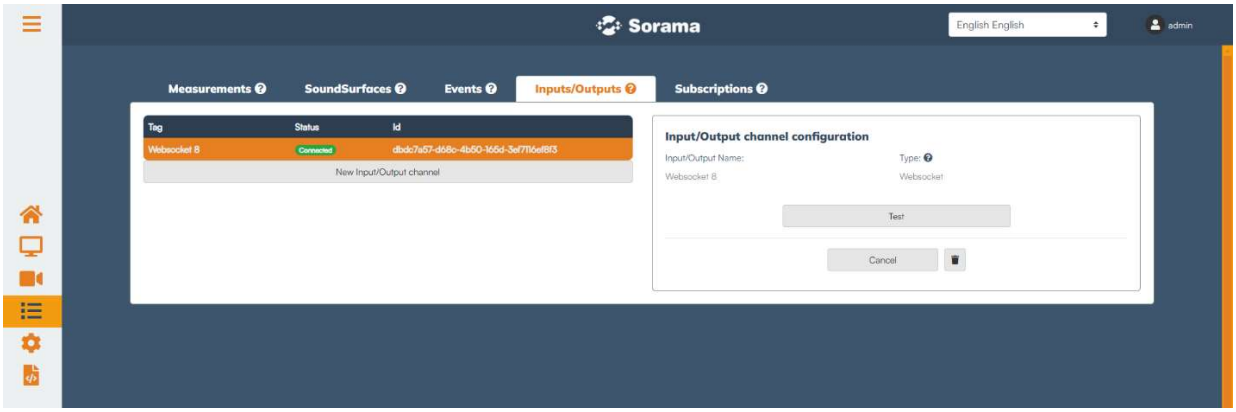
Actions can be linked to an event and will be executed when the event is triggered. To define an action, click "Add action." Below is a list of possible actions:

- Data measurement (wav)
    - **File name:** The name of the file that will be created. The filename should only contain A-z, a-z, 0-9, _ and - with a maximum length of 32 characters. The timestamp will be automatically added to the filename.
    - **File Format:** The format used to store the data. The default is Wav.
    - **Duration:** The total duration of the audio measurement.
    - **Pre-recording time:** The number of seconds before the event is triggered to include in the recording, at most 5 seconds.

- Live/Static SoundSurface image
    - **File name:** The name of the file that will be created. The filename should only contain A-z, a-z, 0-9, _ and - with a maximum length of 32 characters. The timestamp will be automatically added to the filename.
    - **Pre-recording time:** The number of seconds before the event is triggered to include in the recording, at most 5 seconds.
    - **Frequency range:** The selected frequency range which is visible in the image. When choosing Live SoundSurface image, the frequency selection will be same as the SoundSurface frequency selection.
    - **Frequency visualization:** How the spectral data is visualized in the image. The “Spectrum” will show the instantaneous spectrum, where the spectrogram will show the spectrum data of the past 5 seconds.
    - **Color opacity:** Opacity of the SoundSurface overlay in percentage, with 100% being completely opaque and 0% being completely transparent.
    - **Show dB Marker:** Enables the dB marker showing the peak dB level in the image capture.

- Video:
    - **File name:** The name of the file that the video will make. Filename should only contain A-z, a-z, 0-9, _ and - with a maximum length of 32 characters. The timestamp will be automatically added to the filename.
    - **Pre-recording time:** The number of seconds before the event is triggered to include in the recording, at most 5 seconds.
    - **Duration:** The total duration of the measurement.
    - **Frequency visualization:** How the spectral data is visualized in the image. The “Spectrum” will show the instantaneous spectrum, where the spectrogram will show the spectrum data of the past 5 seconds.
    - **Color opacity:** Opacity of the SoundSurface overlay in percentage, with 100% being completely opaque and 0% being completely transparent.
    - **Show dB Marker:** Enables the dB marker showing the peak dB level in the video capture.
    - **Frequency range:** The selected frequency range which is visible in the video.

Input/Outputs

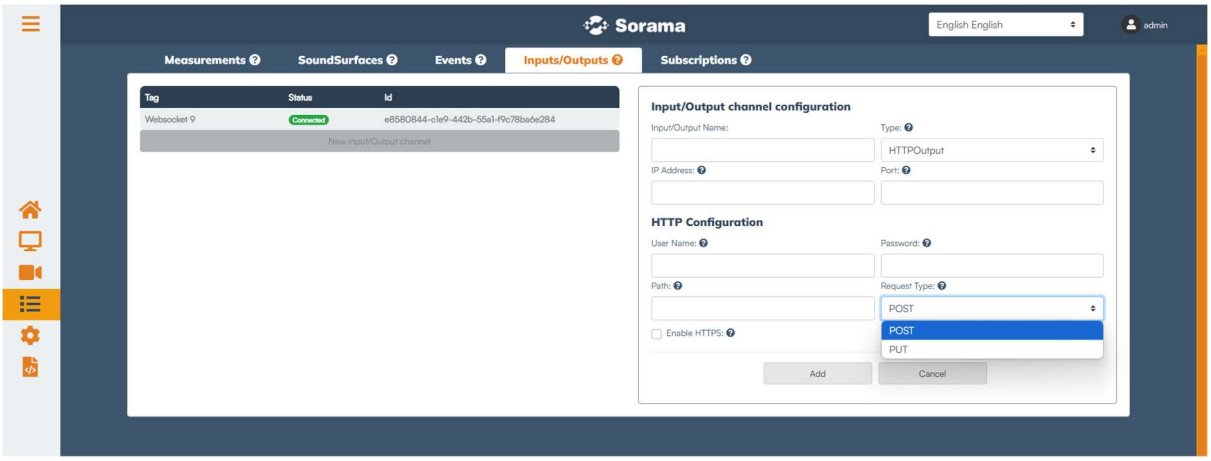


On the Input/Outputs tab, you will see a list of active WebSocket channels, each with a tag and ID assigned by the external creator. You can send a test message through a WebSocket by pressing the "Test" button, and delete a WebSocket channel by clicking the bin icon.

INFORMATION

Additionally, the dashboard uses WebSocket channels internally, so don't be alarmed if the list includes unknown WebSocket channels.

HTTP callbacks



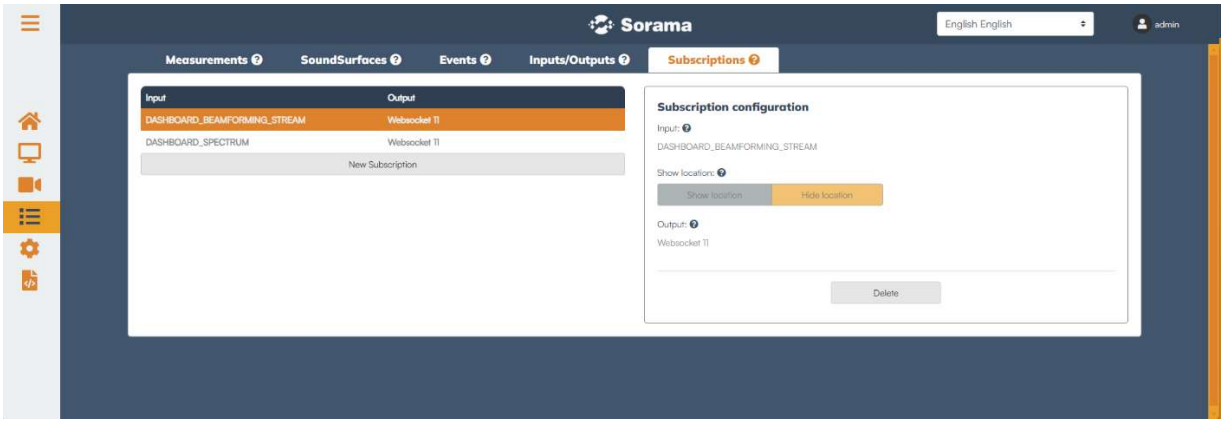
If a valid HTTP callbacks license is present on the L642, it enables the functionality to send data to an external device, computer, or server using HTTP POST or PUT calls. This feature is primarily designed for sending event data, but it can also handle measurement and SoundSurface data. However, if the measurement interval is short and there is a continuous data stream, it is recommended to use a WebSocket connection instead of HTTP calls.

- Input/Output channel configuration:
  - **Input/Output name:** The name of the output channel.
  - **Type:** Output type of the channel. By default: HTTPOutput.
  - **IP Address:** The IP address of the external device, computer, or server where the data needs to be sent.
  - **Port:** The port used on the external device to receive HTTP POST/PUT calls. For example: “9000”

- HTTP configuration:
  - **User Name:** The username used for Basic Authentication in the HTTP POST/PUT call.
  - **Password:** The password used for Basic Authentication in the HTTP POST/PUT call.
  - **Path:** The path on the external device to receive HTTP POST/PUT calls. For example: “/post”

- **Request Type:** The HTTP request type, with options being POST and PUT.
- **Enable HTTPS:** Option to enable HTTPS for the POST and PUT calls to the external device.

Subscriptions



- On the left side is a list of all active subscriptions on the device. The list shows the Input channel with the corresponding Output channel.
  New Subscription: To add a new subscription, click "New Subscription" and fill in the settings on the right.

- On the right side are the settings of a selected or new subscription can be seen.
  - **Input:** The entity which provides data for this subscription.
  - **Show location:** If a SoundSurface data channel is selected as Input, the Show location option appears. As Show location is enabled, it also sends the location of each individual dB value.
  - **Output:** The output channel to which this subscription sends the data, provided by the input.

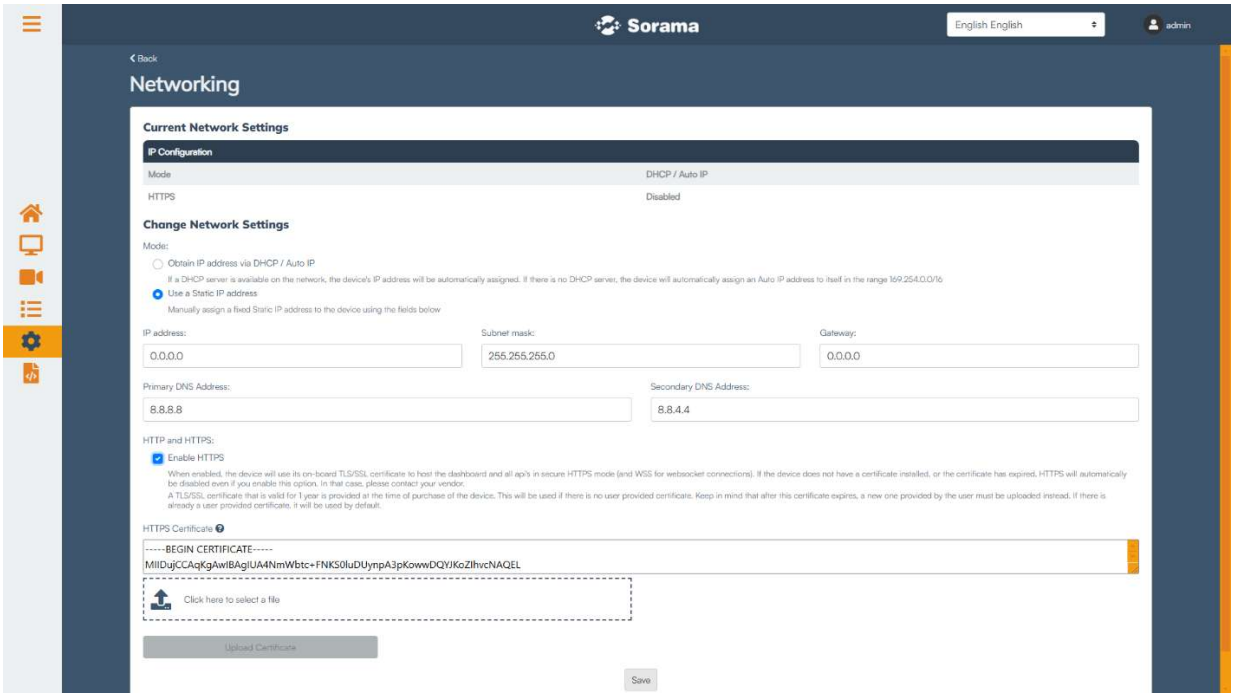
Device Configuration

Users

- Manage Users
  - **Select User:** Select the user accounts on the device. It will provide a list with all accounts. By default there are two accounts: user & admin.
  - **Delete:** deletes the selected user account

- Change Password:
  - To set the password for the selected user, use the "**new password**" and "**confirm new password**" fields.

Networking



- Current Network Settings
  - **IP Configuration:** the current network settings. By default: mode is DHCP/Auto IP and HTTPS is disabled.

- Change Network Settings
  - **Mode:** The network mode of the L642. The options are DHCP/Auto IP or Static IP address.

  If Static IP address is enabled to following options can be configured.

⚠ IMPORTANT

With static IP, the user gets to configure an IP address. This could conflict with an existing IP address within the network, so be careful when using this feature. This can cause the device to become unreachable or cause network problems.

  - **IP Address:** The static IPv4 address of the L642.
  - **Subnet mask:** The subnet mask of the network. By default: 255.255.255.0
  - **Gateway:** The IP address of the gateway in the network. Normally the router/DHCP server in the network.
  - **Primary DNS Address:** The IP address of a public or local DNS server. By default, 8.8.8.8, which is Google's DNS server, needs an active internet connection.
  - **Secondary DNS Address:** The IP address of a public or local secondary DNS server. By default, 8.8.4.4, which is Google's DNS server, needs an active internet connection.

Enable HTTPS: To enable the L642 to use HTTPS and WSS (secure WebSocket) for all connections made to it, select the "Enable HTTPS" option. A valid TLS/SSL certificate is required for HTTPS. If there is no certificate, you can upload a new one in the .pem format. After enabling HTTPS, the device will reboot to apply the changes.

Using the L642 with HTTPS

You can also use the L642 with a secured HTTPS connection, which encrypts the data sent over the connection and provides a more secure way to communicate with the L642 compared to HTTP.

Before this can be done, the client device on which the L642 is monitored (desktop, laptop, etc.) should “trust” the certificate. How to do this is described below:

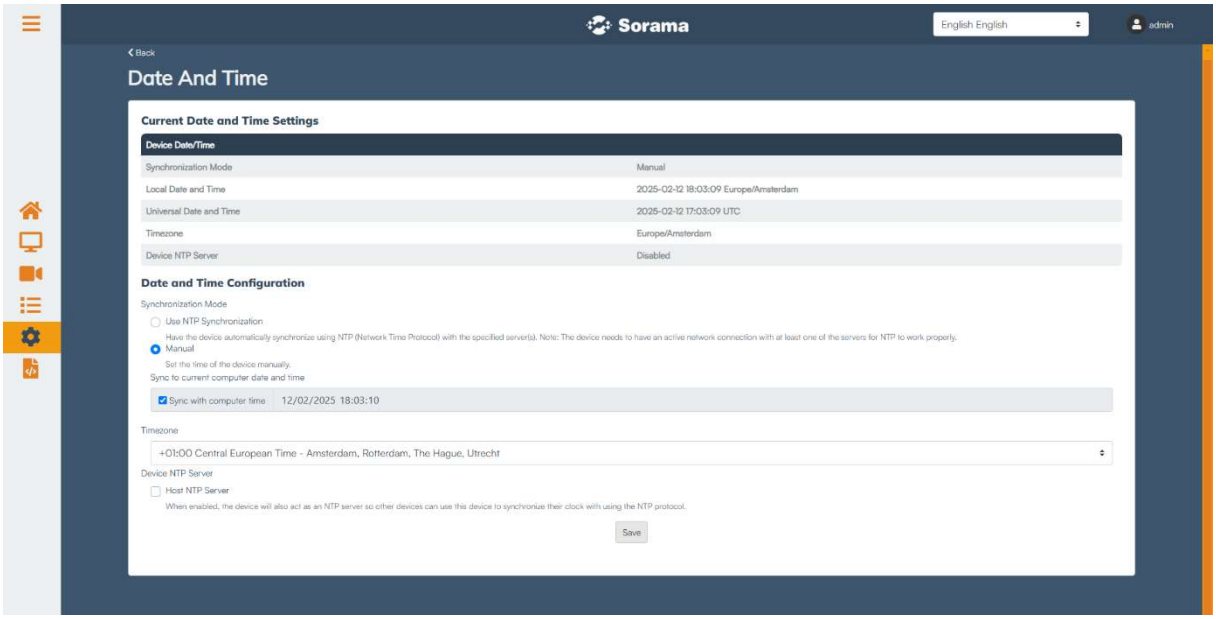
1. Ask you network administrator to provide a self-signed certificate
2. Double click on provided certificate
    - click ‘Open’
    - click 'Install Certificate...”
3. Decide for who to install this
    - “Current User” only for the current logged in Windows user
    - “Local Machine” for everybody using this Windows PC
    - Select the one you want and click “Next”
4. Select the store where to install this certificate
    - Select “Place all certificates in the following store”
    - Then select “Trusted Root Certification Authorities“
    - Click “Finish”
    - (if prompted) Click “Yes” to be sure you trust this Root certificate
5. Your browser will likely need a restart, after that your certificates are ready

Once these certificates are trusted, HTTPS can be enabled. To enable HTTPS, go to Networking on page 39.

ⓘ INFORMATION

When enabled, the device will use its on-board TLS/SSL certificate to host the dashboard and all APIs in secure HTTPS mode (and WSS for WebSocket connections). If the L642 does not have a certificate installed, or the certificate has expired, HTTPS will automatically be disabled even if you enable this option.

Date and Time

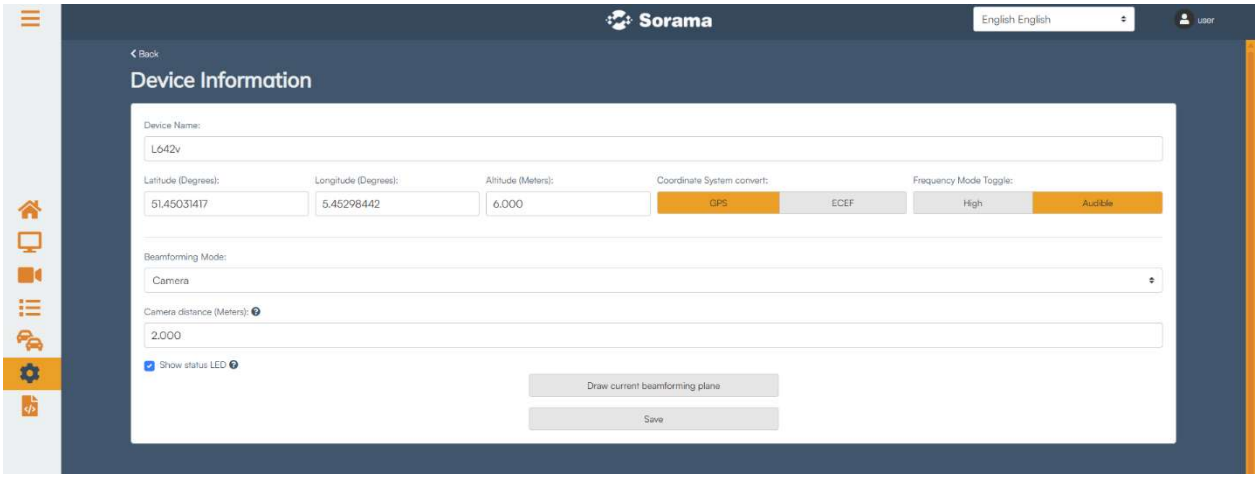


- Synchronization mode:
    - **NTP synchronization:** can be used to synchronize the device's time to a NTP server.
    - **Manual:** It is also possible to set the time manually. Select "**Sync with computer time**" to automatically sync with your device's time or fill in a time manually.

- Timezone: To set the timezone, select the appropriate timezone from the list of all available timezones, matching the current location of the device.

- Device NTP server:
    - **Host NTP Server:** This is useful to have other devices synchronize with the L642's time.

Device Information

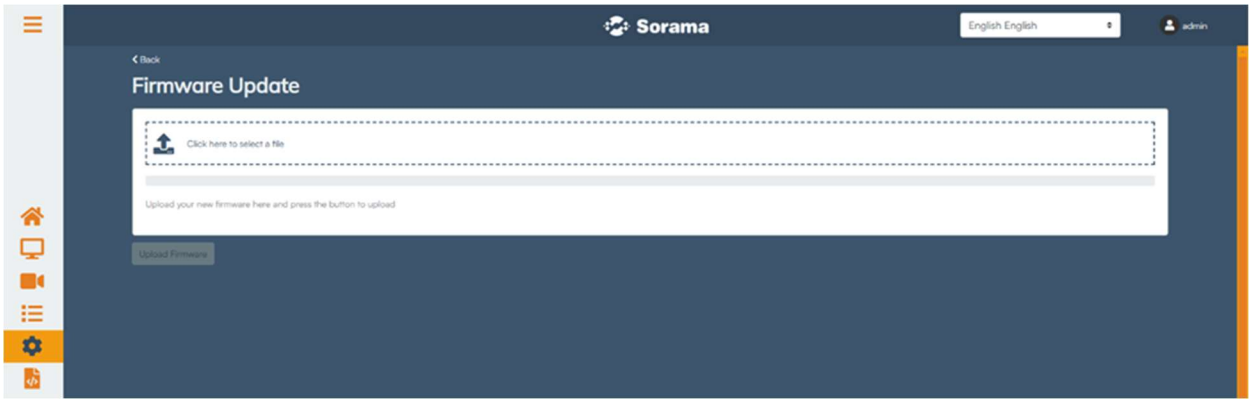


- **Device Name:** the name of the device.
- **Coordinate:** the coordinates of the device in ECEF format.
- **Coordinate System Toggle:** Switches between GPS coordinates and ECEF coordinates for device location.
- **Frequency Mode Toggle:** Switch between the sample rate of the device. **High** enables measured frequencies between 1-~55 kHz. **Audible** enables measured frequencies between 1-~23 kHz.
- **Beamforming Mode:** Specifies the device's beamforming mode. By default, it is set to Camera mode.
- **Camera distance:** Indicates the distance between the device and the beamforming points within the visual camera's field of view. The default setting is 2 meters, but it can be adjusted as needed.
- **Show status LED:** Show the status LED on the L642. If this is unticked, the LED will be disabled during normal operation.

The device information is necessary to create a SoundSurface in camera mode, but most importantly for area mode. The area mode beamforming can be seen in in the SoundSurface tab in the “Insight” page.

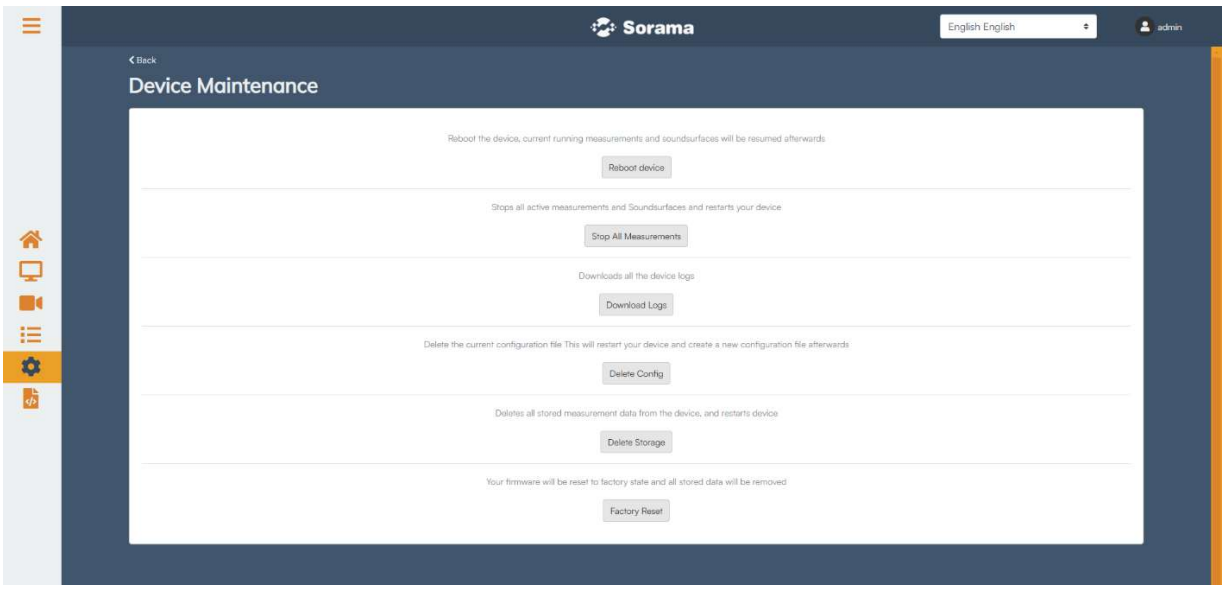
- **Beamforming mode:**
  - **Area mode** is used to create a SoundSurface which can be projected on a selected area. Settings for the device are explained below.
- **Target Size Horizontal/Vertical:** The dimensions in meters of the rectangular area that is to be observed. Horizontal and vertical dimensions correspond with the horizontal and vertical dimensions as seen from the device when the roll is 0°.
- **Latitude/Longitude/altitude translation:** Area translations relative to the device’s position.
  - Positive latitude corresponds with a translation towards the north.
  - Positive altitude latitude corresponds with a translation towards the east.
  - Positive altitude corresponds with the height of the device relative to the area. An altitude translation of 0 means that the area is at the same height as the microphones. As a result the SoundSurface cannot be created.
- **Device Pitch/Yaw/Roll:** Set the orientation of the device.
  - Pitch is the angle in which the unit is facing up or down. When the unit is facing down, the pitch is 0°.
  - Yaw is the orientation compared to the north. When the device has a pitch of 0° and the ethernet cable insert is facing south, the yaw is 0°.
  - Roll is the how much the unit is turned facing an object. In most cases, the roll is 0°.
- **Target Area Pitch/Yaw/Roll:** Set the orientation of the target area:
  - Pitch is the angle in which the target area at a slope. When the target is not at an angle, the pitch is 0°.
  - Yaw is the orientation compared to the north. If the area has the same orientation to the north as the device, the same Yaw should be set.
  - Roll is how far the target is turned facing the unit. In almost all cases, the roll is 0°.
- **Draw current beamforming plane:** Gives a 3D visualization of the area compared to the microphone locations of the device.
  - When new settings are not saved yet, the old settings will be visualized.
- **Save:** Save settings. The device will reboot, and after rebooting, the device will use the new settings to make a SoundSurface.

Firmware Update



For a detailed description on performing a firmware update, see page 14.

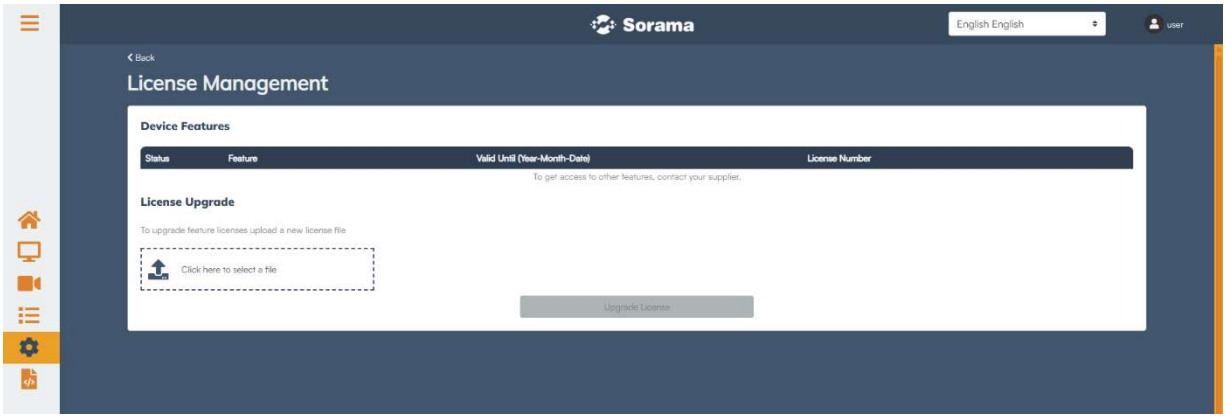
Device Maintenance



- **Reboot device**: Restarts the L642, measurements and SoundSurfaces resume afterwards.
- **Stop All Measurements**: Stop and delete all measurement (e.g. Measurements and SoundSurfaces) and Event configurations from the device and reboot.
- **Download Logs:** Download the device logs. When contacting support, please attach the device logs to the email.
- **Delete Config:** Deletes the configuration file of the L642. Resets the device to default settings and reboot.
- **Delete Storage:** Deletes all stored measurement data and reboot.
- **Factory Reset**: Deletes the configuration and measurement data of the L642. The device will retain the current firmware version and reboot.

License management

The License Management page displays the activated licenses on the device. This page also allows for the upload and activation of new licenses.



Device features:

- **Status:** Status of the license. ✗ means an unactive license. ✓ means that the license is valid and active.
- **Feature:** Name of the featured license.
- **Valid until:** Date when the license expires.
- **License number:** Displays the specific license number. If a license is built-in, it will be shown here.

License Upgrade**:** Here a new license can be uploaded.

- **Upload license:** opens the file explorer, select the license .lic file and upload.
- **Upgrade license:** Uploads the new license to the L642 and enables the licensed feature. A single license file can enable multiple licensed features.

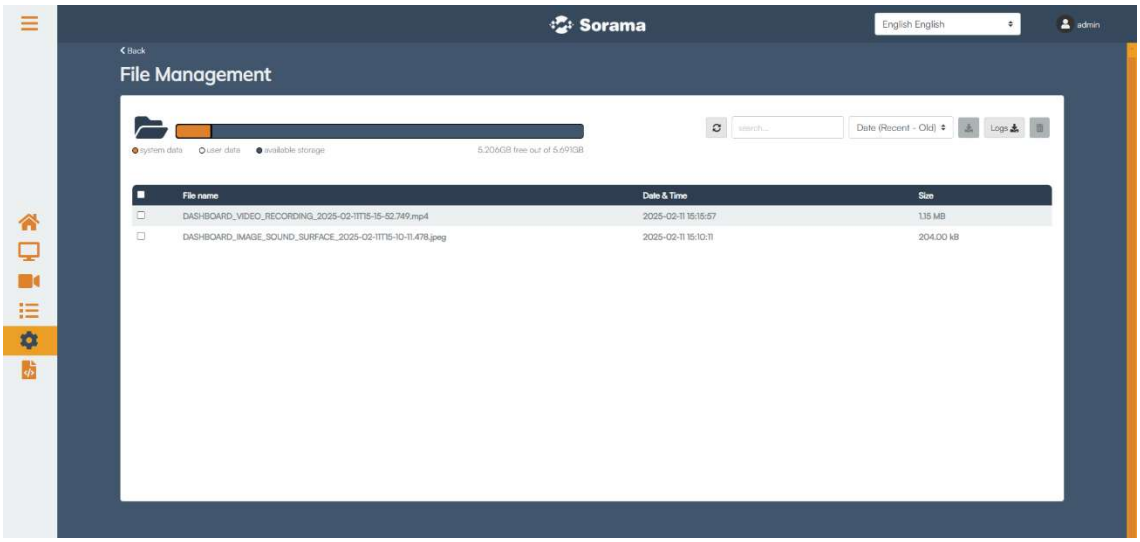
File Management

All stored files can be accessed via the File Management page.

The internal storage operates on a FIFO (First In, First Out) basis and has a total capacity of 5.5 GB. When the available free space drops below 500 MB, the oldest file is automatically removed. As a result, the effective usable storage available to the user is 5 GB for storing files and measurements.

⚠ Warning - Automatic File Deletion

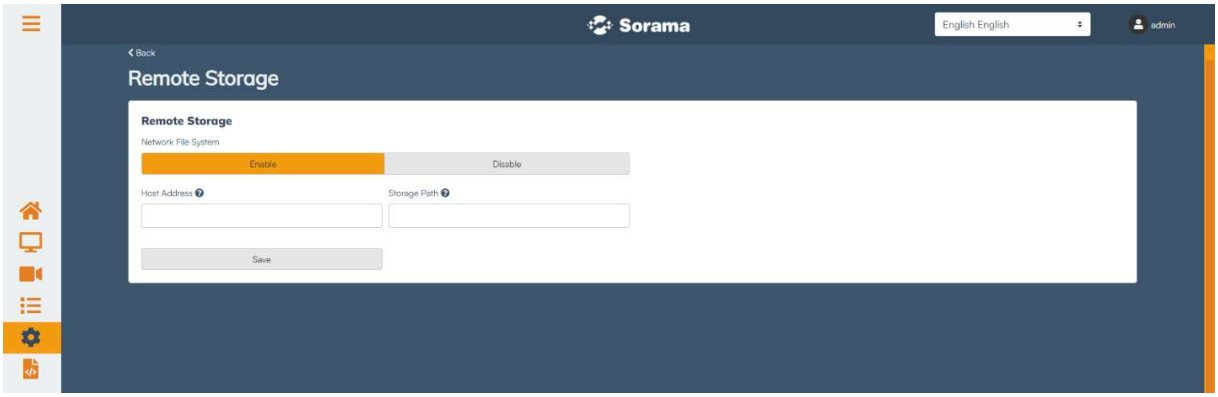
Files are deleted automatically when storage space is limited. If measurements need to be retained, ensure they are regularly downloaded or backed up to an external system.



- **File name:** The name of the file.
- **Date & Time:** Date and time of when the file was created.
- **Size**: The size of the file.
- : Click the “Refresh” button to refresh the page and see if here are any newly save files.
- **Search bar:** Files can be searched by name by using the search bar.
- **Sort by**: Click the “Filters” button to sort the files by name, by date, or by size in ascending or descending order.
- : Click the “Download” button to download the currently selected files.
- Logs : Click the “Logs” button to download all the logs from the device.
- : Use the “Delete” button to delete the selected files.

Remote Storage

To set up remote storage, use the Remote Storage Settings. Currently, only Network File System (NFS) servers are supported.



- When this feature is enabled, all files in the file manager will be copied to the remote storage server every minute. The files will still be saved on the device until the device storage is full, at which point the oldest file will be deleted.
    - **Host Address:** this is the IPv4 address of the NFS host server.
    - **Storage Path:** the file path on the NFS server where the files will be saved.

(API) Documentation

This page contains documentation on the L642 device, intended for advanced development and integrations with third-party systems or software. The Sorama API is based on an HTTP REST API, with all calls communicated via HTTP or WebSocket. The device hosts the following documents:

1. Authentication API
2. Device Management API
3. Sound Source Detection API
4. Loud Vehicle Detection API (available only if the **LVD license** is activated)
5. Loud Vehicle Detection user manual PDF (available only if the **LVD license** is activated)
6. MediaMTX Configurator API
7. License Client API
8. User manual PDF (this document)
9. Quick Start Guide PDF

Please visit our website for more information:

www.sorama.eu/dev

TROUBLESHOOTING

After the firmware update the L642 is not working properly

As a best practice, navigate to Device Maintenance and select “Stop All Measurements.”

⚠ **CAUTION: This action will remove all running measurements, SoundSurfaces, configured events, and areas of interest, and restarts the L642. When the device restarts, it will automatically create the measurements and SoundSurfaces required for the dashboard.**

Streaming page does not show SoundSurface™ overlay or spectrum

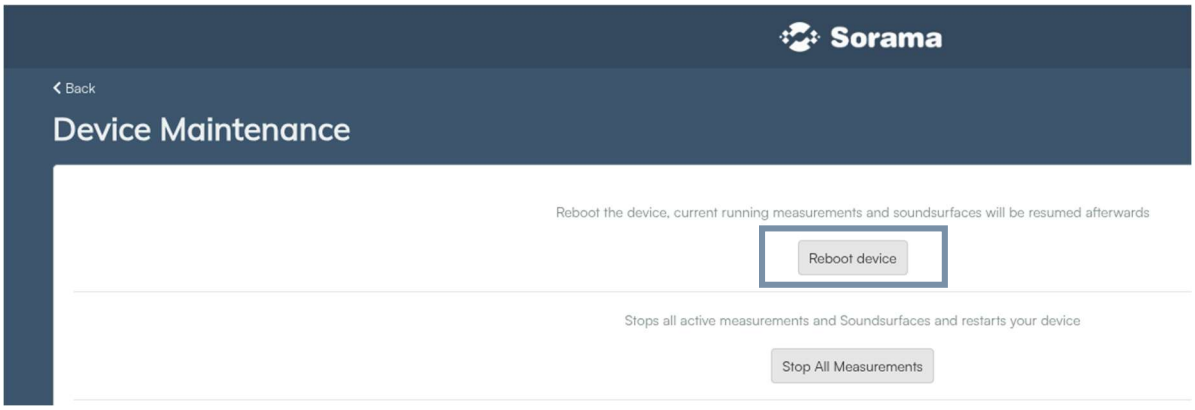
There may be a significant difference between the time displayed on the L642 and the time on your PC. To resolve this, you can set the device time to match your PC's time. Refer to the "Date and Time" section on page 41 for detailed instructions.

I set a certain reporting interval, but data is returned at a slower rate

It is possible that a selection of measurements and SoundSurfaces is selected which the device is not able to run live. Usually this happens if 2 “Data” SoundSurfaces are active. Remove one of them and give the device a restart. If it still persist, also remove other measurements and reboot the device.

How do I restart my device without removing power

For Dashboard users, the easiest way is to go to the Device Maintenance page and press “Reboot device”. This will reboot the device. The device can also be rebooted with an API call. To get more details about this call please refer to the device management API documentation.



How do I factory reset my devices without the dashboard or API

The device can be factory reset manually, without the use of the dashboard. Only use this method in case the dashboard and API cannot be accessed. Use the following steps to reset the device:

1. Power cycle the device
2. Wait for the LED to become purple.
3. Repeat step 1 and 2 five times.
4. The fifth time the LED should become orange after a very brief color of purple.
5. Wait for the device to reboot itself.
6. After rebooting the LED should become green again.