



NoiseScout

USER MANUAL

© 2018 NTi Audio AG
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July 06, 2018

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Introduction

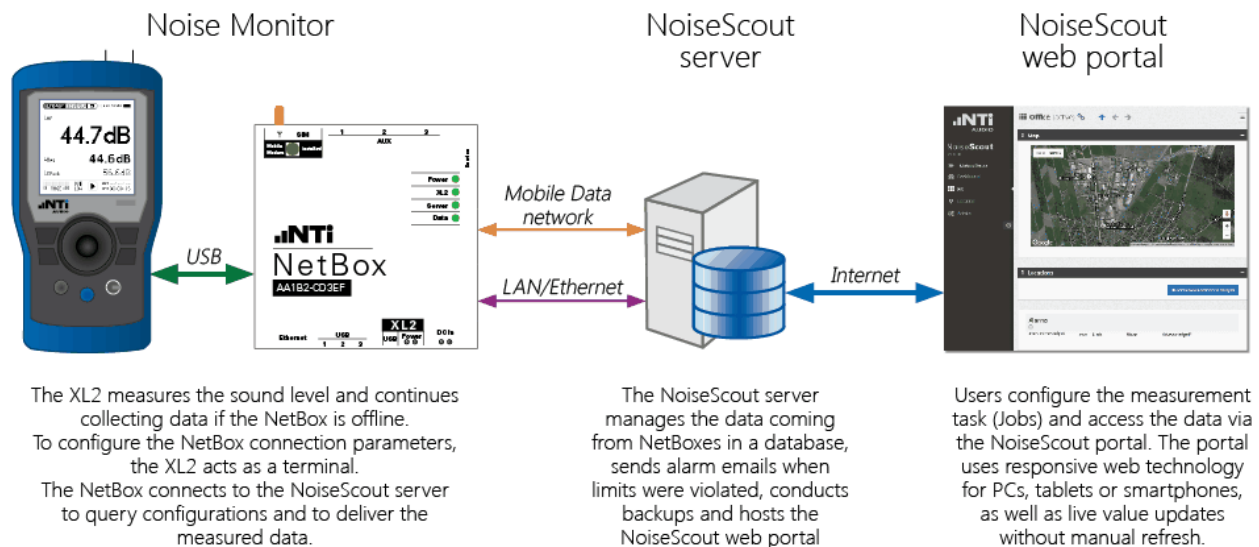
1 Introduction

NoiseScout provides a comprehensive but easy-to-use 24/7 noise monitoring solution. Noise levels are recorded on-site by the XL2 Sound Level Meter and are available for remote monitoring and download. It can be operated in two different modes, **Managed and Gateway**.

A. Managed Mode

The selected sound levels are continuously recorded, monitored and buffered on-site by the XL2 Sound Level Meter. From there they are uploaded via the NetBox to the NoiseScout server and made available for online live visualization. In case of noise issues, automated email alerts inform the user, thus enabling you to address the noise issue before a non-compliance condition arises.

Thanks to the internal buffer of the XL2, the acquired noise data remain available even in case of a power failure or data connection failure. As soon as the connection from the NetBox to the NoiseScout server is re-established, all data are automatically synchronized without affecting the ongoing measurement.



B. Gateway Mode

The Gateway Mode is an alternative to the Managed Mode. It provides direct access to the XL2 Sound Level Meter screen and data. The internet connection allows SFTP (Secure File Transfer Protocol) and remote access to the XL2. All data files can be retrieved remotely from the remote XL2 Sound Level Meter even during an ongoing measurement. Also, the spectral data and audio files can be directly downloaded from the remote XL2.

The remote access allows full control of the XL2 Sound Level Meter. All remote measurement commands available on the XL2 are supported. For example, the current measurement data may be captured in real time into a computer application, e.g. C#, MS Excel or LabView.

You may program a customized measurement application for remote sound level monitoring, audio analysis or automated measurement tasks. This offers the freedom to start and stop the

online noise monitoring from your office or your mobile device; a useful tool for complete control.

NOTE *The explanations provided hereunder refer to the Managed mode only. For more information regarding Gateway mode, please refer to the corresponding [User Guide](#).*

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1.1 System requirements

- XL2 Sound Level Meter: firmware V3.11 or higher, and SD-card with minimum 8 GB

Hint The [audio file recording](#)^[36] is only supported for XL2 with firmware V3.33 or higher

- Microphone; choose from NTi Audio M2230, M2211, M2215 M4260 or M4261, with ASD cable (*optional*)
- USB cable from NTi Audio (with ferrite)
- NetBox (includes 10 days data credits by default)
 - Mobile Data modem, antenna + SIM card (*optional - factory installation*)
- Power supply 7.5 – 16 VDC, ≤ 9 W (e.g. mains power adapter, solar panel, battery)
- Internet connection
 - LAN / Ethernet (with DHCP compatible router)
 - Mobile Data communication (*optional*)
- Web browser capable device such as PC, Tablet or Smartphone
- NTi Audio Data Explorer software (*optional*)

Hint *NoiseScout is optimized to work with the Google Chrome web browser; using another browser may affect the look and significantly decrease the speed of the web site (download the latest version of Chrome [here](#))*

1.2 Product safety & legal information

Operational safety

- Those who, as a result of their physical, sensory or mental capabilities or lack of experience or knowledge, are not in a position to use the product safely must not be allowed in the vicinity of the product without supervision or instruction by a person responsible for their safety.
- Never open the housing of the NetBox, XL2 or the charger.
- Do not insert any object into the ports or openings of the NetBox, XL2 or charger.
- Exposing the device to electrostatic discharge can interrupt the data transfer between the device and the network or impair the functions of the device. Should this happen, disconnect the device from the power supply and the USB port and reconnect it or rebuild the network connection from scratch.
- Protect the device from extremely high or low temperatures, condensation or moisture.

Repair

- No parts inside the device require maintenance or cleaning.
- Should the device become wet, turn it off immediately. Ensure the device is checked for operational safety before using it again.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Maximum modem transmission power

- Class 4 (2 W, 33 dBm) @ GSM 850 / 900
- Class 1 (1 W, 30 dBm) @ GSM 1800 / 1900
- Class 3 (0.25 W, 24 dBm) @ UMTS
- Class E2 (0.5 W, 27 dBm) @ EDGE 850 / 900
- Class E2 (0.4 W, 26 dBm) @ EDGE 1800 / 1900

FCC user information

FCC 15.21

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Part 15 statement according to FCC 15.19/RSS gen issue 3 sect. 7.1.3

This device complies with Part 15 of the FCC Rules and with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

1.3 License agreement

Scope

This End-User License Agreement ("EULA") is a legal agreement between you (either an individual or a single entity) and NTi Audio AG ("NTi Audio"). By installing or using the NTi Audio software, content or documentation (collectively the "NTi Audio software") accompanying this EULA, you accept these terms and are consequently bound to them. If you do not agree to the terms of this EULA, do not install or use the NTi Audio software.

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This EULA also applies for all upgrades or updates to the NTi Audio software (if any), supplements, internet-based services, and support services for this NTi Audio software, unless other terms accompany those items. If so, those terms will govern.

License Uses and Restrictions

- A. Software Installation: Subject to the terms and conditions of this license agreement, you are granted a limited, non-exclusive license to use and run the NTi Audio software. Data transfer from an XL2 Audio & Acoustic analyzer to the NTi Audio software is only enabled if the corresponding license is installed on the analyzer.
- B. No Reverse Engineering: You may not and you agree not to, or to enable others to, copy (except as expressly permitted by this license agreement or by the usage rules if they are applicable to you), publish, distribute, decompile, reverse engineer, disassemble, attempt to derive the source code of, decrypt, modify, or create derivative works of the NTi Audio software or any services provided by the NTi Audio software, or any part thereof.
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The NTi Audio software may enable access to NTi Audio and third party services and web sites (collectively and individually, "NTi Audio services"). Such NTi Audio services may not be available in all languages or in all countries. Use of these NTi Audio services requires internet access and use of certain NTi Audio services may require an NTi Audio ID, may require you to accept additional terms and may be subject to additional fees. By using this software in connection with an NTi Audio ID or other NTi Audio account, you agree to the applicable terms of service for that account.

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- E. In no event shall NTi Audio be liable for personal injury, or any incidental, special, indirect or consequential damages whatsoever, including, without limitation, damages for loss of profits, loss of data or information, business interruption or any other commercial damages or losses, arising out of or related to your use or inability to use the NTi Audio software or services or any third party software or applications in conjunction with the NTi Audio software or services, however caused, regardless of the theory of liability (contract, tort or otherwise) and even if NTi Audio has been advised of the possibility of such damages. In no event shall NTi Audio’s total liability to you for all damages exceed the amount of ten US dollars (USD 10.00). The foregoing limitations will apply even if the above stated remedy fails of its essential purpose.

Separate Provisions

If any provision of this EULA shall be held to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall in no way be affected or impaired thereby.

Privacy

At all times your information will be treated in accordance with NTi Audio’s privacy policy, which is incorporated by reference into this license agreement and can be viewed at <http://www.nti-audio.com/privacy-statement>

Controlling Law

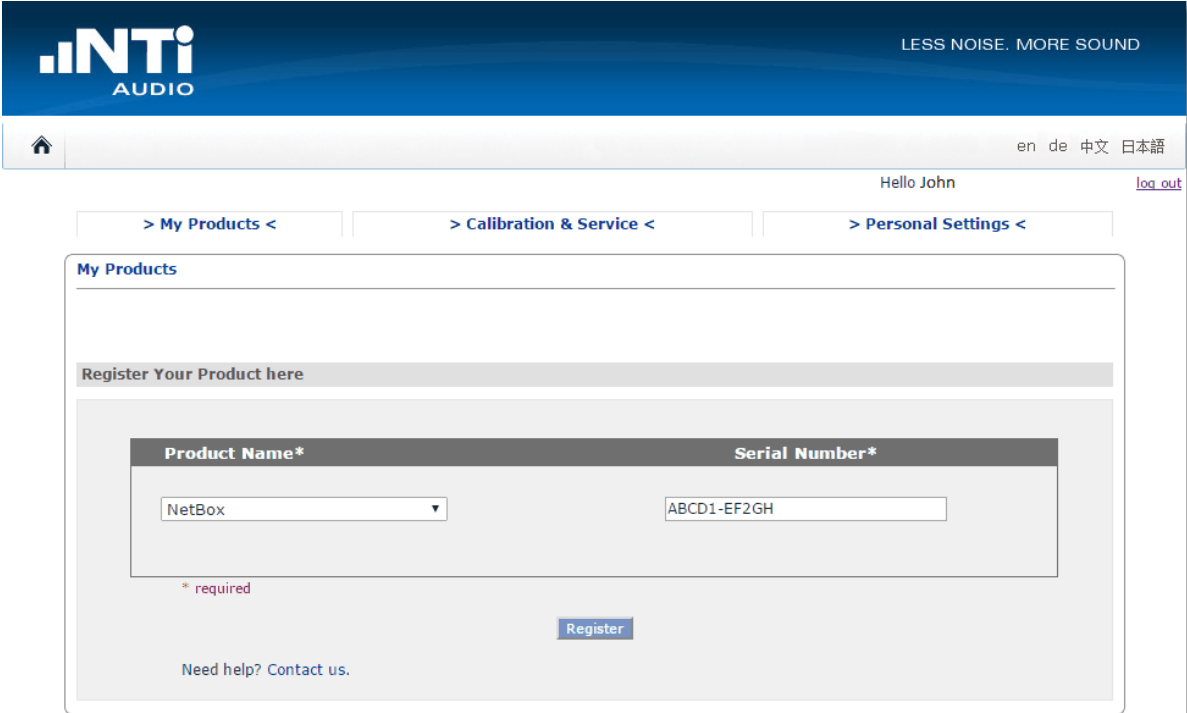
This license agreement will be governed and construed in accordance with the laws of Liechtenstein, Europe, excluding its conflict of law principles. No amendment to or modification of this EULA will be binding unless in writing and signed by NTi Audio. The English version of this EULA shall govern, to the extent not prohibited by local law in your jurisdiction.

1.4 Tutorial

This chapter describes step-by-step how to install and operate a NoiseScout system.

a) Register your NetBox

- Log in at <http://my.nti-audio.com>
- Select 'NetBox' from the pulldown-menu 'Product Name'
- Enter the serial number of your NetBox
- Click on 'Register'



The screenshot shows the NTi Audio website interface. At the top, the NTi Audio logo is on the left and the slogan "LESS NOISE. MORE SOUND" is on the right. Below the logo is a home icon and language options: "en de 中文 日本語". The user is logged in as "Hello John" with a "log out" link. The main navigation bar includes links for "> My Products <", "> Calibration & Service <", and "> Personal Settings <". The "My Products" section is active, displaying a "Register Your Product here" form. The form has two fields: "Product Name*" with a dropdown menu showing "NetBox" and "Serial Number*" with a text input field containing "ABCD1-EF2GH". A red asterisk indicates that both fields are required. Below the form is a "Register" button and a link for "Need help? Contact us."

b) Set up the Noise Monitor (XL2 + NetBox)

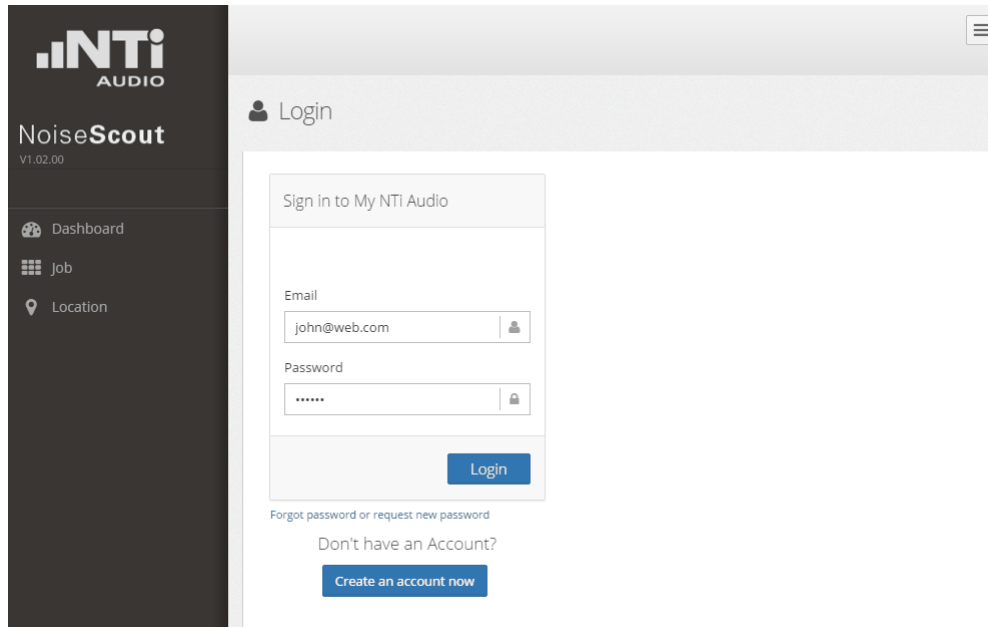
Follow the instructions given in chapter [Noise Monitor](#)¹⁹⁾

c) Connect the NetBox to the internet

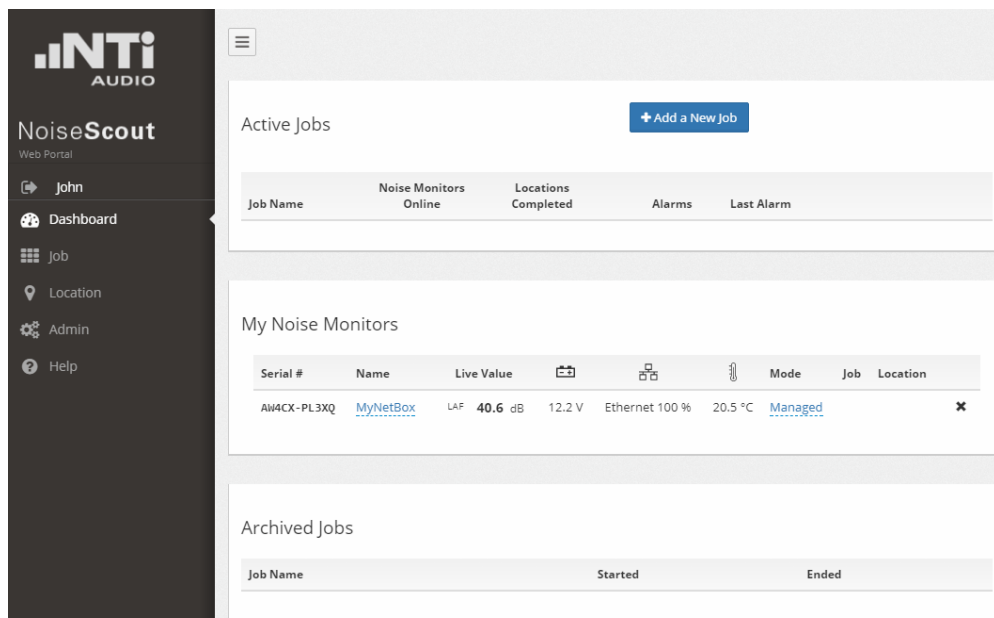
Proceed as described in chapter [network connection](#)²⁰⁾

d) Log in to the NoiseScout web portal

Open the website www.noisescout.com and log in with your my.nti-audio.com account data



You will then see the NetBox(es) that are registered under your account.



e) Select the operating mode

At this point, you have to choose whether to

- continue in the 'Managed' mode (→ refer to the instructions below), or
- switch to the 'Gateway' mode (→ refer to the [Gateway User Guide](#)).

f) Add a new Job

Click on [+ Add a New Job](#), edit the job name and confirm

The screenshot shows the NoiseScout web portal interface. On the left is a dark sidebar with the logo and navigation menu. The main content area is titled 'Active Jobs' and includes a '+ Add a New Job' button. Below this is a search filter box containing the text 'Office'. A table below the search box shows the following data:

Job Name	Noise Monitors Online	Locations Completed	Alarms	Last Alarm

Below the 'Active Jobs' section is the 'My Noise Monitors' section, which contains a table with one entry:

Serial #	Name	Live Value	📶	🔌	🌡️	Mode	Job	Location
AW4CX-PL3XQ	MyNetBox	LAF 41.5 dB	12.3 V	Ethernet 100 %	20.5 °C	Managed		✕

At the bottom is the 'Archived Jobs' section with a table:

Job Name	Started	Ended

This screenshot is similar to the one above, but the 'Active Jobs' table now contains one entry:

Job Name	Noise Monitors Online	Locations Completed	Alarms	Last Alarm
Office <input checked="" type="checkbox"/>	0 of 0	0	0	

The 'My Noise Monitors' table remains the same as in the previous screenshot.



g) Open the Job

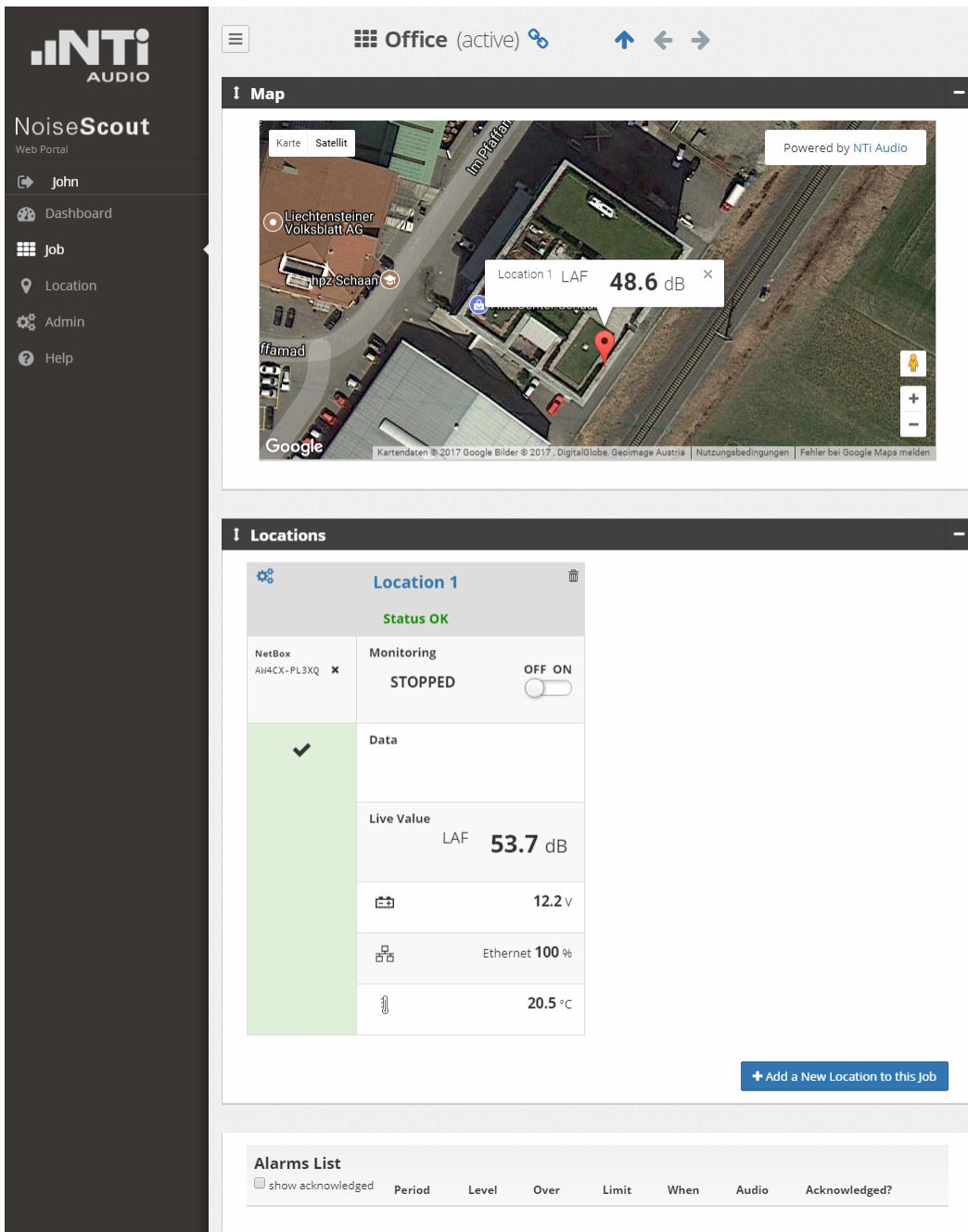
Click on the job name to open the Job page

Hint *When the page opens for the first time, the map will automatically show the NTi Audio headquarters*

The screenshot displays the NTi Audio NoiseScout web portal interface. On the left is a dark sidebar with the NTi Audio logo and a navigation menu including 'John', 'Dashboard', 'Job', 'Location', 'Admin', and 'Help'. The main content area is titled 'Office (active)' and features a 'Map' section with a satellite view of a town. The map shows several locations marked with red dots, including 'Hilcona Aktiengesellschaft', 'Coop', 'Hilti Center-Schaan', and 'Ivoclar Vivadent Aktiengesellschaft'. Below the map is a 'Locations' section with a blue button that says '+ Add a New Location to this Job'. At the bottom is an 'Alarms List' section with a checkbox for 'show acknowledged' and a table with columns: Period, Level, Over, Limit, When, Audio, and Acknowledged?.

h) Add a Location


- Click on [+ Add a New Location to this Job](#) then , select a registered NetBox and click on to confirm
- Use the  buttons to zoom out/in, and the mouse right-click to unlock, scroll & pan on the map
- Click on the location indicator  and move it to its position in the map

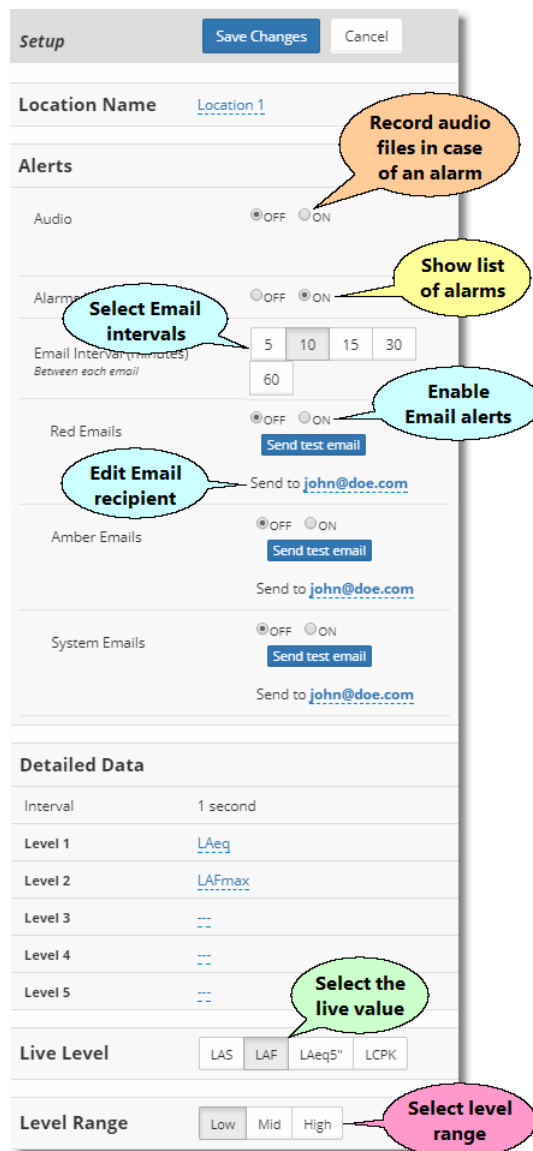


The screenshot displays the NTI Audio NoiseScout web portal. The interface is divided into several sections:

- Header:** Shows the NTI Audio logo, the user name "John", and the current job "Office (active)".
- Map:** A Google Maps view showing an aerial view of a building complex. A location marker is placed on the map, with a tooltip displaying "Location 1 LAF 48.6 dB".
- Locations:** A detailed view of "Location 1" showing its status as "OK". The monitoring is currently "STOPPED". The live value is "LAF 53.7 dB". Other metrics include "12.2 V", "Ethernet 100%", and "20.5 °C".
- Alarms List:** A table with columns for "show acknowledged", "Period", "Level", "Over", "Limit", "When", "Audio", and "Acknowledged?".

i) Configure the Location

- Click on  to edit the Location settings
- When complete click on **Save**



Setup **Save Changes** **Cancel**

Location Name [Location 1](#)

Alerts

Audio OFF ON **Record audio files in case of an alarm**

Alarms OFF ON **Show list of alarms**

Select Email intervals 5 10 15 30

Email Interval (minutes) **Between each email**

Red Emails OFF ON **Enable Email alerts**

Edit Email recipient [Send to john@doe.com](#) **Send test email**

Amber Emails OFF ON **Send test email**

[Send to john@doe.com](#)

System Emails OFF ON **Send test email**

[Send to john@doe.com](#)

Detailed Data

Interval	1 second
Level 1	LAeq
Level 2	LAFmax
Level 3	--
Level 4	--
Level 5	--

Live Level LAS LAF **Select the live value** LAeq5* LCPK

Level Range Low Mid High **Select level range**

k) Adjust the Periods & Limits

- Click on **Location** (or the name that you have assigned to the location)
- Scroll down and edit the Periods according to your demands, i.e. the Description (name), applicable Days and Start/Finish times
- Select a Limits Group; therein, select the Level per period, and adjust the related Time Interval as well as the Red/Amber alarm Limits
- Click on **Save Changes** to save your settings

Period #	Description	Days	Start	End	Duration
1	night	Mo Tu We Th Fr Sa Su	00:00	07:00	07:00
2	day	Mo Tu We Th Fr Sa Su	07:00	23:00	16:00
3	night	Mo Tu We Th Fr Sa Su	23:00	00:00	01:00

[+ Add a New Period](#) [Save Changes](#) [Cancel](#)

Period #	Level	Time Interval	Red Limit (dB)	Amber Limit (dB)
1	L _{Aeq}	15 minutes	55	52
2	L _{Aeq}	5 minutes	70	67
3	L _{Aeq}	15 minutes	55	52

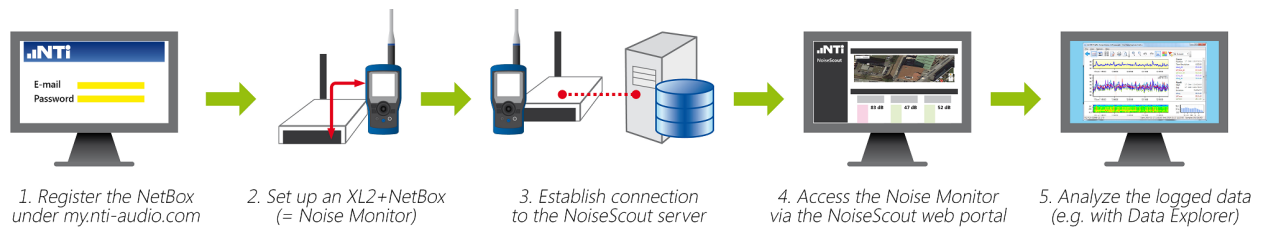
l) Start the Noise Monitor

Switch the Noise Monitor ON  to begin the measurement at the Location

System setup

2 System setup

The following sketch visualizes the basic installation procedure for a NoiseScout system.



2.1 NetBox registration

Before putting a NetBox into operation, you have to register it under your my.nti-audio.com account.

1. Log in to your my.nti-audio.com account
2. Select 'NetBox' from the pulldown-menu 'Product Name'
3. Enter the Serial Number of your NetBox
4. Click on [Register](#)

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Hello John [log out](#)

> My Products < > Calibration & Service < > Personal Settings <

My Products

Register Your Product here

Product Name* Serial Number*

NetBox ABCD1-EF2GH

* required

[Register](#)

Need help? [Contact us.](#)

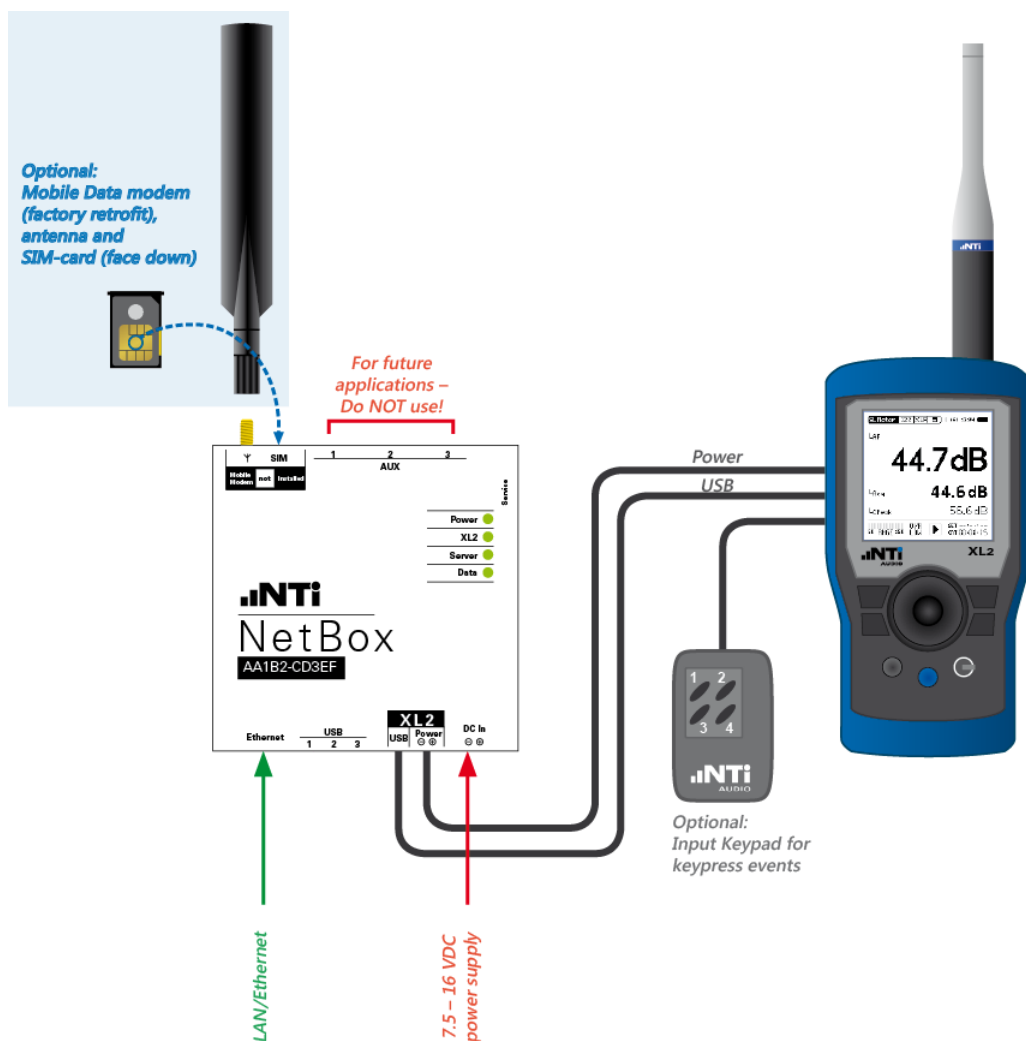
Hint A NetBox can be registered only once, i.e. by a single user.
You may however register several NetBoxes under your account.

2.2 Noise Monitor

A Noise Monitor consists of an XL2 and a NetBox, which are [connected](#)^[20] to a NoiseScout server via the internet.

- Connect the XL2 with the [USB](#)^[6] and power cables to the NetBox
- Connect the NetBox with the network hardware, i.e.
 - a) LAN / Ethernet cable, or
 - b) Mobile Data modem (*factory installation*), antenna + SIM-card (*to be supplied by customer*)
- Optionally connect an [Input Keypad](#)^[33] to the XL2
- Switch ON the XL2
- Connect the NetBox to a DC power supply (e.g. mains power adapter, solar panel + battery etc.)

→ **Continue with [network connection](#)**^[20]



Hint The LED states are described in chapter [Troubleshooting](#)^[44]

2.3 Network connection

The NetBox can be connected to the internet via LAN/Ethernet or Mobile Data (i.e. cellular network as e.g. GSM, UMTS, 3G). If one or both connections are available, the NetBox will automatically choose one based on the following priority:

- i. LAN/Ethernet
- ii. Mobile Data

Hints The NetBox must be [registered](#)^[18] under [my.nti-audio.com](#) before connecting it to the network.

All network settings are saved on the NetBox; the XL2 serves as I/O terminal and data logger.

You may abort the network connection procedure at any time by pressing the 'Esc' key of the XL2.

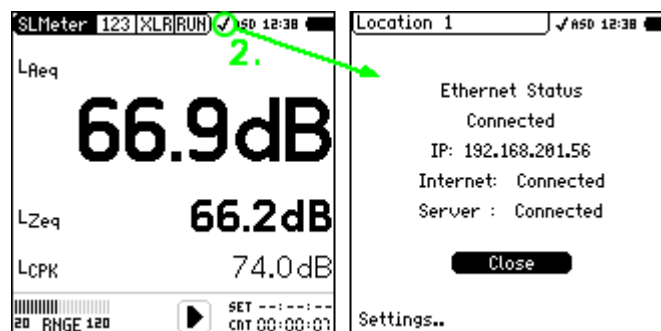
Network connection procedure

A) LAN/Ethernet connection

Connecting the NetBox to a LAN (Local Area Network) requires a DHCP compatible router that provides dynamic IP addresses and is connected to the internet.

For this setup, no settings are required: the connection from the NetBox to the network is established automatically.

1. Prepare the hardware setup as described in chapter [Noise Monitor](#)^[19]
2. If you want to see the connection status, turn the XL2 rotary wheel to select the [network status indicator](#)^[21] and press enter ↵



3. To quit the connection status screen, select 'Close' and press enter ↵

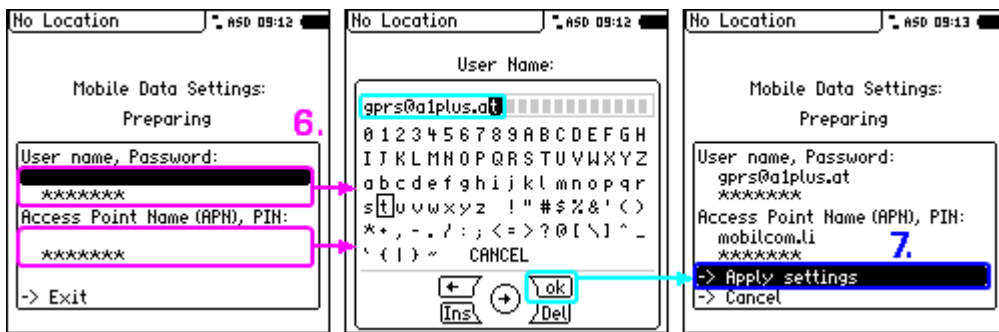
B) Mobile Data connection

1. Prepare the hardware setup including SIM-card and antenna as described in chapter [Noise Monitor](#)^[19]
2. Power ON the XL2
3. Turn the XL2 rotary wheel to select the [network status indicator](#)^[21] and press enter ↵

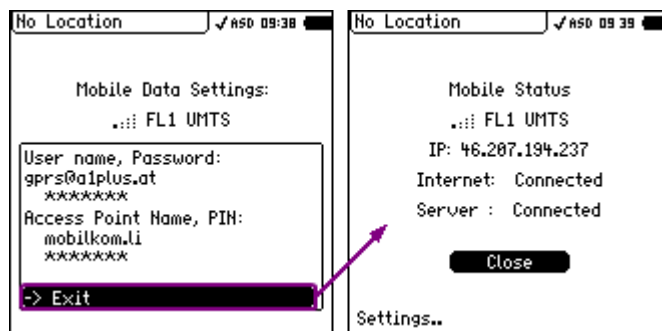
4. Select 'Settings' and press enter ↓
5. Select 'Mobile Data' and press enter ↓



6. Enter the user name, password, access point name (APN) and the PIN of the SIM-card, and confirm via 'ok'
7. Select 'Apply settings' and press enter ↓



8. The NetBox will automatically connect to the Mobile Data network and query the IP address



Network status indicator

When connected to a NetBox, the XL2 shows major NetBox status information in the top line at the position of the speaker symbol.

- ✓ Connection to NoiseScout server and internet is up
- ⚡ Connected to the internet, but so far not to the NoiseScout server
- ⊘ No internet connection

- NetBox failure (→ [troubleshooting](#)^[44])

Edit network settings

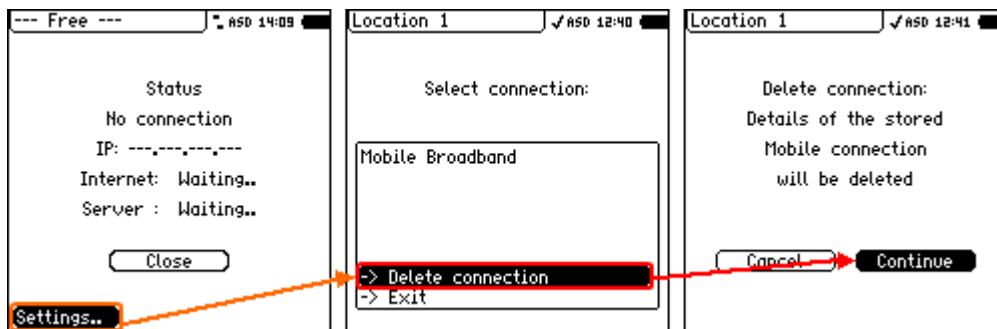
Once a network connection has been established, the related settings will be saved in the NetBox (including the passwords).

You may however amend the saved network settings at any time. To do so, select 'Settings' in the network status screen, press enter ↵ and edit the requested settings.

Delete connection

If required, you may also delete the saved network settings.

1. Prepare the hardware setup as described in chapter [Noise Monitor](#)^[19]
2. Switch ON the XL2
3. Turn the XL2 rotary wheel to select the [network status indicator](#)^[21] and press enter ↵
4. Select 'Settings' and press enter ↵
5. Select '-> Delete connection' and press enter ↵
6. Select 'Continue' and press enter ↵



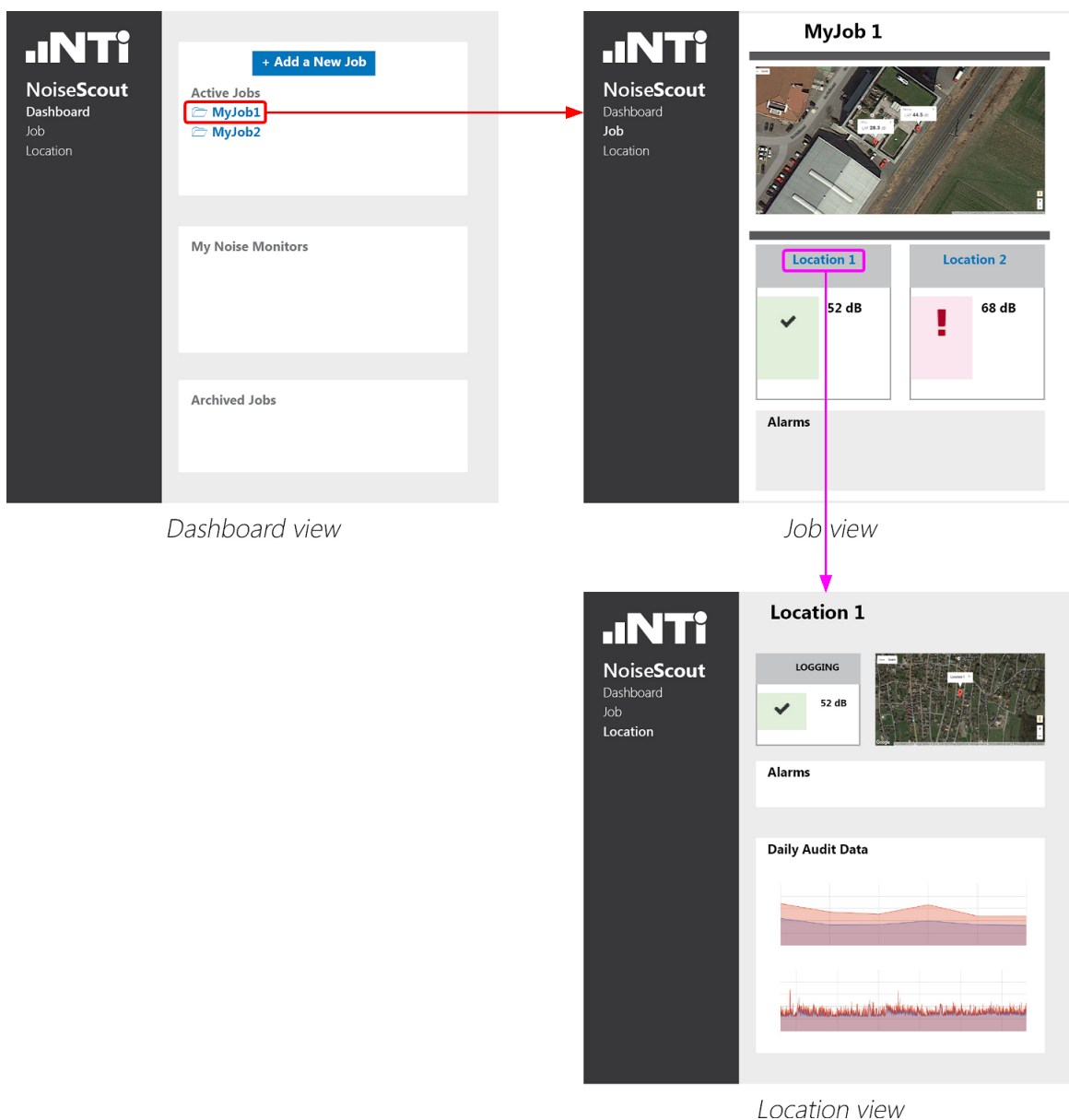
Web portal

3 Web portal

The [NoiseScout](#) web portal provides access to your [Noise Monitors](#)^[19], [Locations](#)^[31] and [Job](#)^[27]. The web portal has a responsive layout, i.e. it automatically adapts to the display of your PC, tablet or smartphone.

Use the portal to:

- assign a Noise Monitor to a Location
- set up Locations and organize them in Jobs
- monitor the sound level of a Job or Location
- share a Job or Location view with a 3rd party
- download the logged data from a Location



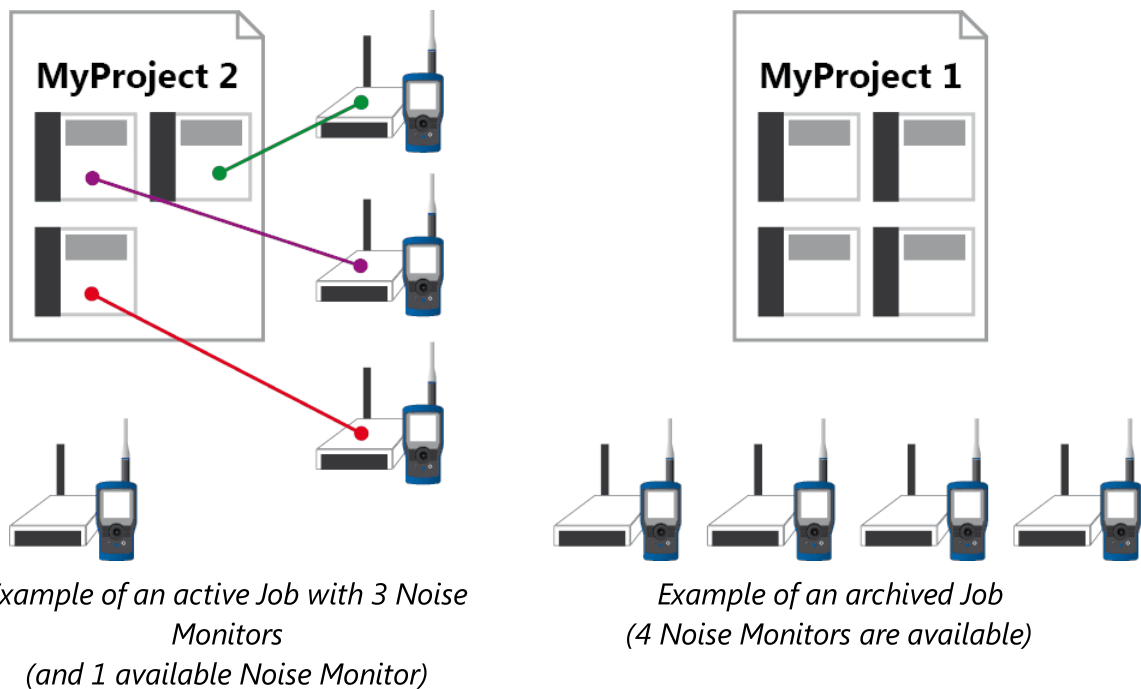
System overview

Job structure

As soon as you log in to the NoiseScout web portal, you get access to your personal client area, from where you may set up, organize and edit the Jobs.



Typically you first [add](#)^[24] a new Job, and therein a new Location / Noise Monitor.

- When a Noise Monitor has been assigned to a [Location](#)^[31], it is no longer available for another Location or Job; however, a Noise Monitor may be removed from a Location, or re-added at a later time.
- The noise measurements at a Location must be started (and stopped) manually by the operator.
- As soon as the measurement at a Location is stopped, the related Noise Monitor may be removed (thus becoming available again).
- A stopped Location can be re-started at a later time.
- A Location can be deleted or archived at any time.



3.1 Login

NOTE You must have an account at my.nti-audio.com to set up and configure a Noise Monitor under the NoiseScout web portal.











- 1) Open the website www.noisescout.com and click on 
- 2) Enter your e-mail address and the password of your my.nti-audio.com account
- 3) Click on 

3.2 Dashboard

The main page of the NoiseScout web portal is the Dashboard. It shows your [personal client area](#)^[25] with the active and archived [Jobs](#)^[27], as well as the available [Noise Monitors](#)^[19].

Hint You have access to only the NetBoxes that you have [registered](#)^[18] under my.nti-audio.com.

In the Dashboard view, you may

- Create a new Job → click on , enter the name of the new Job and confirm via 
- Edit the name of an existing Job → click on  and confirm via 
- Open a Job → click on the Job name
- Archive an active Job → click on 
- Delete a Job → click on 
- Edit the name of a Noise Monitor → click on the Name and confirm via 
- Toggle between the [Managed](#)^[4] and [Gateway](#)^[4] mode → click on the Mode, select the preferred solution and confirm via 
- Deregister a NetBox of a [Noise Monitor](#)^[19] → click on  (NOTE The Deregister  does not appear while the NetBox is assigned to a Location)

The screenshot displays the NoiseScout Web Portal dashboard. On the left is a dark sidebar with the NTi Audio logo, the user name 'John', and navigation links for Dashboard, Job, Location, Admin, and Help. The main content area is divided into three sections:

- Active Jobs:** A table with columns for Job Name, Noise Monitors Online, Locations Completed, Alarms, and Last Alarm. It shows one job named 'Branch' with 1 of 1 noise monitors online, 0 locations completed, 3 alarms (acknowledge), and a last alarm 15 minutes ago at Office MBe.
- My Noise Monitors:** A table with columns for Serial #, Name, Live Value, and various status indicators. It shows one monitor named 'Residential' with a live value of 44.6 dB and a location of Office MBe.
- Archived Jobs:** A table with columns for Job Name, Started, and Ended. It shows one job named 'Headquarter' that started on 2017-11-27 09:23:33 and ended on 2017-11-27 09:40:27.

Example of Dashboard view

3.3 Job

A Job can be described as a noise monitoring task that runs over a certain period of time. A Job normally contains minimum one or more [Locations](#)^[31], whereby each Location is assigned to a [Noise Monitor](#)^[19] (please refer also to → [Job structure](#)^[25]).

Examples

- Surveillance of a building site, where several Noise Monitors are installed to monitor the environmental noise at different positions
- Monitoring the traffic noise of a busy road via a single Noise Monitor
- Ensuring that the maximum allowed sound level is not exceeded during a music festival with several stages

Location

A [Location](#)^[31] is a subset of a Job, and represents a connected [Noise Monitor](#)^[19].

To add a Location, click on [+ Add a New Location to this Job](#), select an available Noise Monitor and confirm via

Active vs. archived Job

An active Job can be described as a container (or folder) for [Locations](#)^[31]. A Job may be archived or deleted at any time.

The Job view of an active Job shows by default

- a map with the added Locations
- the Locations that are ready to start
- active Locations that are logging
- active Locations that are stopped
- alarms

The screenshot displays the NoiseScout web portal interface for an active job. On the left is a navigation sidebar with the user's name 'John' and menu items: Dashboard, Job, Location, Admin, and Help. The main content area is titled 'Demo (active)' and contains three sections:

- Map:** A satellite map showing two monitoring locations. A red pin marks 'Field LAS' with a value of 35.7 dB. Another red pin marks 'Office LAF' with a value of 58.2 dB. The map includes street names like Langgaulstrasse and Zöllstrasse, and a 'Powered by NTI Audio' watermark.
- Locations:** Two panels provide detailed status for each location.
 - Office (LAF):** Status OK, NetBox S1W9Y-42Y55, Monitoring RUNNING (toggle OFF ON), Data (First: 2017-06-28 09:41:53, Latest: 2017-06-29 10:07:40), Live Value LAF 58.3 dB, 12.2 V, Ethernet 100%, 23.5 °C.
 - Field (LAS):** Status OK, NetBox 3HDWN-3RSU5, Monitoring RUNNING (toggle OFF ON), Data (First: 2017-06-29 10:02:27, Latest: 2017-06-29 10:07:40), Live Value LAS 33.9 dB, 12.2 V, Ethernet 100%, 22.5 °C.
- Alarms List:** A table showing recent alarms.

show acknowledged	Period	Level	Over	Limit	When	Audio	Acknowledged?
<input type="checkbox"/>	day	LAFmax5'	5.7 dB	Red Limit 70.0 dB	54 minutes ago	wav 09:10:14 (max 75.7 dB) wav 09:12:55 (max 60.8 dB) wav 09:13:48 (max 59.5 dB)	<input type="checkbox"/>
<input type="checkbox"/>	day	LAFmax5'	1.2 dB	Amber Limit 65.0 dB	59 minutes ago	wav 09:05:28 (max 64.9 dB) wav 09:06:53 (max 61.8 dB) wav 09:07:05 (max 66.2 dB)	<input type="checkbox"/>

Example of active Job view

The Job view of an archived Job shows

- a map with the [Locations](#)^[31]
- Locations that are stopped
- [Alarm list](#)^[36]

The screenshot displays the NTiAudio NoiseScout web portal interface. On the left is a dark sidebar with the logo and navigation menu. The main content area is divided into three sections: a map, location details, and an alarm list.

Map: Shows an aerial view with two locations marked: 'Office' and 'Location 2'. The 'Office' location has a red exclamation mark icon, while 'Location 2' has a green checkmark icon.

Locations: Two panels provide details for 'Office' and 'Location 2'. Each panel includes a 'Monitoring' status, 'Data' (First and Last timestamps), 'Live Value', and various sensor icons (V, %, °C).

Alarms List: A table listing alarm events with columns for Period, Level, Over, Limit, When, and Acknowledged?.


Period	Level	Over	Limit	When	Acknowledged?	
Office	day	LAFmax5'	5.6 dB	Amber Limit 50.0 dB	2017-02-08 06:05:00	<input type="checkbox"/>
Office	morning	LAFmax15'	0.1 dB	Amber Limit 35.0 dB	2017-02-08 05:45:00	<input type="checkbox"/>
Office	morning	LAFmax15'	7.2 dB	Red Limit 40.0 dB	2017-02-08	<input type="checkbox"/>

Example of archived Job view

3.4 Location

The Location view typically includes the

- [Location panel](#)^[33] and map
- [Alarm list](#)^[36]
- [Periods & limits](#)^[38]
- [Audit data and incidents](#)^[38]



NoiseScout
Web Portal

Markus Becker

- Dashboard
- Job
- Location
- Admin
- Help

Field (active)

Status OK

NetBox 3HDNN-3RSUS ✖

Monitoring OFF ON

RUNNING

Data

First 2017-06-29 10:02:27

Latest 2017-06-29 13:00:35

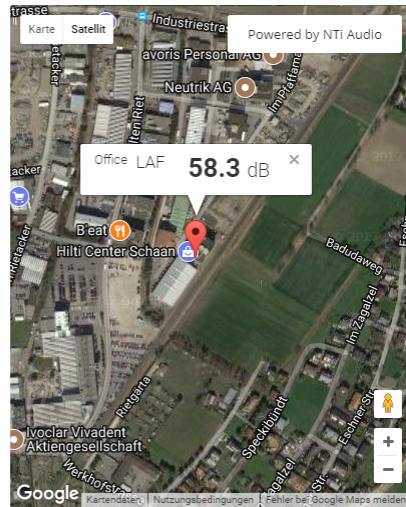
Live Value

listen LAF **58.3 dB**

12.3 V

Ethernet 100 %

30.0 °C



Powered by NTI Audio

Alarm List

show acknowledged

	Period	Level	Over	Limit	When	Audio	Acknowledged?
Field	day	LAFmax5'	4.0 dB	Amber Limit 60.0 dB	11 minutes ago	wav 12:45:22 (max 54.7 dB) wav 12:47:53 (max 64.0 dB) wav 12:49:51 (max 61.4 dB)	acknowledge all
Field	day	LAFmax5'	3.7 dB	Red Limit 65.0 dB	2017-06-29 11:45:00	wav 11:41:55 (max 62.5 dB) wav 11:42:43 (max 68.7 dB) wav 11:43:07 (max 51.3 dB)	acknowledge
Field	day	LAFmax5'	21.9 dB	Red Limit 65.0 dB	2017-06-29 11:35:00	wav 11:30:08 (max 86.9 dB) wav 11:32:50 (max 51.7 dB) wav 11:34:55 (max 52.8 dB)	acknowledge

Periods & Limits

Periods

#	Period	Days
1	night	Mo Tu We Th Fi
2	day	Mo Tu We Th Fi
3	night	Mo Tu We Th Fi

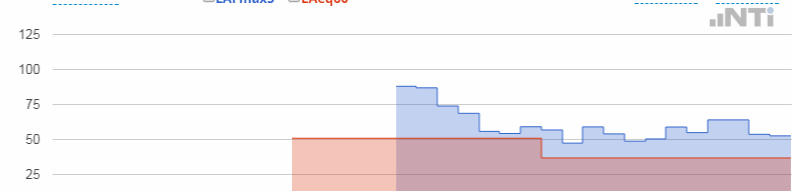
[+ Add a New Period](#)
[Save Changes](#)
[Cancel](#)

Lim 1 | Lim 2 | Lim 3 | Lim 4

#	Level	Time Interval	Red Limit (dB)	Amber Limit (dB)
1	LAeq	15 minutes	55	52
2	LAeq	60 minutes	70	67
3	LAeq	15 minutes	55	52

Daily Audit Data

29.06.2017 LAFmax5' LAeq60' [download Audit Data from 29.06.2017 to 29.06.2017](#)



Location panel

Location view

3.4.1 Alarm messages

A key feature of the NoiseScout system in the [Managed Mode](#)^[4] is the generation of alarm messages. These messages can be generated in two ways,

- a) automatically: if the recorded sound level exceeds a user-defined threshold,
- b) manually: by pressing a button on the XL2 [Input Keypad](#)^[19].

a) Automated alarms

The user can configure the system behavior in case of an automated alarm.

- The alarm thresholds are defined under [Periods & limits](#)^[38]
- The alarm handling can be adjusted in the [Location setup](#)^[35] panel:
 - record an Audio file of the moment when the alarm occurred (*optional*),
 - show all occurred alarms in a list (*optional*),
 - send an email alert to the host (*optional*).

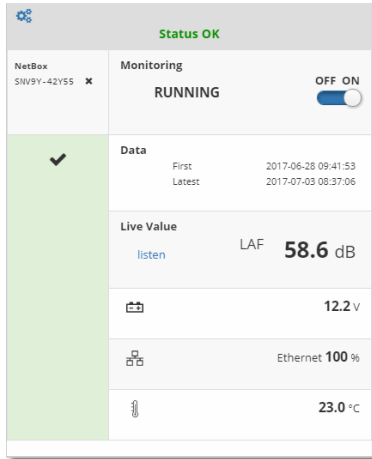
b) Keypress events

The system behavior in case of a keypress event (i.e. manually triggered alarm) is defined as follows:

- Pressing any of the four keys on the XL2 [Input Keypad](#)^[19], even briefly, triggers a keypress event.
- Pressing any of the four keys again ends the event.
- If no key is pressed to end the event, the event expires in 90 seconds.
- Audio is provided from 30 seconds before the first keypress down in an event until the second keypress or the 90-second event timeout.
- Keypressed events are recorded together with the 1-second log data.
- The duration of each single keypress is marked in XL2 Data Explorer software as "Key1, Key2, Key3, or Key4" respectively.
- The audio is also shown in the XL2 Data Explorer software.
- To not put the system under too much pressure, the amount of audio per day is limited to 54 MB.
- Keypressed events are shown in the [alarm list](#)^[36] and added to alarm email notifications.
- Links to the keypressed event audio are provided in the alarm list.

3.4.2 Location panel

The Location panel displays the status of the Noise Monitor.



• **Location status**


- **Status OK** → a NetBox has been successfully added to the Location
- **Register a NetBox** → No NetBox is available, i.e. a new NetBox must be registered and added to the Location
- **Add a Noise Monitor** → a NetBox is available, but it has not yet been added to the Location
- **No microphone detected** → the microphone of the Noise Monitor is missing, disconnected or defective
- **No XL2 detected** → the XL2 analyzer of the Noise Monitor is missing, disconnected or defective
- **Noise monitor is offline** → the Noise Monitor is not connected to the internet or NoiseScout server
- **NoiseScout system is offline** → the NoiseScout system is currently offline

• **NetBox serial number**



• **Monitoring status**

- The **ON/OFF** switch allows to manually turn the monitoring ON or OFF (i.e. start / stop the Noise Monitor).
- **SETTLING** → the monitoring just has been started, yet the Noise Monitor is still settling
- **RUNNING** → monitoring is in progress
- **RESTARTING** → after having changed some Noise Monitor parameters (XL2 is running)
- **UPDATING SYSTEM** → while a new firmware is installed
- **SYNCHRONIZING TIME** → XL2 is synchronizing its real-time clock with the NoiseScout server
- **STOPPED** → monitoring has been stopped



Click on the  switch to start (ON) or stop (OFF) the sound level measurement at the Location.

• **Alarm status**

-  → audit level is within the limit
-  → audit level has exceed the limit

• **Data**

- First → the date & time when the Location was put into operation for the very first time
- Latest → the date & time of the last measurement at the Location

• **Live value**

- listen → click on this link to download the audio recording of the previous 10 seconds

•  **Supply voltage**


•  **Network type & status**


•  **Ambient temperature**

- Estimated ambient temperature (based on a measurement within the NetBox)


3.4.3 Location setup

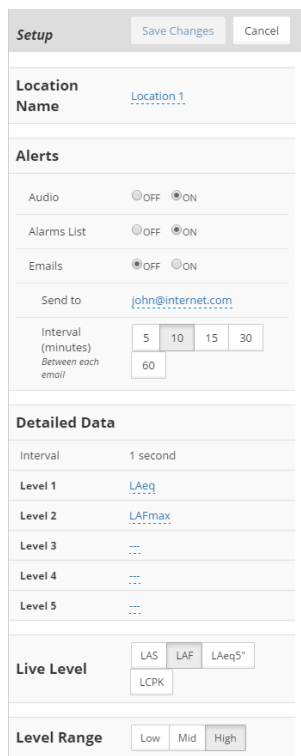
Location map / position

Click on  in the map and move the Location to the position where the [Noise Monitor](#)^[19] has been actually installed.

The Location indicator will change to a  and the Location is permanently assigned to the corresponding time zone.

Location setup

Click on  to edit the Location setup.



Location Name

Assign a name to the location and confirm via 

Alerts

[Audio](#)^[36] → tick the ON radio button to enable live audio listening, and that the NoiseScout server provides 10 sec. audio files (WAV format) with the highest total sound energy for the alarms

Hint *The audio file recording is only supported for XL2 with firmware V3.33 or higher*

[Alarm List](#)^[36] → as long as the ON radio button is ticked, new alarms will be shown in the Alarm List

Emails → tick the ON radio button to let the NoiseScout server send an e-mail, if the recorded level has exceeded the given [limit\(s\)](#)^[38]

Send to → edit the Email recipient(s), i.e. the e-mail address(es) of the recipient(s) who shall receive the aforementioned alarm(s)

Interval → select the minimum interval between successive emails: 5, 10, 15, 30 or 60 minutes

Hint *The alarm thresholds are defined under [Periods & Limits](#)^[38]*

Detailed Data

Tick the ON radio button to upload & show the detailed data from the XL2 to the NoiseScout server

- Interval → the XL2 recording interval is fixed at 1 second
- Level 1 ... 5 → select up to five level measurements that shall be logged by the XL2

Live Level

→ select the measurement result that shall be shown numerically on top of the Location panel

Level range

→ adjust the XL2 input range according to the level expectations at the Location

Example: XL2 with M2230 microphone

- LOW: 0 – 100 dBSPL
- MID: 20 – 120 dBSPL
- HIGH: 40 – 140 dBSPL

Hint *Environmental noise monitoring typically requires "Low" range*
Live sound applications typically require "High" range


Click on  to return or  to abort.




Hint All values in the Location setup can be changed in between measurements or during a measurement; certain changes however require that the XL2 is restarted - this is done automatically and there could be data missing during this event.

3.4.4 Alarm list

Alarm list

The alarm list shows all the level alarms and manually triggered events that have occurred since the Location was started.

- Clear / tick the checkbox show acknowledged to show all / only the not-acknowledged alarms
- Click on the 'thumbs down' icon  or on 'acknowledge all' to acknowledge the corresponding alarm(s)

<input type="checkbox"/> show acknowledged	Period	Level	Over	Limit	When	Audio	Acknowledged?
acknowledge all							
Office	day	LAFmax5'	3.5 dB	Red Limit 70.0 dB	1 minute ago	wav 09:10:18 (max 59.9 dB) wav 09:13:55 (max 73.5 dB) wav 09:14:13 (max 59.6 dB)	
Office	day	LAFmax5'	3.2 dB	Amber Limit 65.0 dB	6 minutes ago	wav 09:05:22 (max 59.6 dB) wav 09:07:10 (max 61.3 dB) wav 09:08:21 (max 68.2 dB)	
Office	day	LAFmax5'	11.4 dB	Red Limit 70.0 dB	21 minutes ago	wav 08:50:00 (max 62.8 dB) wav 08:51:58 (max 81.4 dB) wav 08:53:54 (max 58.7 dB)	

Alarm list (example)

Audio

NoiseScout can automatically provide an audio recording of alarms that occur at a Location, i.e. in case the measured noise level exceeds the preset limit.

This feature has to be enabled/disabled in the [Location settings](#)³⁵.

Hints The number of audio files is limited to ≤ 300 per day, while the number of alarm notifications is not limited.

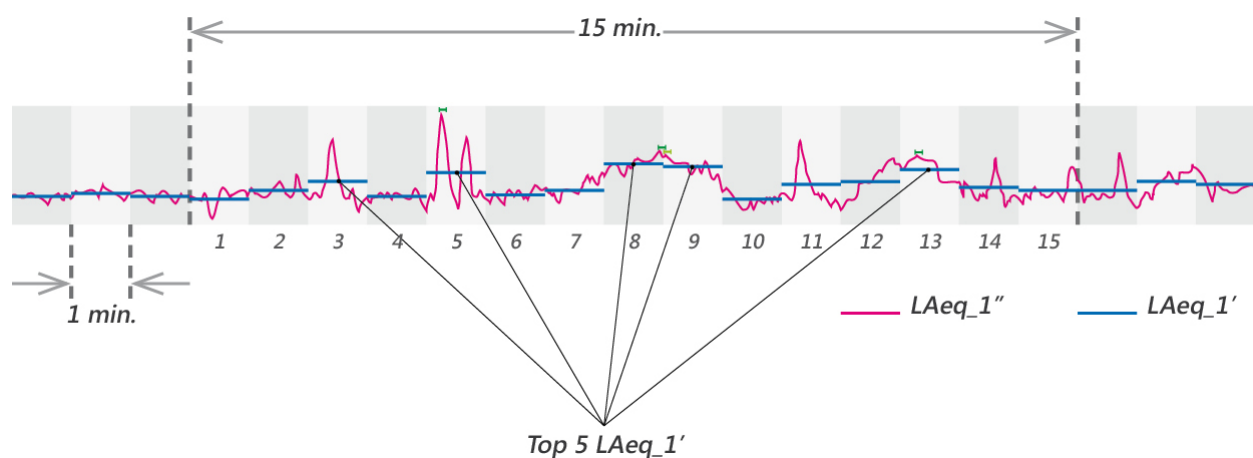
The audio file recording is only supported for XL2 with firmware V3.33 or higher.

Audio recording process

- If the Audio feature is [enabled](#)^[35], the XL2 will permanently record the incoming audio.
- If the alarm condition is met, the system finds the three intervals* with the highest total sound energy (LAeq) within the [Time Interval](#)^[38], and uploads a 10-second audio recording for each of these intervals to the Web Portal; a maximum number of 100 audio files may be uploaded per day (as soon as this limit has been reached, no further audio files will be created on that calendar day).
- To ensure that the SD-card does not run out of memory, the oldest parts of the audio recording are deleted.

*Example

- Within a 15-minute time interval (alarm period), the system groups the one-second data (LAeq_1") into one-minute periods.
- For each minute group, it calculates the one-minute equivalent value (LAeq_1') from the one-second data.
- The system takes the top 5 one-minute periods with the highest LAeq_1' levels (e.g. minute # 3, 5, 8, 9, and 13 - see graph below), and finds the maximum one-second value within each of these 5 chosen minutes.
- It applies a 10-second interval to each of these 5 points, starting 2 seconds before this maximum point until 8 seconds after it; if two of these 10-second intervals overlap (e.g. in minute # 8 and 9), the point with the lower max value is discarded (e.g. minute # 9).
- The remaining points are sorted in descending order and the top 3 of them are selected (e.g. minute # 5, 8, and 13).
- For each point, the system create the 10-second WAV files.




Audio file recording principle (schematic illustration)

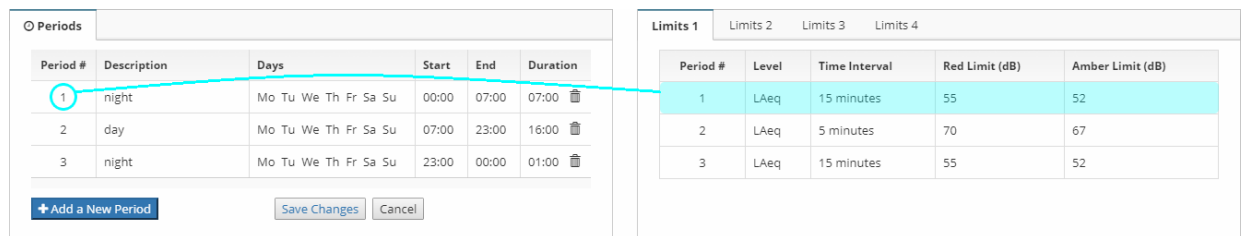
Audio file characteristics




- 10 seconds / alarm
- WAV file
- Compressed audio (ADPCM) with AGC (automated gain control)
- Sampling frequency $f_s = 12 \text{ kHz}$

3.4.5 Periods & limits

This feature allows you to define individual alarm levels for customized periods and time intervals.

- Click on any cell in the **Periods** table to edit its contents, e.g.
 - Description → customized name of the period
 - Days → applicable weekdays
 - Start → start time of the period
 - Finish → end time of the period
 - Duration → automatically calculated duration of the period
 -  → delete the corresponding period
- Click on any cell in a **Limits Group** table to edit its contents, e.g.
 - Level → the sound level that has to be monitored
 - Time Interval → time interval, during which the monitored level must exceed the threshold to create an alarm
 - Red limit (dB) → threshold level for a red alarm
 - Amber limit (dB) → threshold level for an amber alarm



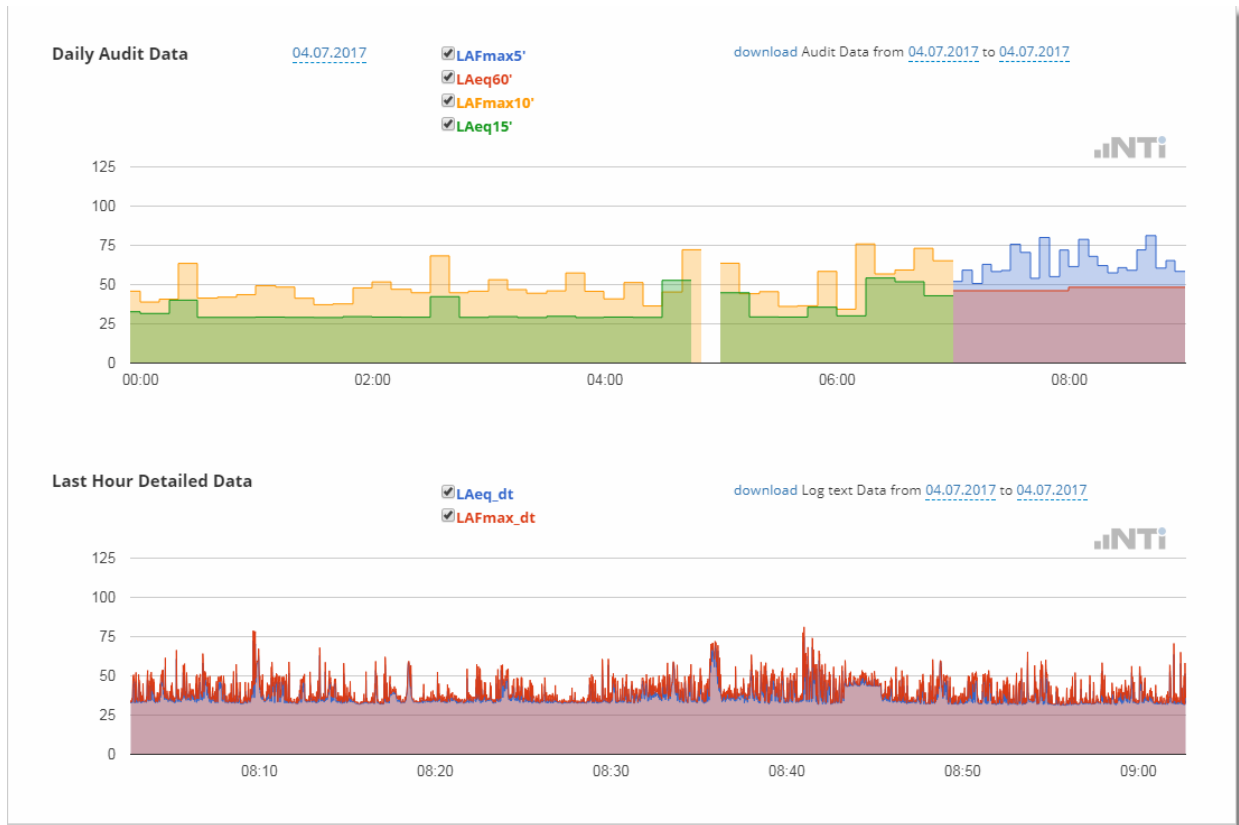
Periods						
Period #	Description	Days	Start	End	Duration	
1	night	Mo Tu We Th Fr Sa Su	00:00	07:00	07:00	
2	day	Mo Tu We Th Fr Sa Su	07:00	23:00	16:00	
3	night	Mo Tu We Th Fr Sa Su	23:00	00:00	01:00	

Limits 1					
Period #	Level	Time Interval	Red Limit (dB)	Amber Limit (dB)	
1	L _{Aeq}	15 minutes	55	52	
2	L _{Aeq}	5 minutes	70	67	
3	L _{Aeq}	15 minutes	55	52	

Periods & Limits (example)

3.4.6 Audit data

- The graphs show the logged sound levels of the past 24 hours / 60 minutes
- Tick / clear the L_{Aeq}, L_{AFmax} checkboxes to show / hide the corresponding test results
- Click on a [download](#) link to save the corresponding data on your PC



Daily audit data / Last hour detailed data (example)

3.4.7 Incidents


List of all incidents (e.g. loss of network connection) that occurred since the Noise Monitor had been put into operation

Incidents		
Date Time	Description	Additional Information
2017-07-04 05:00:00	XL2 measurement started	
2017-07-04 04:59:56	XL2 measurement stopped	XL2 Time adjusted
2017-07-03 06:32:45	Noise Monitor online	
2017-07-03 06:32:41	Noise Monitor offline	
2017-07-03 06:32:38	Microphone detected	TYPE: M4260, SN:1666, SENS: 26.39 mV/Pa, SENS_SOURCE: M4260 USER, CAL_TIME: 2016-11-14 15:16
2017-06-29 10:02:23	XL2 measurement started	
2017-06-29 10:02:23	XL2 detected	SN: A2A-02714-D2, FW: 3.31
2017-06-29 10:02:23	Microphone detected	TYPE: M4260, SN:1666, SENS: 26.39 mV/Pa, SENS_SOURCE: M4260 USER, CAL_TIME: 2016-11-14 15:16

Incidents (example)

3.5 Share Job or Location view


The operator of a NoiseScout system may grant a 3rd party read-only access to any Job or Location view.

1. Click on  on top of the [Job](#)^[27] or [Location](#)^[31] view
2. Copy the link of the web page that opens
3. Send the link to the entitled person

Hint *The shared link is unique and applies only to the view, where it has been created.*

3.6 Download data

If you want to get access to the logged measurement data of a running or an archived [Job](#)^[27], you have to

1. open the Job
2. click on the **Location** name, from which you want to download the logged data
3. select the required time period via the calendar, and confirm via 
4. download the logged data in text file format – if you intend to import the logged data also to the XL2 Data Explorer, you must download, in addition, the 'Data Explorer License file'.

Gisingen I (archived)

2015-12-11 23:29 - 2015-12-15 08:39

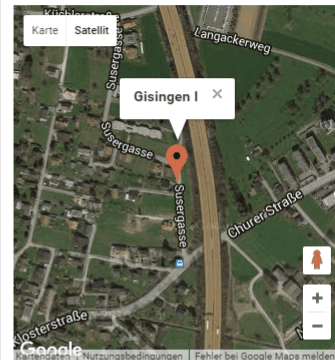
NetBox

--- V

--- %

--- °C

← last 60 Audit records



Alarms

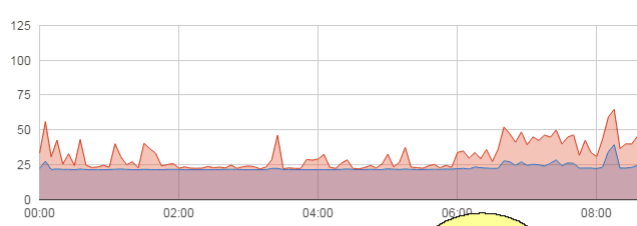
show acknowledged

over	Limit	When	Acknowledged?
------	-------	------	---------------

Daily Audit Data

[15.12.2015](#) LAeq LAFmax

[download Audit Data from 11.12.2015 to 15.12.2015](#)

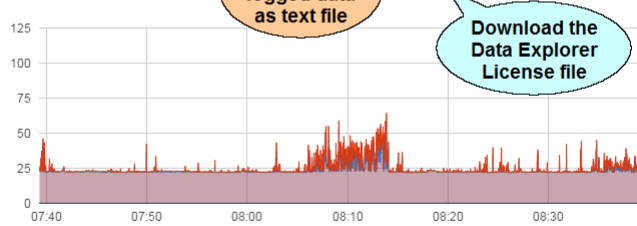


Last Hour Log Data

LAeq LAFmax

[download Log text Data from 11.12.2015 to 15.12.2015](#)

[download DataExplorer License file](#)



Incidents

Date Time	Description	Additional Information
-----------	-------------	------------------------










Hints & tips

4 Hints & tips

- [Navigation](#)^[43]
- [Troubleshooting](#)^[44]
- [Support](#)^[46]

4.1 Navigation

Buttons

-  log out
-  go to the [Dashboard](#)^[24] view
-  go to the [Job](#)^[27] view
-  go to the [Location](#)^[31] view
-  collapse/expand the sidebar menu
-  collapse/expand the map, Location panels
-  [share](#)^[40] the current view with a 3rd party user → copy the URL of the new tab and send it to anybody who may view this page, but without granting the right to edit the page
-  go to the [Dashboard](#)^[24], [Job](#)^[27] view
-  view the previous/next Job or Location

Mouse

- Right-click map (Job or Location) to unlock/lock zoom, scroll or pan
- Right-click map (Job or Location) to center automatically on Location(s)

4.2 Troubleshooting

There is no NetBox / Noise Monitor available

Possible reasons:


- ❑ NetBox is not registered
 - visit the my.nti-audio.com website, open your account and [register](#)^[18] the NetBox
- ❑ NetBox has been registered by another person
 - close the NoiseScout web portal, and log in under the account of the NetBox owner; or the other person must de-register the NetBox before you can register it
- ❑ NetBox is not connected to the power supply
 - connect the NetBox to an appropriate [power supply](#)^[6]
- ❑ NetBox is not connected to the internet / NoiseScout server
 - verify the [network connection](#)^[20] of your Noise Monitor
- ❑ NetBox has been assigned to another Job
 - open the Job, to which the Noise Monitor has been assigned; you may now turn monitoring off, remove the NetBox and add it to the new location

The Noise Monitor does not transmit data

Possible reasons:

- ❑ The XL2 / NetBox are not properly powered
 - connect the XL2 and the NetBox to an appropriate [power supply](#)^[6]
 - switch ON the XL2
- ❑ No communication between the XL2 and the NetBox
 - Verify the USB cable connection between the XL2 and the NetBox
 - download & install the latest XL2 firmware from the my.nti-audio.com website
- ❑ The XL2 firmware version is too old
 - download & install the latest XL2 firmware from the my.nti-audio.com website
- ❑ The Location / Noise Monitor has not been started yet
 - select the [Location](#)^[31] and turn the monitoring ON

Miscellaneous

- ❑ All NetBox LEDs are OFF
 - verify the [power supply](#)^[6]
- ❑ The NetBox Data LED is not blinking
 - verify the [network connection](#)^[20] ✓
- ❑ The XL2 display does not show the  symbol
 - check the XL2 firmware version (must be v3.03 or higher); update the XL2 firmware if necessary
- ❑ The XL2 is not switching ON after connecting to the NetBox
 - you have to manually switch ON the XL2 after connecting it to the power supply
- ❑ The XL2 shows the Error: "Too many log files in NetBox directory. Please delete manually"

→ open the folder 'Projects', and then '.WebBuffer' on the SD-card of your XL2 and delete its contents.

- ▣ **The Audio feature is active, but no Audio files are uploaded after an Alarm**
 - the maximum number of 100 Audio files per days may have been exceeded.

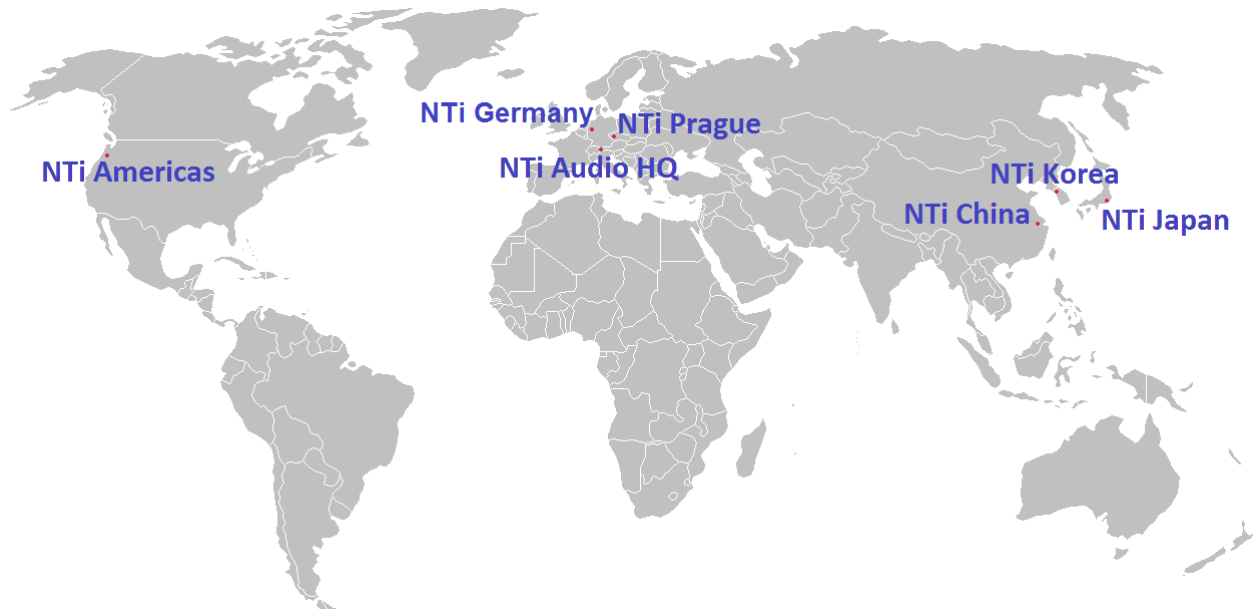
NetBox LEDs

The Power LED is hard-wired, while the other three LEDs are controlled by the NetBox firmware.

- ▣ **Power**
 - ON → power supply voltage OK
 - OFF → no power supply voltage, or too low
- ▣ **XL2**
 - ON → XL2 is connected via USB cable to NetBox
 - OFF → no XL2 connected to NetBox
- ▣ **Server**
 - OFF → NetBox not connected to internet / NoiseScout server
 - Blinking → NetBox is connected to internet, but not (yet) to NoiseScout server
 - ON → NetBox is successfully connected to the NoiseScout server
- ▣ **Data**
 - Blinking → NetBox is currently transferring data to the NoiseScout server
- ▣ **Special states**
 - XL2, Server & Data LEDs are blinking → Error during power up ⇒ NetBox will re-start after a short time

4.3 Support

For dedicated support, please contact your nearest NTi Audio [partner](#).



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