Technical Note 65

What is AuditStore and How Does it Work?

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Updates

In the interests of continuous product improvement, Cirrus Research plc reserves the right to make changes to product specifications without notice.

To understand the latest updates that have been implemented into this product and to download the most current version of this user manual, visit our website at www.cirrusresearch.co.uk

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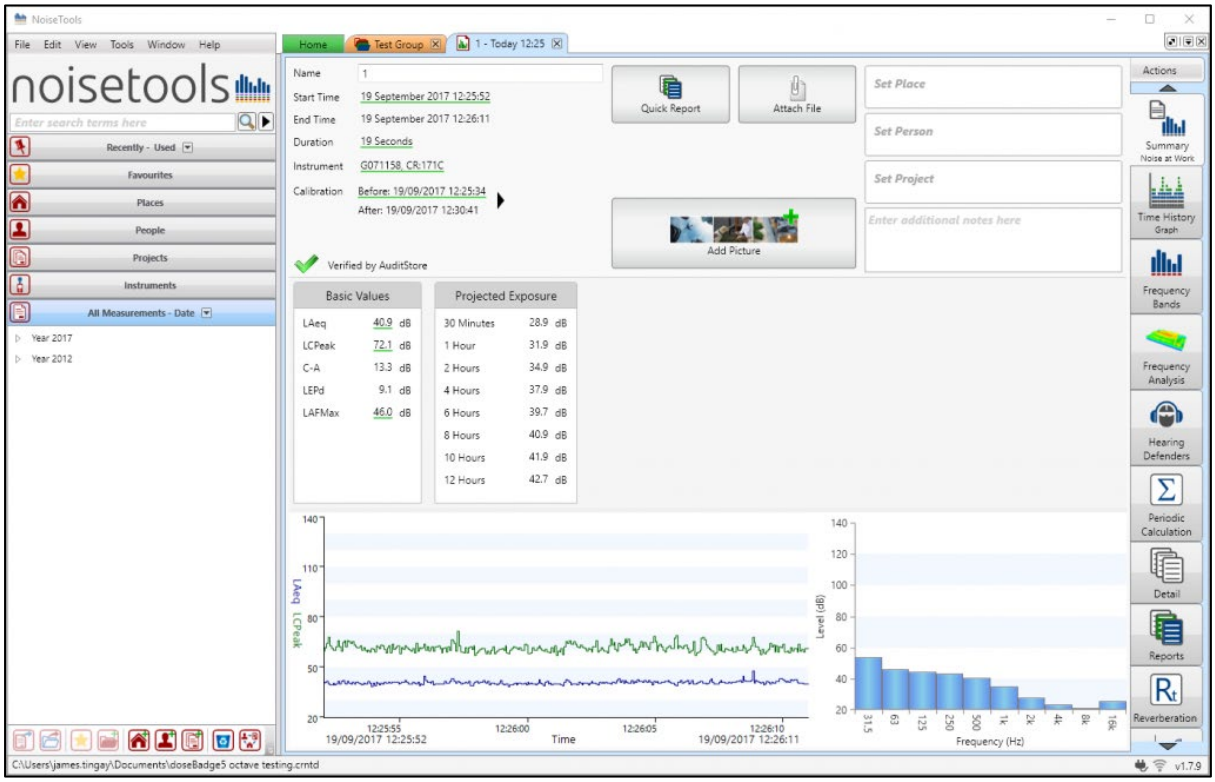
1. Introduction – What is AuditStore?

AuditStore is a technology that is unique to Cirrus Research's range of Optimus and Optimus+ sound level meters, and Trojan noise nuisance recorders. In short, it allows you to check that the information presented by the NoiseTools software, and subsequently any report that you produce in NoiseTools, is using the same data that was originally recorded by the instrument. This allows you to present data with confidence and provides you with the ability to verify that the measurement data has not been modified, adjusted, corrupted, or tampered with.

AuditStore is featured on all data logging variants of Optimus/Optimus+ and Trojan instruments. The measurement below has been verified against the AuditStore data and where the information matches, a green tick or line is shown. In this example, the measurement time and date, instrument type and serial number and overall measurement parameters have been checked and confirmed.



2. How is AuditStore Useful?

With the range of software that is available on modern computers, it is possible to manipulate data and create a noise measurement report with data that has been deliberately changed or manipulated. AuditStore allows you to verify your measurements and to clearly demonstrate that the information being presented is based on the data originally captured by the instrument.

This is especially useful if you are challenged about the integrity of the data you present. You can compare the data in your report against that in the AuditStore and use this to confirm that the data presented is as originally stored in the instrument.

AuditStore can also be used for the recovery of measurement data in an emergency.

On rare occasions, it might not be possible to retrieve measurement data from an instrument in the normal way. For example, this might be because the instrument has been damaged to a point where it's not possible to retrieve data from the internal memory card, or simply that the user has erased measurements from the instrument before downloading in NoiseTools.

In these circumstances, it may be possible for the information stored in the AuditStore to be extracted and made available as a CSV file. This is a limited set of data, but it can often be detailed enough to allow for a report to be created or further analysis carried out.

This is something that must be done by the Cirrus Research service and calibration team.

3. How Does AuditStore Work?

Each time you take a measurement or calibrate your instrument, a small block of data is stored into separate memory within the instrument. For an individual measurement, this is a small section of the overall information captured. This process is completely automatic and happens in the background, without the need for any user input.

This memory is completely independent of the main memory store and cannot be removed from the instrument. It is a physical memory chip that is fastened to the circuit board.

The AuditStore information can be downloaded from an instrument and then compared against a previously downloaded measurement to guarantee its veracity.

4. What Information is Stored?

Critical information about the measurement, such as the time and date it was taken, its duration, and the LAeq, LCPeak and LAFmax values, are stored along with any overload information.

If the instrument the measurement was taken on has statistical values functionality, (the Optimus/Optimus+ Green series from example), the overall LA10 & LA90 values are also stored.

For calibration data, the time, date, calibration level and any offset from the last calibration are stored.

4.1 How Secure is AuditStore Data?

The data held in the AuditStore cannot be accessed by any means other than through the NoiseTools when the user requests a download. Once the AuditStore data has been downloaded, it is encrypted using a secure method and stored into a separate database from the main measurement information.

4.2 Can AuditStore Data be Manipulated?

No. The data held in the AuditStore is stored securely inside the instrument. It is encrypted and stored into a separate database that cannot be accessed physically. The information can only be viewed using the NoiseTools software as reference against which to measure the veracity of measurement data.

4.3 What is the Information Used for?

AuditStore data can be downloaded from the instrument when required through NoiseTools. Please note that the AuditStore data is not downloaded automatically and is not downloaded at the same time as the main measurement data. The data must be downloaded manually as described below:

NoiseTools will check that the measurement information held in the main database and displayed on the screen matches the values within the AuditStore secure memory. NoiseTools will display verification symbols if the information matches, a unique feature which will be useful in any legal proceedings.

4.4 How Many AuditStore Records are Saved?

The AuditStore memory stores up to 30,000 measurements and when this is full, the oldest measurements will start to be overwritten. This means that the most recent 30,000 records are available when the memory is full.

4.5 Does AuditStore Have to be Used?

No. AuditStore is provided as a unique feature of Optimus/Optimus+ sound level meters and Trojan noise nuisance recorders, but there is no requirement for its functionality to be used.

If the AuditStore data is not used, there is no impact on the operation of the instrument, as the data is stored in AuditStore as part of its standard operation.

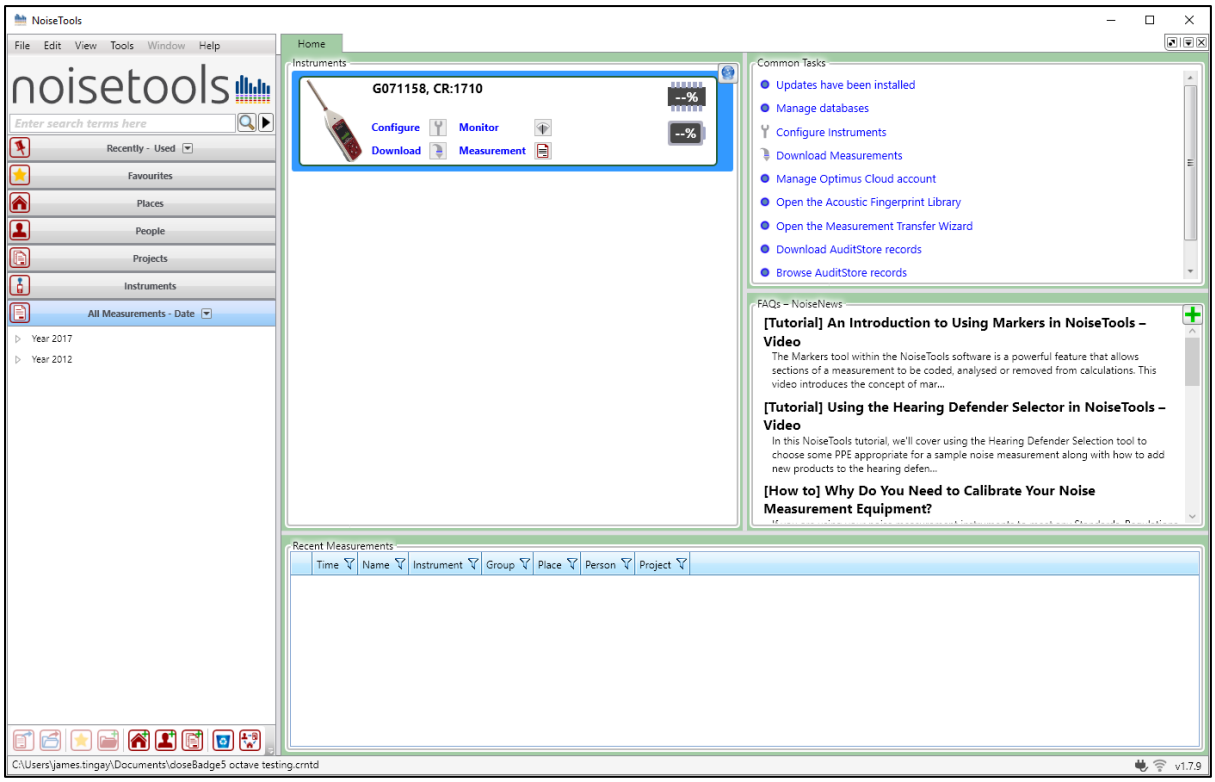
4.6 Does AuditStore Pose Privacy/Security Risks?

No. The information stored in the AuditStore is limited to numerical data only. No audio or VoiceTag data is saved in the AuditStore.

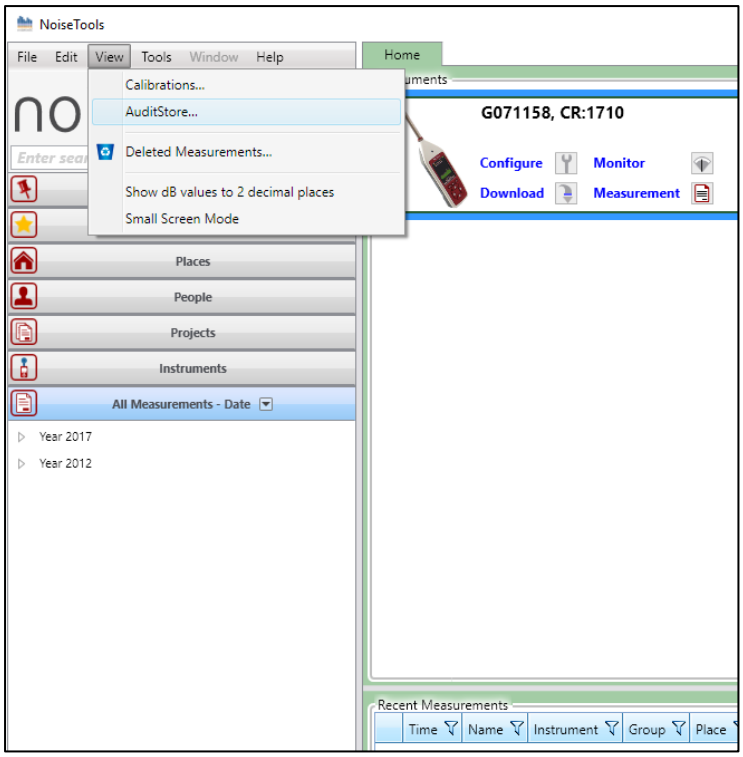
5. How to View AuditStore Data

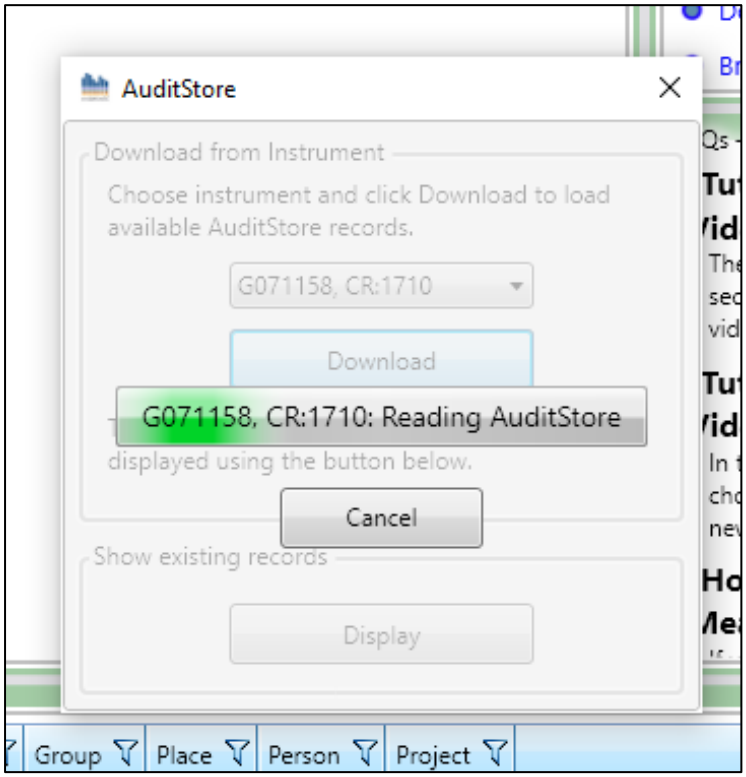
AuditStore is available as standard on all Optimus/Optimus+ sound level meters and Trojan noise nuisance recorders with firmware version 2.4 or later. Downloading the AuditStore data requires NoiseTools version 1.4 or later.

Connect an Instrument to NoiseTools



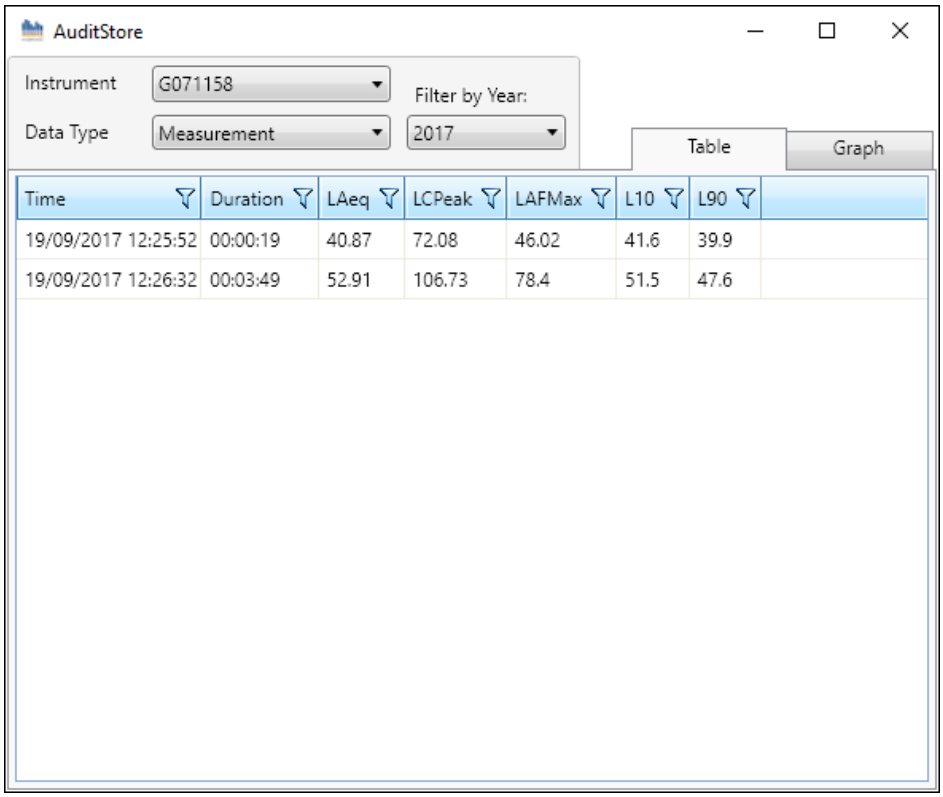
Download AuditStore Information from the Instrument



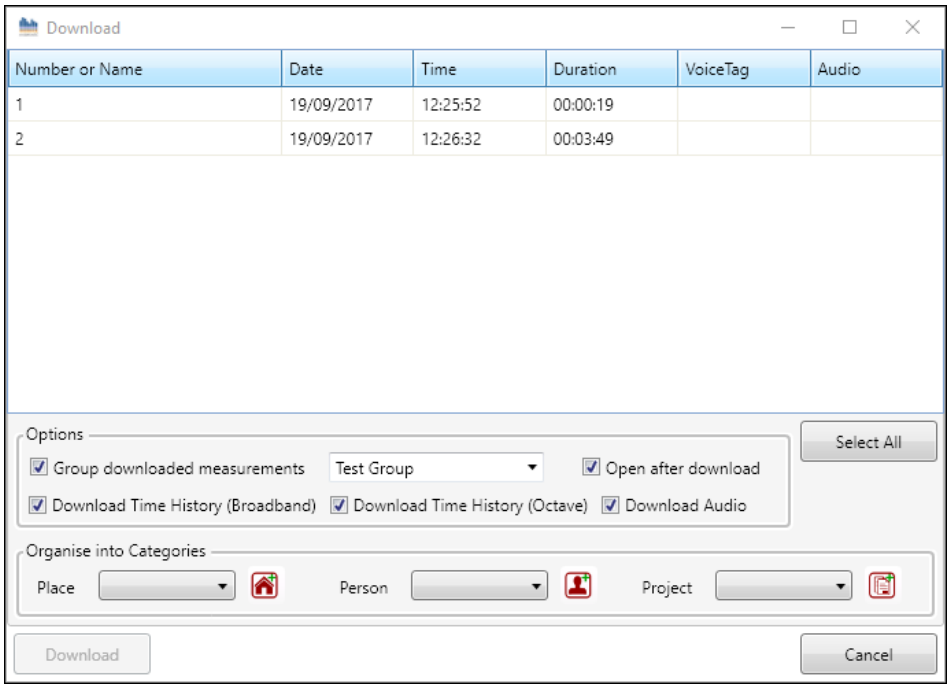


View the AuditStore Data

Click display to view the available AuditStore records for the connected instrument:

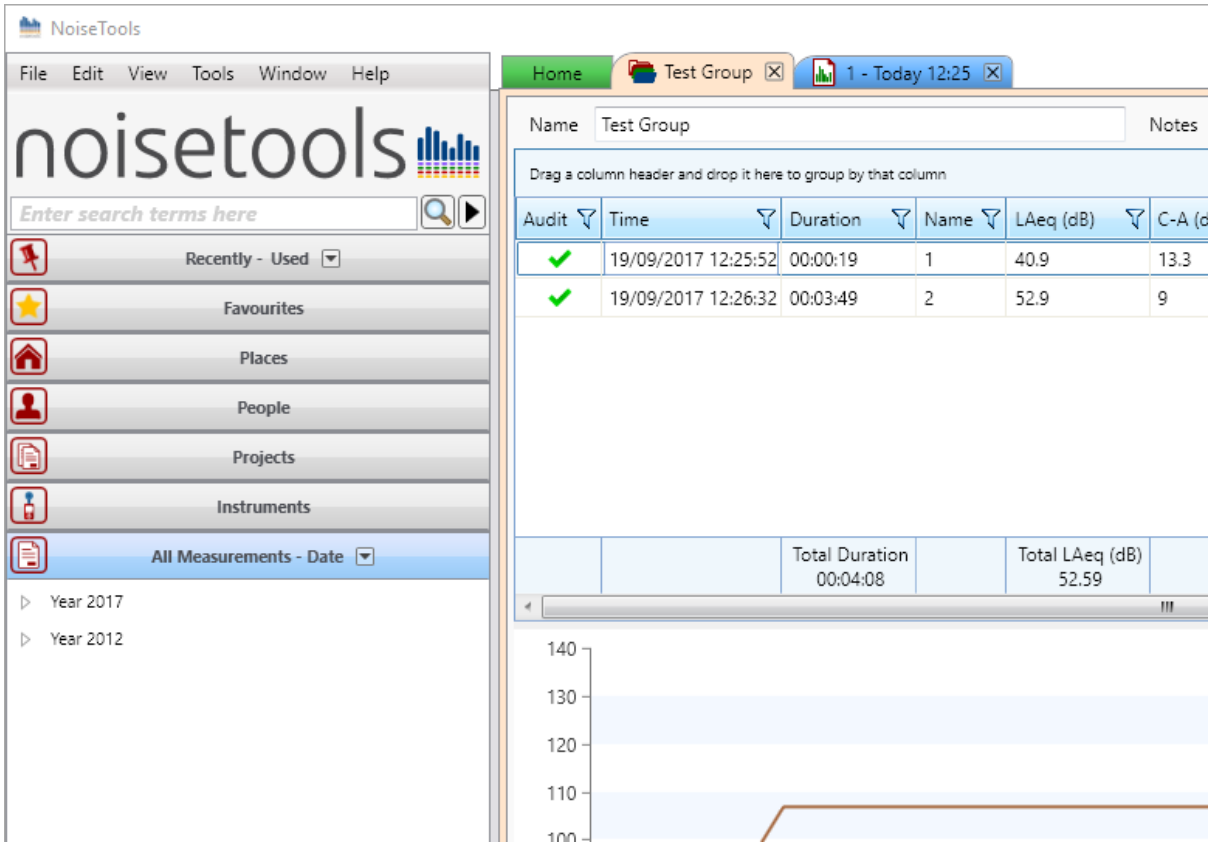


Download and Open a Measurement from the Connected Instrument



Where the measurement data matches the AuditStore information, you will see either a green tick and 'Verified by AuditStore' or a green line under each of the values that are verified.

If you are viewing measurements in a group, you will also see the green tick where the data has been verified:



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