



## **SONIK Sound Level Meter**



### **Operating Manual**

#### **Models S and SE**

Castle Group Ltd  
Salter Road  
Scarborough  
North Yorkshire  
YO11 3UZ, UK

Copyright © Castle Group Ltd 2018

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the permission of the copyright holder.

HB/0142/030/EL

Rev A

[www.castlegroup.co.uk](http://www.castlegroup.co.uk)

# Contents

## **Chapter 1 ..... 1**

Introduction.....	1
-------------------	---

## **Chapter 2 ..... 2**

<b>Features .....</b>	<b>2</b>
-----------------------	----------

Model SE .....	2
----------------	---

Template: All Parameters.....	2
-------------------------------	---

Template: Environmental.....	2
------------------------------	---

Template: Noise at Work.....	2
------------------------------	---

Model S.....	2
--------------	---

<b>Microphone and Pre-Amplifier .....</b>	<b>3</b>
---	----------

Microphone Types .....	3
------------------------	---

Microphone Polarisation .....	4
-------------------------------	---

Microphone Sensitivity .....	4
------------------------------	---

Removal of Microphone.....	5
----------------------------	---

Pre-Amplifier Removal & Fitting .....	5
---------------------------------------	---

Microphone Extension Cable .....	6
----------------------------------	---

Certifiable Calibration.....	7
------------------------------	---

## **Chapter 3 ..... 8**

<b>Measuring Sound.....</b>	<b>8</b>
-----------------------------	----------

Incidence Angle.....	8
----------------------	---

Pressure Field - (meeting ANSI Standards).....	8
--	---

Free Field - (meeting IEC Standards).....	8
---	---

Sound Level – General Advice.....	9
-----------------------------------	---

Overload and Under Range .....	10
--------------------------------	----

## **Chapter 4 ..... 12**

<b>Getting Started .....</b>	<b>12</b>
Keypad Layout .....	12
Powering Your SONIK Sound Level Meter .....	13
Instrument Icons .....	14
Icon Location.....	15

## **Chapter 5 ..... 16**

<b>Using Your SONIK .....</b>	<b>16</b>
Real Time .....	16
Recording .....	17
Recording Screen Display.....	17
Time History Disabled.....	17
Time History Enabled .....	17
Time History Disabled, Duration Timer Set .....	18
Time History Enabled, Duration Timer Set.....	18
Stopping an Active Recording.....	19
Save .....	19
Don't Save .....	19
File Review .....	20
Exit .....	20
Auto Playback.....	21

## **Chapter 6 ..... 22**

<b>Software .....</b>	<b>22</b>
dBdataPro .....	22
The CastleCloud.....	22

The CastleCloud Gateway.....	23
Logging In.....	24
Change Account.....	25
Connect to SONIK.....	26
Update Gateway Software.....	27
Update Instrument Software.....	27

## **Chapter 7 .....28**

### **Menu Structure.....28**

### **Menu Navigation & Settings.....29**

Measurement Setup.....	30
Weightings & Range.....	30
Range.....	31
Frequency Weighting.....	31
Time Weighting.....	31
Exposure.....	31
UK/EU.....	32
OSHA (PEL).....	32
Data Recording.....	33
Time History On - Disabled.....	34
Time Interval.....	34
Timer Selection.....	35
Percentiles (SONIK SE Only).....	36
File Manager.....	37
Load File.....	38
Filter Selection.....	38
Delete File.....	39
Delete All Files.....	40
Template Manager (SONIK SE Only).....	41
Instrument Setup.....	42
Screen.....	42
Brightness.....	42

Screen Colour .....	43
Auto Dim.....	43
Date.....	44
Time .....	44
Information .....	45
Bar Levels.....	46
Calibration .....	47
Cal Value (dB) .....	47

## **Chapter 8 ..... 49**

<b>Measurement Screens .....</b>	<b>49</b>
Measurements .....	49
Measurements Table.....	50
Exposure.....	51
Percentiles (LN) (SONIK SE Only).....	51

## **Chapter 9 ..... 52**

<b>Accessories.....</b>	<b>52</b>
-------------------------	-----------

## **Chapter 10 ..... 53**

<b>Customer Support .....</b>	<b>53</b>
Warranty and After Sales Service .....	53
Instrument Disposal.....	54
Disclaimer .....	55

# Chapter 1

## Introduction

---

Thank you for purchasing a SONIK from Castle Group Ltd.

Your new Sound Level meter is at the forefront of design and technology and yet has been developed for seamless intuitive operation without the unnecessary complexity of traditional sound level meters.

It boasts a high resolution large colour LCD with simple and clear visual data representation, has advanced data recording capabilities which records your data to the large internal memory at your disposal.

Equipped with a simple plug in microphone pre-amplifier, carry strap and a responsive membrane keypad all housed in an elegant, balanced and practical case which has been specifically developed for this application.

The SONIK provides you with choice when it comes to analysing your data, meaning you can always choose the most effective solution for your needs.

The USB drive supplied with your instrument contains the latest version of dBdataPro. Renowned for its simplicity and ease of use, this PC based software is a comprehensive data analysis solution.

The SONIK also gives you the option of connecting to The Castle Cloud through a PC app called the Castle Gateway. The CastleCloud is Castle Group's latest software solution, and its use of Cloud based software allows you to view your data from anywhere in the world, providing you have an internet connection, and a device capable of connecting to the internet.

Welcome to the new era in sound level measurement.

# Chapter 2

## Features

---

### Model SE

---

#### Template: All Parameters

---

**Measurement 1:**

LEQ, LMAX, LE, LEP'd, %Dose, %Dose per Hour, Exposure (Pa2h), L10, L90, (L1, L5, L50, L95 or L99)

**Measurement 2:**

LEQ, LMAX, LPEAK

#### Template: Environmental

---

**Measurement 1:**

LEQ, LMAX, LE, L10, L90, (L1, L5, L50, L95 or L99)

**Measurement 2:**

LEQ, LMAX, LPEAK

#### Template: Noise at Work

---

**Measurement 1:**

LEQ, LMAX, LEP'd, Exposure Points, %Dose, %Dose per Hour, Exposure (Pa2h)

**Measurement 2:**

LEQ, LMAX, LPEAK

### Model S

---

**Measurement 1:**

LEQ, LMAX, LEP'd, Exposure Points, %Dose, %Dose per Hour, Exposure (Pa2h)

**Measurement 2:**

LEQ, LMAX, LPEAK

# Microphone and Pre-Amplifier

---

Measurement microphones by the very nature of their manufacture are precision components that are easily damaged through incorrect use. Great care must be taken when using the instrument to ensure the longevity of the microphone.

## Microphone Types

---

Three different types of microphone are manufactured, and each is designed for measuring noise in different applications which is out of the scope of this manual. Each one however, has a different sound incidence angle. The sound incidence angle determines the angle the SONIK sound level meter is held relative to the actual noise source being measured.

### Free Field

Sound Incidence Angle =  $0^\circ$

Point the sound meter directly towards the noise source

### Pressure Field

Sound Incidence Angle =  $90^\circ$

Point the sound meter at  $90^\circ$  to the noise source

### Random Incidence Field

Point the sound meter at approximately  $70^\circ$  to the noise source



To comply with legislation all SONIK sound level meters outside of the US are supplied with a **Free Field** measurement microphone, and a **Pressure Field** measurement microphone within the US

---



# Microphone Polarisation

---

Microphones require a polarisation voltage to operate and are manufactured in two ways.

## Externally Polarised

These microphones require an external charge for the microphone to operate which is generally 200V and supplied by the sound level meter.

## Pre-Polarised

These microphones generate the polarisation voltage internally and do not require the externally generated 200V polarisation charge.

All microphones supplied with SONIK sound level meters are **Pre-Polarised**.

# Microphone Sensitivity

---

The sensitivity of a microphone is determined by the output voltage it produces for a defined sound source.

Microphones are manufactured with numerous sensitivity levels and operate within a specified tolerance. Different microphones of the same model may therefore give slight differences in readings when used on the same sound meter. To allow for this all SONIK sound level meters have been designed to accommodate any variations in the tolerance of the supplied microphone up to  $\pm 3\text{dB}$ .

All models of the SONIK sound level meter have been designed for microphones with a sensitivity of  $25\text{mV/Pa}$ .

Great care must be taken to ensure the microphone and sound meter sensitivities match otherwise incorrect readings will occur.

# Removal of Microphone

The microphone is fitted to the pre-amplifier by screwing the microphone in a clockwise direction ensuring that the pre-amplifier spring pin is located centrally in the microphone.

To remove the microphone, unscrew in an anti-clockwise direction.

The microphone has a protection grid which can also be unscrewed and removed, great care must be taken to ensure that this is **NOT** removed. Underneath the protection grid is the microphone diaphragm which should never be touched or be subject to dust or dirt. Doing so may damage the microphone beyond repair or affect its acoustic response dramatically.

# Pre-Amplifier Removal & Fitting

To attach the pre-amplifier, position the RED orientation key on the pre-amplifier with the RED identification mark on the SONIK sound level meter and gently push the pre-amplifier into the connector.

To remove, gently pull the pre-amplifier stem away from the instrument body.



To prevent damage occurring to your SONIK sound level meter or your Pre-Amplifier assembly never attempt to twist the pre-amplifier.

# Microphone Extension Cable

---

To attach the microphone extension cable (purchased separately), position the RED orientation key on the extension cable connector with the RED identification mark on the SONIK sound level meter and gently push the extension cable into the connector.

To fit the pre-amplifier to the extension cable, see **Pre-Amplifier Removal & Fitting** above.

To remove, gently pull the extension cable connector by pulling on the knurled part of the stem.

# Certifiable Calibration

---

The calibration process includes the microphone, pre-amplifier and sound level meter. Any change in this measurement chain will require a new calibration certificate.

Castle Group Ltd offers a complete calibration service offering either a full UKAS calibration or a standard traceable calibration which can be supplied with or without a test report.

It is recommended that your sound meter instrumentation is calibrated annually to ensure your measuring equipment is completely accurate and fully compliant.

# Chapter 3

## Measuring Sound

---

Always calibrate your SONIK sound level meter prior to and after taking measurements using a known sound source, such as the Castle GA607 Sound Level Calibrator.

### Incidence Angle

---

It is essential that you hold your SONIK sound level meter at the correct angle to the noise source depending on the microphone type supplied with your meter.

The type of microphone supplied with your instrument will either be **Free Field** or **Pressure Field**, see below for details of the measuring incidence angle for each microphone type: -

#### Pressure Field - (meeting ANSI Standards)

---

Pressure Field microphones required incidence angle of  $90^\circ$ , therefore whilst measuring ensure your SONIK sound level meter is at  $90^\circ$  relative to the noise source being measured.

#### Free Field - (meeting IEC Standards)

---

Free Field microphones require an incidence angle of  $0^\circ$ , therefore whilst measuring always point your SONIK sound level meter directly towards the noise source being measured.



To comply with legislation all SONIK sound level meters outside of the US are supplied with a **Free Field** measurement microphone, and a **Pressure Field** measurement microphone within the US

---

# Sound Level – General Advice

---

In some environments, high levels of noise can occur. The SONIK sound level meter models S & SE have therefore been designed for complete accuracy up to sound levels of 140dB.

Before you record measurements, take the time to ensure you have chosen the optimum range for the application. Wherever possible, the optimum range is when the average measured signal is approximately half way between the top of the range and the bottom of the range without an overload condition.

The SONIK will register an overload if the noise level exceeds the linear operating range of the range selected by 0.5dB, it is therefore advisable to determine if an overload will occur on the selected range before measuring. In such cases, you will need to select a higher range to accommodate the higher peak levels. See **Weightings and Range** for peak range limits on each individual range.

If the noise levels are 0.1dB too low for the range selected, then the meter will display an under range condition. Under these circumstances, you will need to select a lower range.

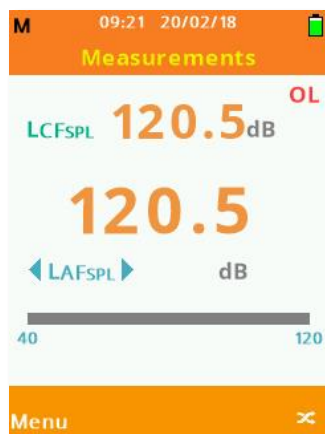
For more detailed information, see **Overload and Under Range** below.

If measuring low level noise, then be aware of the inherent noise levels caused by a combination of thermal and electrical noise from both the microphone and the sound level meter. Measuring data that lies within 10dB of the lowest quoted level on the lowest measuring range may be influenced by the self-noise of the system.

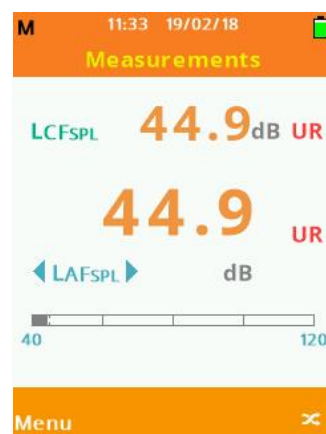
# Overload and Under Range

As mentioned in the previous General Advice section, the SONIK will register an overload if the noise level exceeds the current measurement range, and will register under range if the noise levels are too low for the current range.

On either of these occasions, the SONIK will display this on your screen. For overload this is displayed as 'OL' in bold red lettering or inside a red box, and under range is similarly displayed however shows 'UR'. These can always be found in the same place on each measurement screen, as shown below.



Overload



Under Range

M 12:04 15/02/18  
Measurements Table

Measurement 1	Measurement 2
OL dB	OL dB
LAFsPL 120.6	LCFsPL 120.6
LAFMAX 120.6	LCPEAK 120.6
	LCFMAX 120.6

Menu

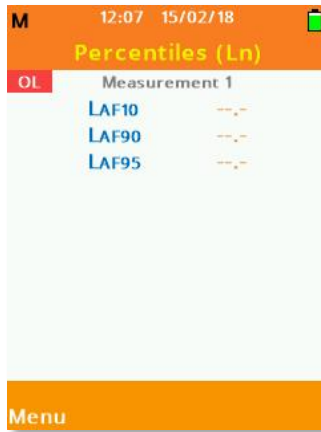
Overload

M 09:23 20/02/18  
Measurements Table

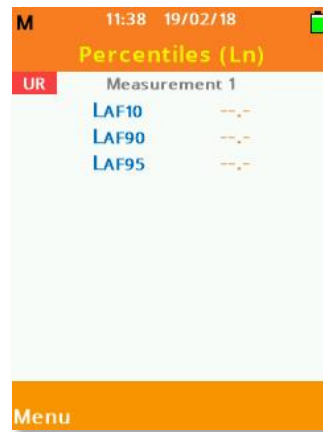
Measurement 1	Measurement 2
UR dB	UR dB
LAFsPL 44.1	LCFsPL 44.1
LAFMAX 94.0	LCPEAK 94.0
	LCFMAX 94.0

Menu

Under Range



**Overload**



**Under Range**



**Overload**



**Under Range**

Under range on each measurement acts independently and under some conditions may display under range on only one measurement. Overload does not act this way and will display an overload for both ranges.

During overload or under range conditions, the bar displayed at the bottom of the measurement home screen will change to grey, indicating that you're operating outside of the current range.



Some screens displayed may not be available on your instrument, depending on your model and the template currently selected.



# Chapter 4

## Getting Started

---

### Keypad Layout

---



# Powering Your SONIK Sound Level Meter

---

Your SONIK sound level meter can be powered from four 1.5V AA size batteries, four 1.2V rechargeable batteries or the micro USB connection via a USB port or power supply capable of delivering 0.5A.

The battery compartment is located at the rear of your sound meter, remove the battery door and insert the batteries using the correct polarity which is clearly shown where the batteries are located.

Replace the battery door securely before using the instrument.

In all power configurations press and hold the **Power Key** for approximately one second to switch the instrument on.








To switch the instrument off, hold the **Power Key** down for approximately three seconds and follow the on-screen instructions, note that if no key is pressed within two minutes of switching the sound level meter on then the unit will automatically power down.



# Instrument Icons

---

Several icons are used on the SONIK sound level meter to easily identify the functionality or useful settings of the instrument: -

	Low Measuring Range Active
	Medium Measuring Range Active
	High Measuring Range Active
	USB Active
	Battery Charge
	Recording Data Active
	File Review Active

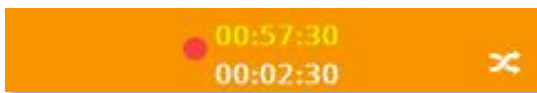
# Icon Location

---

The top dark orange bar on your SONIK instrument displays most of the information icons, the current time, date, measurement range and the current screen selected: -



The bottom lighter orange bar will display the Record or File Review symbols in a similar position to the image shown below. Note that the image below may have different values to those on your display: -



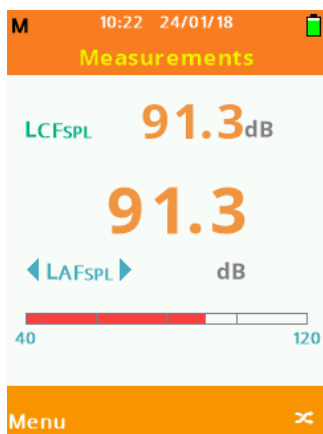
# Chapter 5

## Using Your SONIK

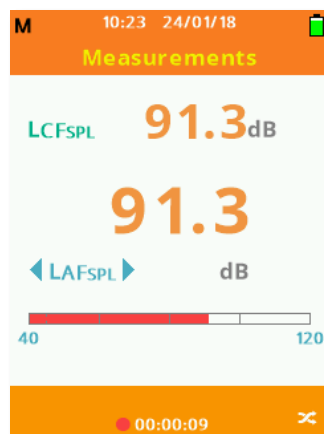
The SONIK sound level meter has three primary operational modes, these are: -

- Real Time
- Recording
- File Review

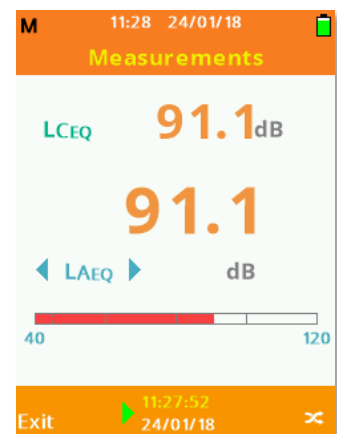
Each mode can be quickly identified by viewing the bottom bar, Real Time has no icon, Record has a standard red record symbol and File Review shows a green directional arrow.



Real Time



Record



File Review

## Real Time

This is the standard mode of operation for your SONIK sound level meter.

The menu system can be accessed whilst in real time mode and the instrument settings can be changed if required.

Measurement screens are accessible but not all parameters all available whilst real time mode is active.

It is possible to reset parameters in real time mode by quickly pressing the **Power** Key.

# Recording

---

Recording data is achieved by pressing the **Record** key whilst in real time mode.

The settings for recording are applied under **Measurement Setup, Data Recording**.

## Recording Screen Display

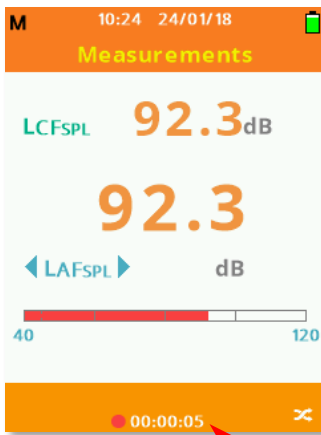
---

The settings made under Data Recording will affect the information and how it's displayed on your SONIK instrument.

### Time History Disabled

---

If Time History is not enabled for the recording, the bottom bar will only indicate the elapsed recording time: -

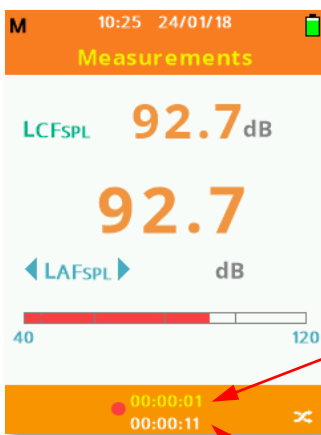


Elapsed Recording Time

### Time History Enabled

---

When Time History is enabled for the recording, the bottom bar will display the elapsed recording time and the current interval countdown time: -



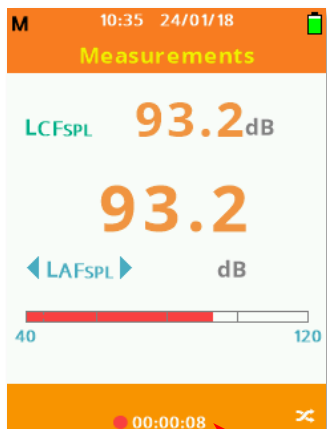
Interval Countdown Time

Elapsed Recording Time

## Time History Disabled, Duration Timer Set

---

When Time History is disabled for the recording but the Duration Timer is enabled, the bottom bar will only display the elapsed recording time: -

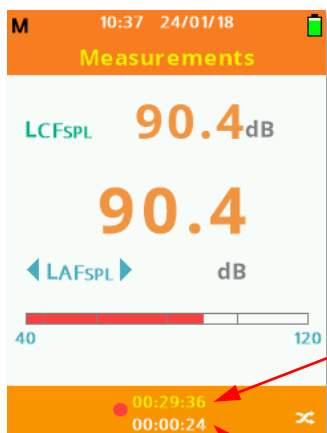


Elapsed Recording Time

## Time History Enabled, Duration Timer Set

---

When both Time History and Duration Timer are enabled for the recording, the bottom bar will display the elapsed recording time and the current interval countdown time: -



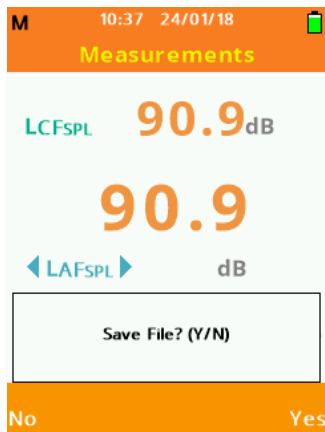
Interval Countdown Time

Elapsed Recording Time

# Stopping an Active Recording

---

Pressing the **Stop** key during an active recording will display the available options: -



## Save

---

Select Yes by pressing **Soft Key 2**.

## Don't Save

---

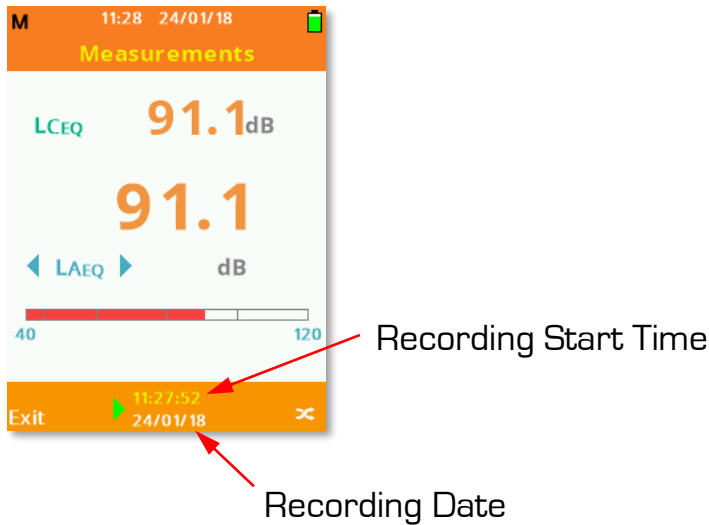
Select No by pressing **Soft Key 1** to return to Real Time mode.



# File Review

---

File Review can be accessed by either manually loading a file under **File Manager**, or by enabling the Auto Playback function (see below).



Use the **Up** or **Down Arrow** keys to scroll measurement screens or the **Left** or **Right Arrow** keys to scroll measurement parameters.

Use **Soft Key 2** to swap between measurement 1 or measurement 2.

Use the **Left** or **Right Arrow** keys to scroll parameters.

## Exit

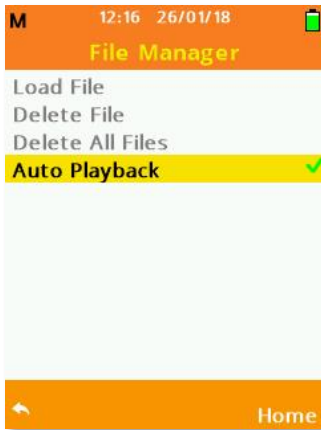
---

Select Exit using **Soft Key 1** to quit File Review and return to Real Time mode.

# Auto Playback

---

Auto Playback is located in the **File Manager** section of the **Main Menu**, and can be enabled or disabled by pressing **OK**. When enabled, after a recording has been saved, your SONIK will automatically enter File Review instead of returning to Real Time mode.



# Chapter 6

## Software

---

The SONIK presents you with two options for data analysis software; The CastleCloud, or PC based software dBdataPro. Both of these provide a simple and free data analysis solution.

### dBdataPro

---

dBdataPro is a PC based software and is available in two forms; dBdataPro and dBdataPro Lite.

Further information and details can be found in the dBdataPro manual, located on the USB drive provided with your instrument.

### The CastleCloud

---

The CastleCloud is the latest software solution developed by Castle Group, and can be accessed by visiting [TheCastleCloud.com](http://TheCastleCloud.com).

The CastleCloud, as its name may suggest, utilises Cloud based software. This means you can view your data from anywhere in the world, providing you have an internet connection, and a device capable of connecting to the internet (mobile, tablet, laptop, etc.).

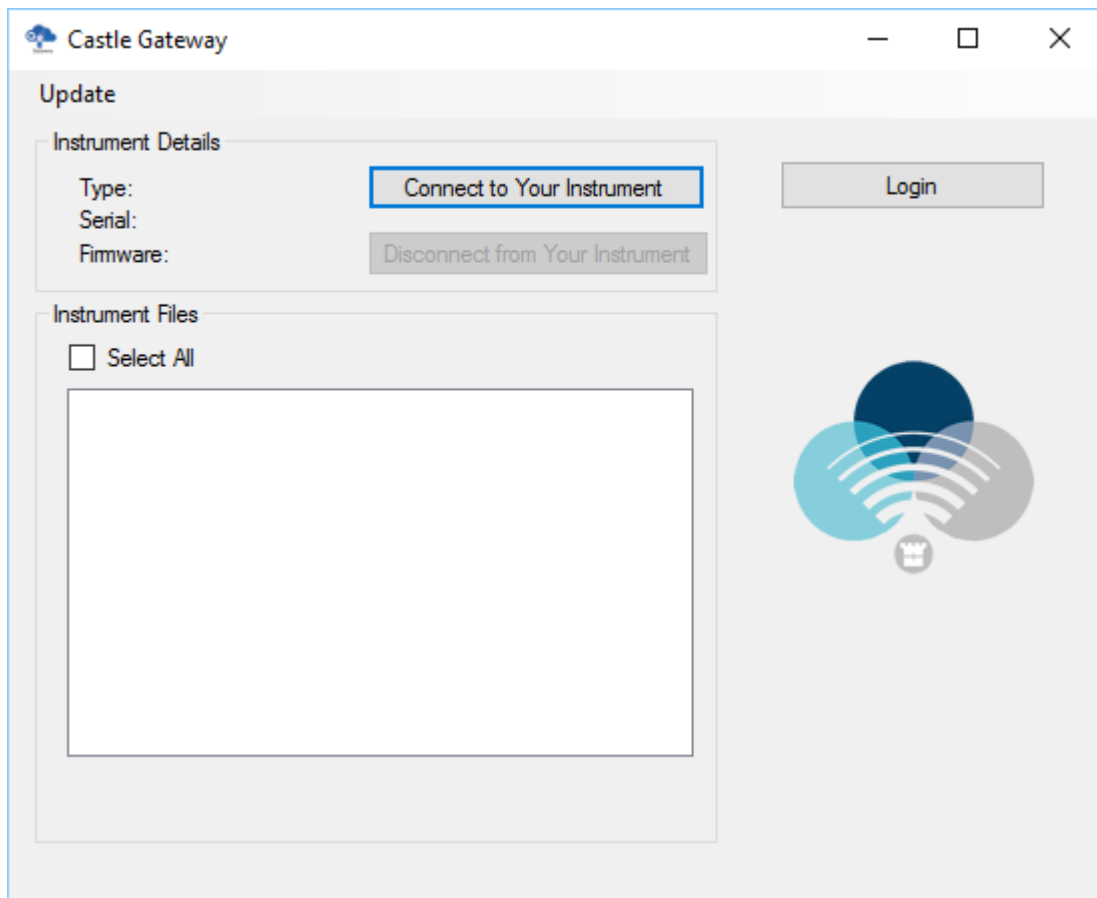
# The CastleCloud Gateway

The Castle Gateway app allows you to upload your recordings via your PC using the included Micro USB Cable and your PC's internet connection.

The Gateway app can be downloaded from [TheCastleCloud.com](http://TheCastleCloud.com) and installed on any computer.

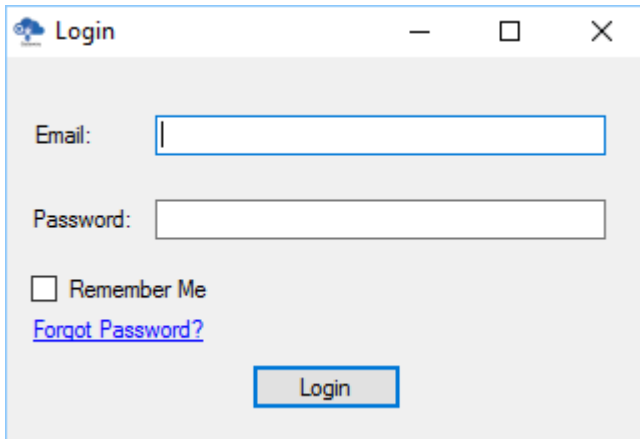


Double click the launch icon  to run the application: -



# Logging In

With the Castle Gateway application open, login to your CastleCloud account by clicking on the **Login** button: -

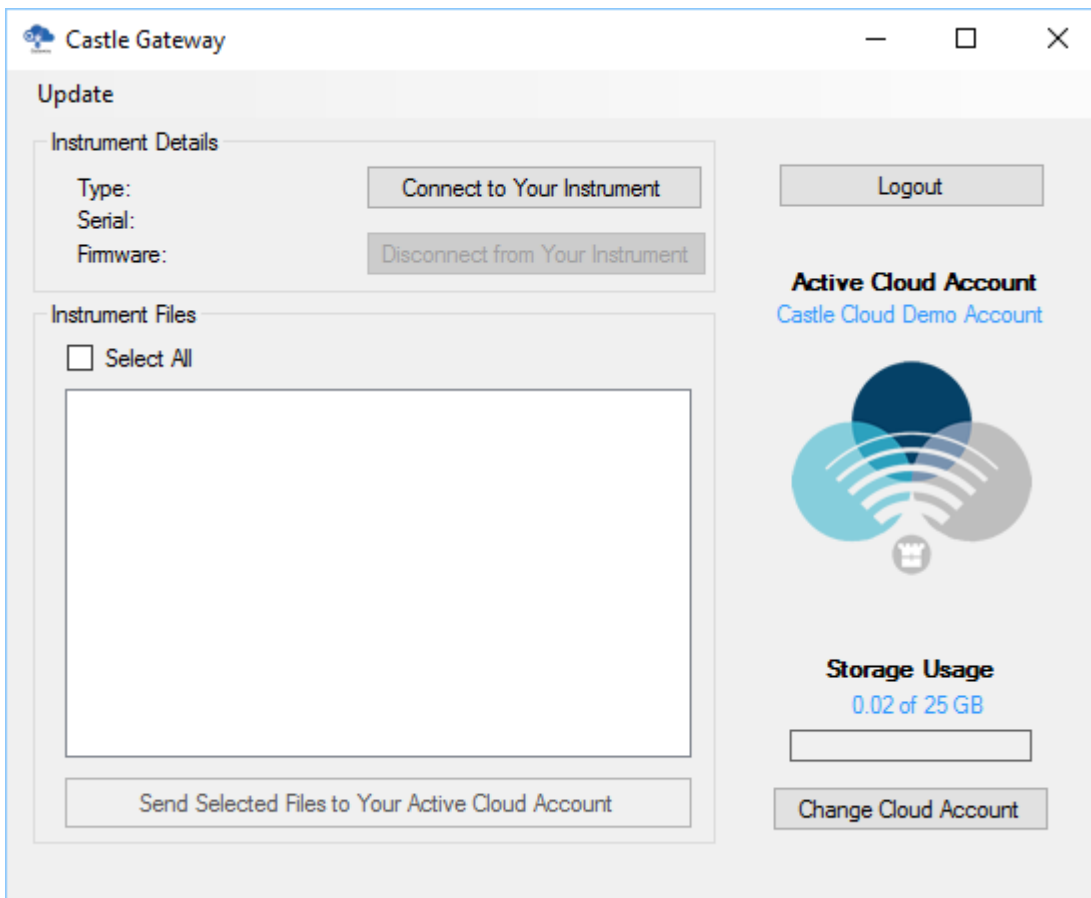


The screenshot shows a window titled "Login" with a standard Windows title bar (minimize, maximize, close). The window contains the following elements:

- An "Email:" label followed by a text input field.
- A "Password:" label followed by a password input field.
- A checkbox labeled "Remember Me".
- A blue hyperlink labeled "Forgot Password?".
- A "Login" button at the bottom center.

Enter your login details and if required tick **Remember Me** to save your login details.

Click the **Login** Button to login using the details provided. Once logged in successfully the active account will be shown: -



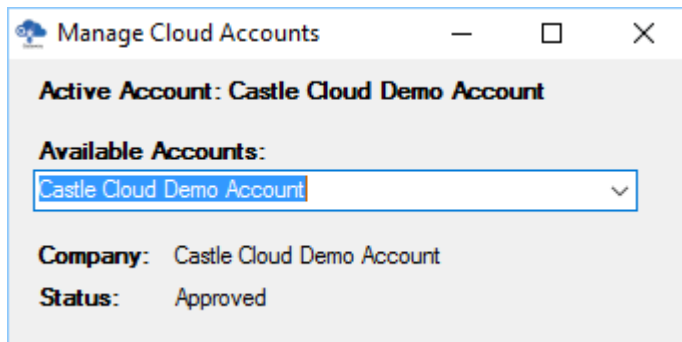
The screenshot shows the main interface of the "Castle Gateway" application. The window title is "Castle Gateway". The interface is divided into several sections:

- Update**: A section at the top left.
- Instrument Details**: A panel containing fields for "Type:", "Serial:", and "Firmware:". To the right of these fields are two buttons: "Connect to Your Instrument" and "Disconnect from Your Instrument".
- Instrument Files**: A panel below "Instrument Details" containing a "Select All" checkbox and a large empty rectangular area. Below this area is a button labeled "Send Selected Files to Your Active Cloud Account".
- Logout**: A button located in the top right corner.
- Active Cloud Account**: A section in the middle right showing the text "Active Cloud Account" and "Castle Cloud Demo Account" below it. Below the text is a circular icon with a Wi-Fi signal symbol and a small "M" logo.
- Storage Usage**: A section at the bottom right showing the text "Storage Usage" and "0.02 of 25 GB" below it. Below the text is a progress bar and a button labeled "Change Cloud Account".

# Change Account

---

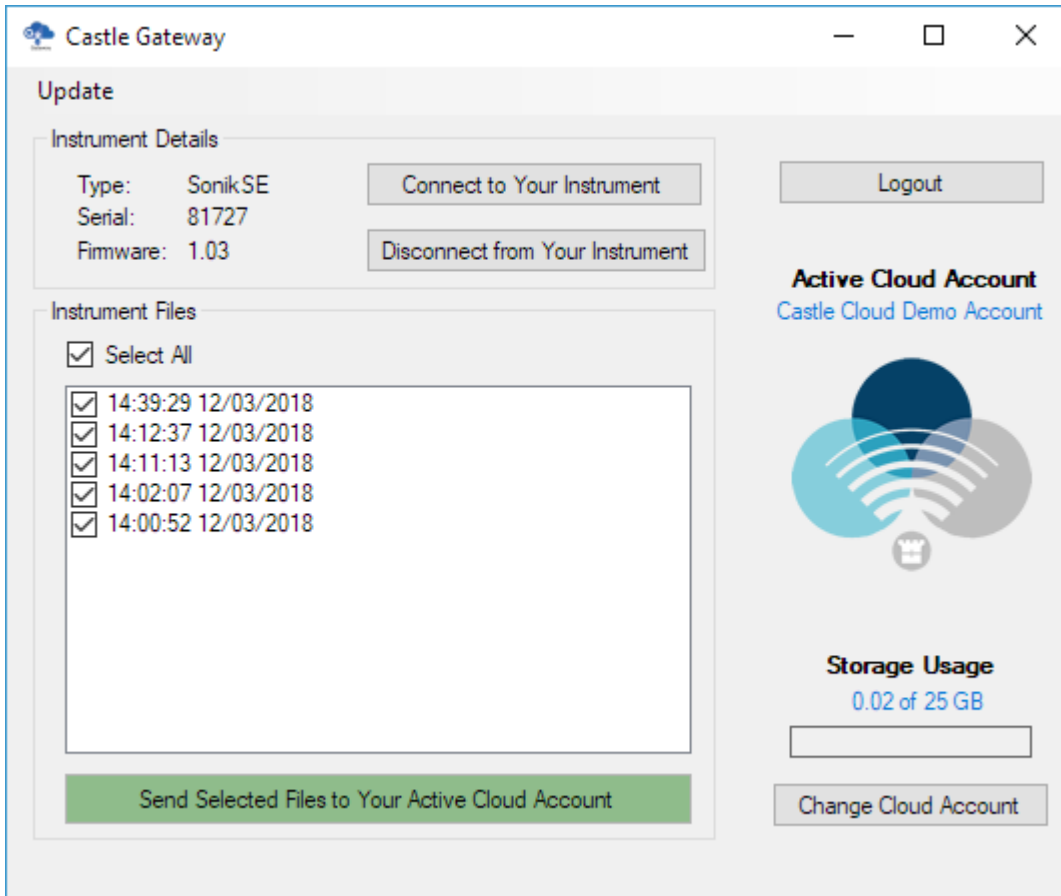
If multiple accounts are held then click on the **Change Cloud Account** button and select the required account: -



# Connect to SONIK

Ensure the SONIK sound level meter is switched on and attach the supplied USB cable to the sound meter and your PC. Your PC must also be connected to the internet.

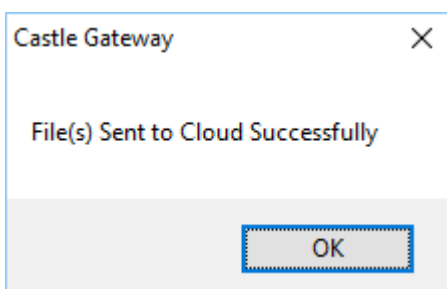
Click on **Connect to Your Instrument**.



A list of all files that can be sent to your CastleCloud account will be displayed within the application.

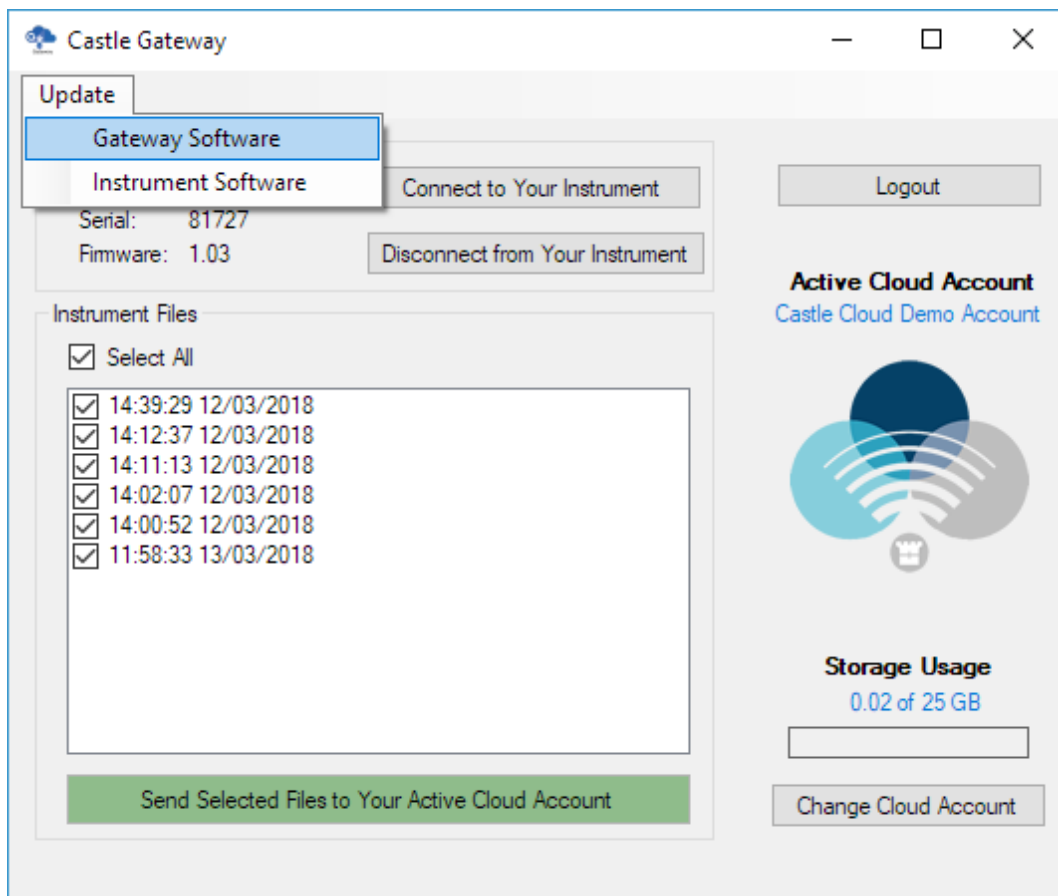
Select the file(s) that you wish to send and then click on the **Send Selected Files to Your Active Cloud Account** button.

All selected files will then be uploaded and viewable online through your CastleCloud account.

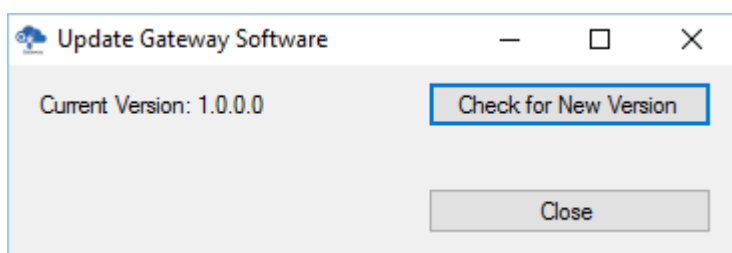


# Update Gateway Software

Select **Update** and then **Gateway Software**: -



The current Gateway Software version is displayed: -



Click on **Check for New Version** to check TheCastleCloud.com for updated software and follow on screen prompts as required.

# Update Instrument Software

Select **Update** and then **Instrument Software** to check and update your instruments software if available.



# Chapter 7

## Menu Structure

---

The complete menu system is conveniently shown below: -

- Measurement Setup
  - Weightings & Range
  - Data Recording
  - Exposure
  - Percentiles (SONIK-SE Only)
  
- File Manager
  - Load file
  - Delete File
  - Delete All Files
  - Auto Playback
  
- Templates (SONIK-SE Only)
  - All Parameters
  - Environmental
  - Noise at Work
  
- Instrument Setup
  - Screen
  - Date
  - Time
  - Bar Levels
  
- Calibration
  
- Information

# Menu Navigation & Settings

---

The Main Menu can be selected using **Soft Key 1** when labelled as **Menu**.

On most screens within the SONIK menu system, **Soft Key 1** can be used to go back to the previous screen, this will be displayed using the **←** symbol when available.

Similarly, **Soft Key 2** can be used to go back to the measurement screen, this will be displayed as **Home** when available.

The Main Menu is not available when the sound level meter is recording: -



Scroll the available options using the **Up** or **Down Arrow** keys, press **OK** to choose the highlighted selection.



Hold down the Directional Arrow keys to rapidly amend or scroll selections

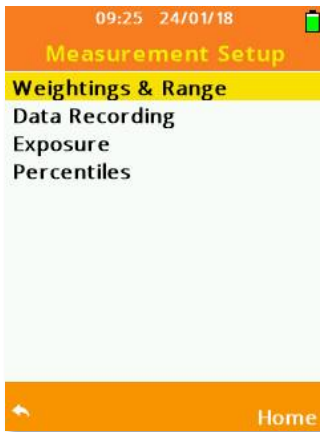
---

# Measurement Setup

---

Select Measurement Setup to change your recording settings and how information is displayed.

Scroll the available options using the **Up** or **Down Arrow** keys, press **OK** to choose the highlighted selection.



## Weightings & Range

---

Select Weightings & Range to change the measurement range and the weightings applied to each measurement.

Scroll through the available options using the **Up** or **Down Arrow** keys and use the **Left** or **Right Arrow** keys to amend the selection.



## Range

---

Your SONIK is fitted with three operating ranges named Low, Medium and High.

Each range measures linearly, with Low measuring 25dB to 100dB, Medium measuring 45dB to 120dB and High measuring 65dB to 140dB.

## Frequency Weighting

---

Your SONIK sound level meter simultaneously measures sound on Measurement 1 and Measurement 2, and each have different Frequency Weightings applied.

Measurement 1 is locked to 'A' weighting, however measurement 2 can be freely switched between 'A', 'C' and 'Z' weightings.

## Time Weighting

---

Both Measurement 1 and Measurement 2 can also have independent Time Weightings applied.

Select between 'S' - Slow, 'F' - Fast or 'I' - Impulse weightings.

## Exposure

---

The Exposure menu allows you to alter how your SONIK records Exposure data.

Scroll the available options using the directional **Arrow** keys and press the **Left** and **Right Arrow** keys to toggle the highlighted selection.



You have the option to manually set legislation requirements as needed: -

- Exchange Rate = 3, 4, 5 or 6
- Criterion = 70, 75, 80, 85, or 90
- Threshold = Off, 70, 75, 80, 85 or 90

## UK/EU

---

In order to comply with UK or EU legislation, Exchange Rate, Criterion and Threshold should be set as below: -

- Exchange Rate = 3
- Criterion = 85
- Threshold = Off

## OSHA (PEL)

---

In order to comply with OSHA (PEL) legislation, Exchange Rate, Criterion and Threshold should be set as below: -

- Exchange Rate = 5
- Criterion = 90
- Threshold = 80

The Exposure measurement screen displays and records the following parameters: -

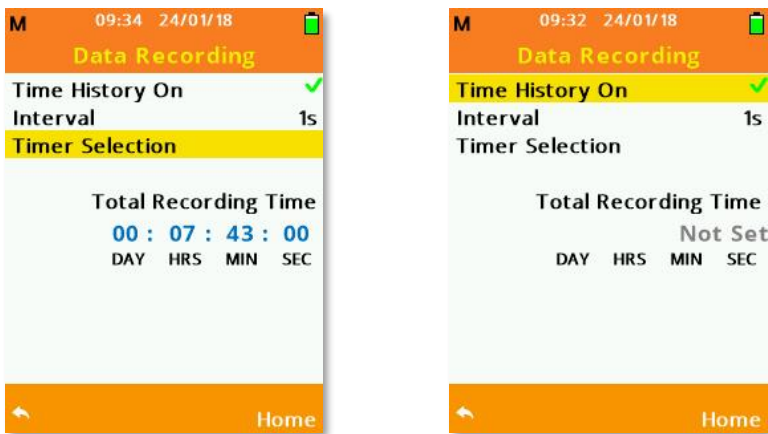
- LAEPd, Exposure(Pa<sup>2</sup>h) %DOSE, % DOSE/HR, POINTS, POINTS/Hr

# Data Recording

Select Data Recording to enable Time History and to choose any time interval periods required.

The time periods recorded by the instrument are determined by the Time History settings, the settings made within the Timer Selection or by the user manually stopping the recording.

If the Duration Timer has been set under Timer Selection, this will be shown on the Data Recording screen as the Total Record Time. If no settings are made with Timer Selection, then **Not Set** will be shown.



Scroll the available options using the **Up** or **Down Arrow** keys.

Press **OK** or the **Left, Right Arrow** keys to toggle Time History On.

Use the **Left** or **Right Arrow** keys to amend the values for Short Time Interval and Long Time Interval.

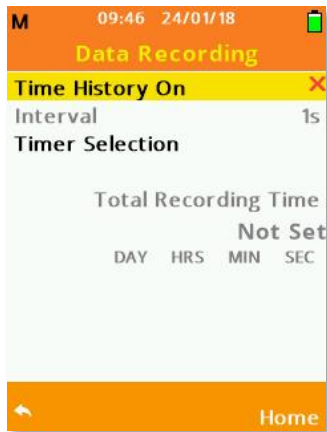
Press the **OK** key to select Timer Selection.

## Time History On - Disabled

---

If Time History On is disabled, then all data recordings made will not contain any Time History data and the Interval settings become unavailable.

In this case, the instrument will record one set of measurements over the total measurement time.



## Time Interval

---

When Time History On is enabled, each recording will calculate data over the Time Interval selected.

The available options for Time Intervals are as follows: -

- 1s, 10s, 1m, 5m, 10m, 15m, 30m, 1hr, 8hr, 12hr



Calculations over Time Intervals are not displayed on screen

---

## Timer Selection

---

Choose Timer Selection to set the overall automatic recording length.



Press **OK** to enable the Duration Timer. With the option enabled, use the **Left** or **Right Arrow** keys to move and highlight the selection to change. Use the **Up** or **Down Arrow** keys to amend the selection. The Duration Timer can be used with or without Time History enabled.

The settings can be amended as shown below: -

- 00 to 23 HRS, 00 to 59 MIN, 00 to 59 SEC



## Percentiles (SONIK SE Only)

---

Under Percentiles, commonly referred to as LN's, you can select one user defined LN level that is to be recorded.

Highlight the required LN and press the **OK** key to toggle the LN on.



The instrument is capable of measuring 3 Percentiles simultaneously, one user selected from the selection above and L10 and L90 which are fixed.

---



Percentiles (LNs) ideally require at least 5 minutes recording time to gather enough data to be accurate.

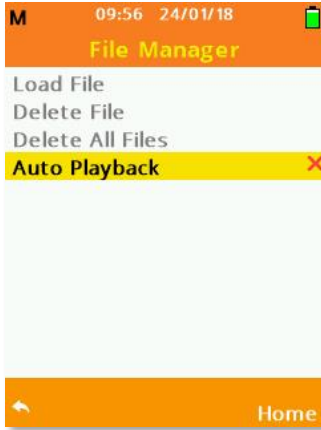
---

# File Manager

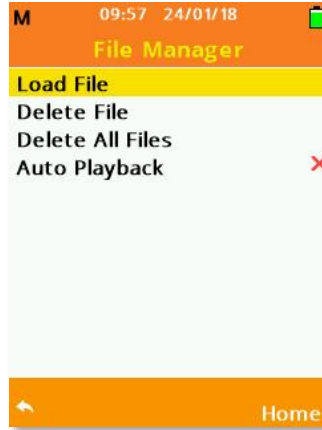
---

Select File Manager to load saved files, delete saved files and toggle Auto Playback off/on.

Option availability will depend on data files being saved: -



**No files saved**



**Files saved**

Scroll the available options using the **Up** or **Down Arrow** keys, press **OK** to choose from the following: -

- Load File
- Delete File
- Delete All Files
- Auto Playback

# Load File

---

Scroll the saved data files using the **Up** or **Down Arrow** keys, press the **OK** Key to open the selected file in File Review mode.

The file number and total number of data files saved are located at the top left hand side of the list. If multiple files exist, then the **Left** or **Right Arrow** keys can be used to scroll the data files by page.



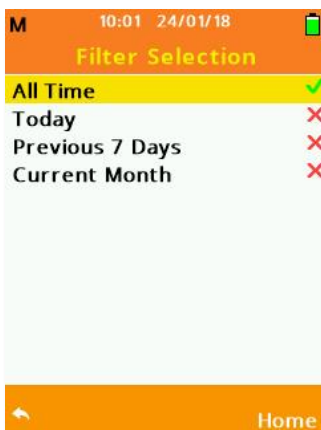
Press **Soft Key 2** labelled Filter to open a new window for file filtering options.

## Filter Selection

---

Filter the list of saved data files by the selections made.

Scroll the options using the **Up** or **Down Arrow** keys and press the **OK** Key or the **Left, Right Arrow** keys to toggle each available option.

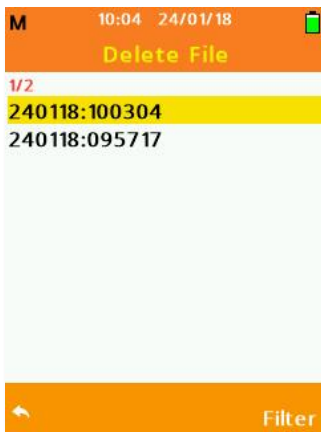


Only one option from **All Time**, **Today**, **Previous 7 Days** or **Current Month** can be selected at any time.

# Delete File

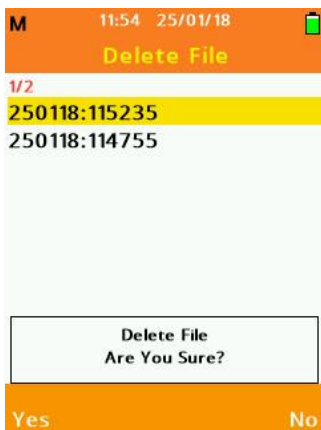
---

Choose Delete File to delete one individual data recording.



Scroll the available data files using the **Up** or **Down Arrow** keys, press **OK** to select the file to delete.

If multiple files exist, then the **Left** or **Right Arrow** keys can be used to scroll the data files by page.



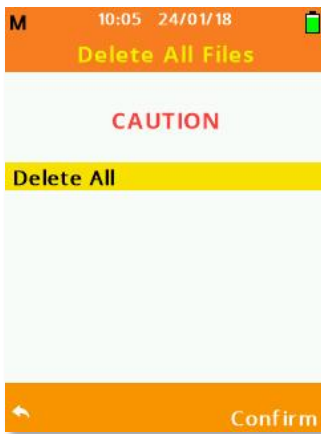
Press **Soft Key 1** labelled **Yes** to delete all the associated files.

Press **Soft Key 2** labelled **No** to cancel.

# Delete All Files

---

Choose Delete All Files to delete all data recordings.



Press **Soft Key 1** to cancel and go back to the previous screen.

Press **Soft Key 2** labelled **Confirm** to delete all files.



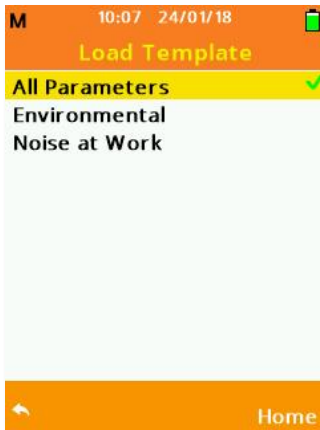
Deleted files are unrecoverable.

---

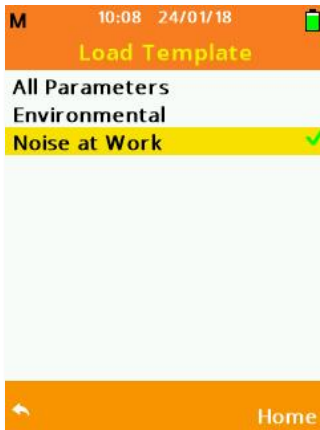
# Template Manager (SONIK SE Only)

---

Select Template Manager to change your current Template.



Scroll the available options using the **Up** or **Down Arrow** keys, press **OK** to choose the highlighted template.



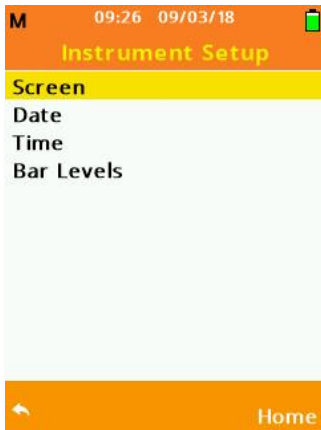
The Template enabled will determine which parameters your instrument will or will not measure: -

- Noise at work will enable Exposure and disable Percentiles
- Environmental will enable Percentiles and disable Exposure
- All Parameters will enable all parameters.

# Instrument Setup

---

Instrument Setup is where specific instrument settings are located.



Scroll the available options using the **Up** or **Down Arrow** keys, press **OK** to choose from the following: -

- Screen
- Date
- Time
- Bar Levels

## Screen

---

Select Screen to alter the screen colour and access power saving features.



## Brightness

---

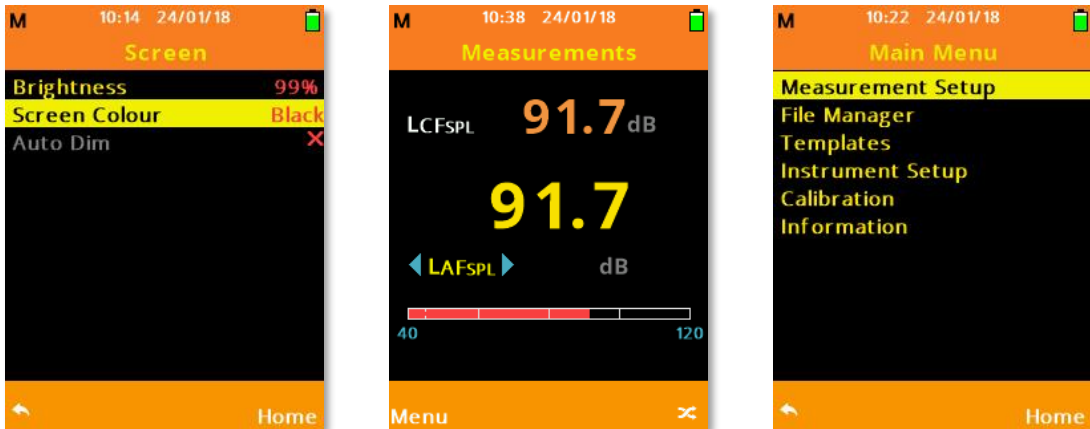
Use the **Left, Right Arrow** keys to adjust the screen brightness as required.

Increased screen brightness reduces battery operating time.

## Screen Colour

---

Use the **Left, Right Arrow** keys to toggle the screen colour between White or Black: -



## Auto Dim

---

The Auto Dim feature will automatically dim the screen to after a set period of time to reduce operating power and increase battery run time.

Use the **Left, Right Arrow** keys to adjust the Auto Dim as below: -

- Off or 1 to 15 (minutes) - 1m recommended



Pressing any key whilst auto dim is active will return the screen to its standard brightness setting.

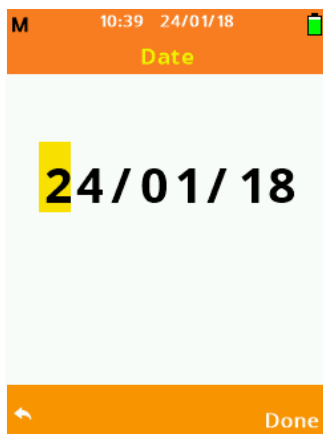
---



# Date

---

Enter the current date using the date format specific to your region.



Use the **Up, Down Arrow** keys to adjust the value.

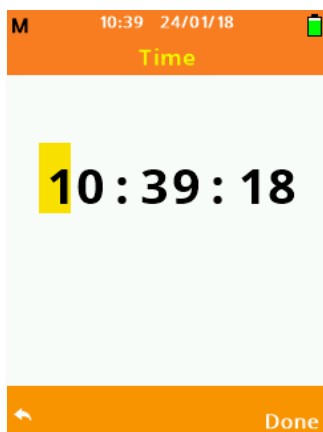
Use the **Left, Right Arrow** keys to move forward or back.

Press **Soft Key 2** labelled **Done** to accept the date changes.

# Time

---

Enter the current date using the time zone specific to your region.



Use the **Up, Down Arrow** keys to adjust the value.

Use the **Left, Right Arrow** keys to move forward or back.

Press **Soft Key 2** labelled **Done** to accept the date changes.

# Information

---

Select to show instrument specific information.



# Bar Levels

---

Select to adjust the levels at which colour coding of the bar levels appear.



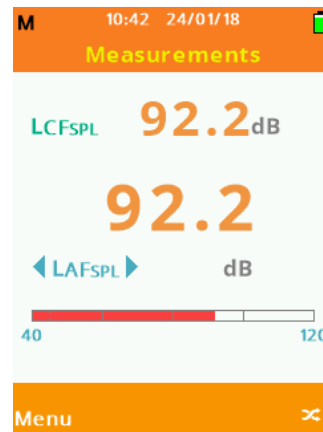
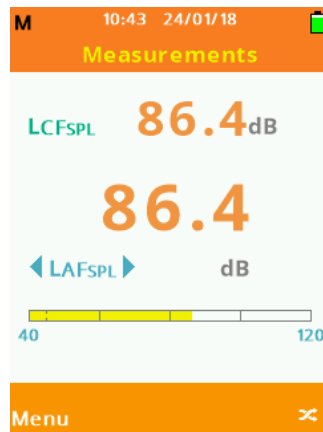
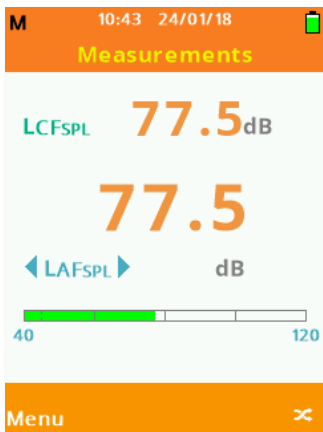
Scroll the options using the **Up** or **Down Arrow** keys.

Use the **Left, Right Arrow** keys to adjust as follows: -

Yellow: 40 to 100dB

Red: 80 to 140dB

Red values cannot be set lower than Yellow values, and any value below Yellow will be displayed as Green on the display.



Settings made for Red are range dependant, values between 121 and 140 will only be visible Red on the High range.

---

# Calibration

---

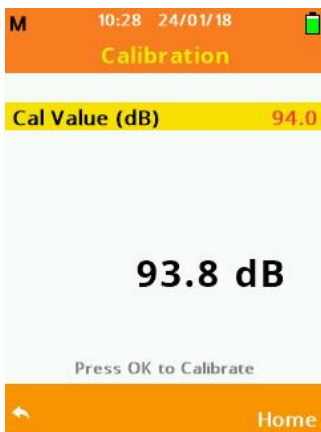
Select Calibration to acoustically calibrate your SONIK sound level meter.

It is recommended that the calibration procedure is undertaken prior to, and after measurements have been taken using either the Castle GA607/GA601 acoustic calibrator, depending on the class of your instrument.

## Cal Value (dB)

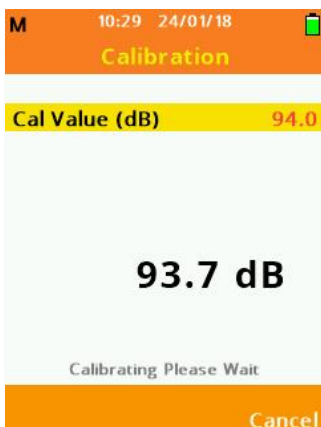
---

Adjust the Cal Value (dB) between 91.0 and 120.0 dB in 0.1 dB steps using the **Left** or **Right Arrow** keys or 1dB steps using the **Up** or **Down Arrow** keys. Include both atmospheric pressure and microphone dependant pressure to free field corrections in the Cal Value.

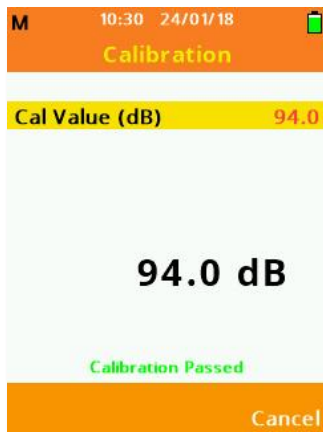


Ensure the calibrator is attached to the microphone by gently inserting the microphone into the cavity of the calibrator. A certain amount of resistance should be felt whilst inserting the microphone as the O-ring on the calibrator forms a seal around the microphone. Ensure that the calibrator is switched on and set to the required output level.

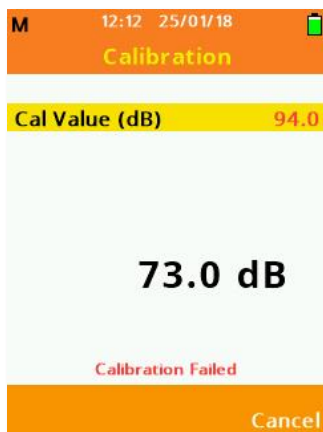
When the Cal Value is set correctly, including corrections, press **OK** to begin calibrating your SONIK sound meter.



If the calibration is successful, then you will be shown the following: -



If the calibration is not successful, then you will be shown the following: -



Please ensure your calibrator is switched on giving the correct output level and that you have entered the correct Cal Value.

# Chapter 8

## Measurement Screens

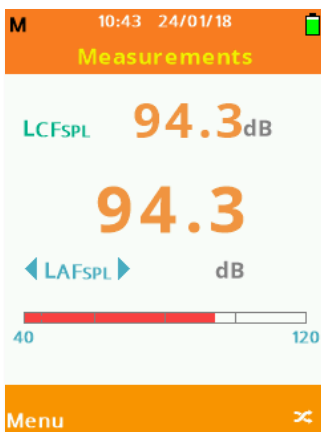
The SONIK sound level meter can independently and simultaneously record two measurements. Each measurement can have different time weightings and/or frequency weightings. To clearly identify these, they are named Measurement 1 and Measurement 2 throughout the menu system when choosing settings.

Percentiles are only ever available for Measurement 1.

Scroll the available measurement screens using the **Up** or **Down Arrow** keys.

## Measurements

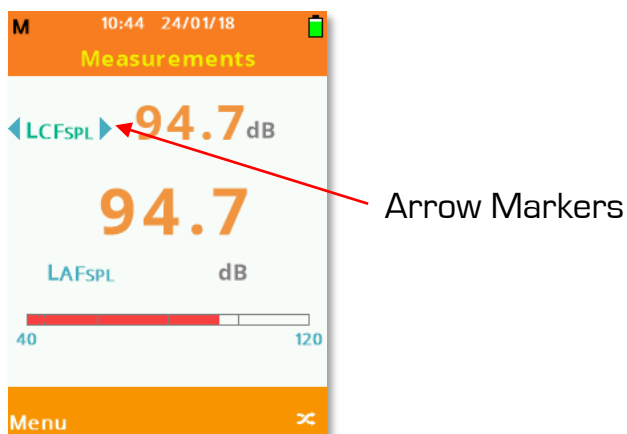
Your SONIK instrument will always show the Measurement Screen below after powering up: -



Measurement 1 on this screen is identified by having the larger font size.

The colour coded measurement bar graph is only applicable to Measurement 1, and the values at which the colour banding changes can be amended. See **Bar Levels** under **Instrument Setup** for details.

Press **Soft Key 2** to swap between the selection of Measurement 1 and Measurement 2. The selected Measurement is identified by having arrow markers on either side of the parameter: -



Use the **Left** or **Right Arrow** keys to scroll the available parameters on either Measurement 1 or 2.

## Measurements Table

The Measurements Table screen shows all standard parameter values available on your SONIK sound meter conveniently on one screen for both Measurement 1 and Measurement 2: -

The screenshot shows the 'Measurements Table' screen with a status bar at the top displaying 'M', '10:52', and '31/01/18'. The table below shows parameters for Measurement 1 and Measurement 2, all with a value of 95.8 dB.

Measurement 1	Measurement 2
LAFsPL 95.8	LCFsPL 95.8
LAFMAX 95.8	LCPEAK 95.8
	LCFMAX 95.8

# Exposure

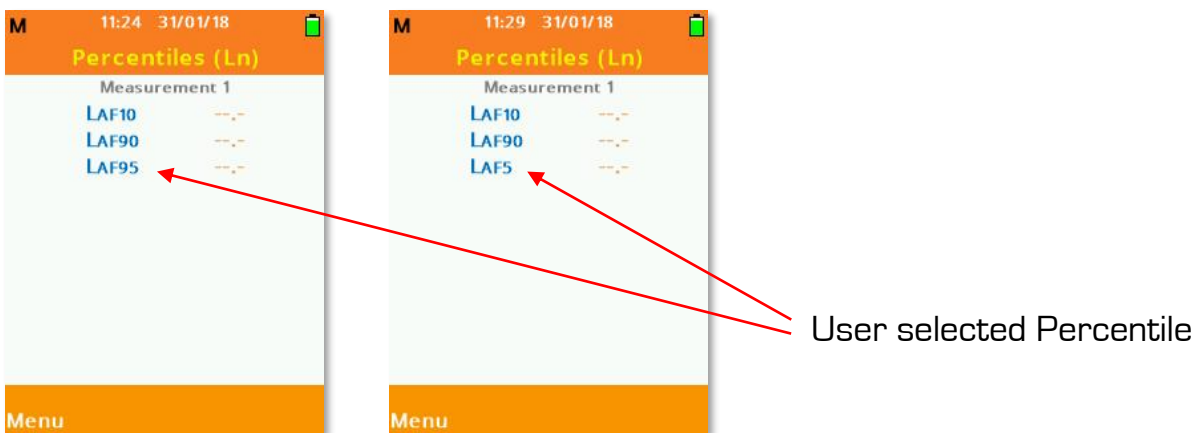
The Exposure screen is only available for SONIK sound level meters fitted with this option and can be calculated from Measurement 1 only. See **Exposure** in **Measurement Setup** for details on how to change the calculated Measurements.



To edit the Exposure Time value, press **Soft Key 2** to highlight **Time**, use the Up/Down Arrow keys to adjust the value, Left/Right to move and **Soft Key 2** to confirm: -

# Percentiles (L<sub>N</sub>) (SONIK SE Only)

The SONIK can measure a maximum of 3 Percentiles at any one time, L10 & L90 are fixed and one additional percentile can be selected from L1, L5, L50, L95 or L99 under **Percentiles (L<sub>N</sub>)** in **Measurement Setup**.





# Chapter 9

## Accessories

---

Item	Order Code
Kit Case for SONIK & Accessories	KA017
Class 1 Dual Level Calibrator	GA607
Class 2 Single Level Calibrator	GA601
Microphone Extension Cable (1 to 10m)	ZL1141-xx
USB Cable 1m (A to micro B)	ZL1108-01
USB Wall Plug (UK)	PSU6
Rubber Protective Sleeve - Blue	dB001B
Rubber Protective Sleeve - Yellow	dB001Y
Techno Line NiMH Battery Charger (UK)	01BATTCHARGER
Eneloop Pro AA Rechargeable Batteries (Pack 4)	01AANiMH-ENELOOP
Class 1 Microphone 25mV/Pa	MK80
Class 2 Microphone 25mV/Pa	MK79
Pre-Amplifier Assembly (Microphone Not Included)	MK141
Hand Strap	70MIS02525

# Chapter 10

## Customer Support

---

### Warranty and After Sales Service

---

Castle Group Ltd design and manufacture precision instruments, which if treated with reasonable care and attention should provide many years of trouble free service.

In the event of a fault occurring, during the warranty period, the instrument should be returned to Castle Group Ltd, in its original packaging, or to an authorized agent. Please enclose a clear description of the fault or symptom.

Details of the warranty cover are available from Castle Group Ltd or an authorized agent.

All instruments are designed to meet rigid British and International Standards. An annual calibration is recommended to ensure that these high standards are maintained. This is particularly important for cases in which instrument readings are to be used in litigation or compliance work.

For warranty and service return to: -

**The Service Department  
Castle Group Ltd  
Salter Road  
Cayton Low Road Industrial Estate  
Scarborough  
North Yorkshire  
YO11 3UZ  
United Kingdom**

Telephone: +44 (0)1723 584250  
Fax: +44 (0)1723 583728  
Email: [techsupport@castlegroup.co.uk](mailto:techsupport@castlegroup.co.uk)  
Web: [www.castlegroup.co.uk](http://www.castlegroup.co.uk)

Any misuse or unauthorized repairs will invalidate the warranty.

Damage caused by faulty or leaking batteries is not covered by the warranty.

# Instrument Disposal

---



The symbol shown to the left can be found on your instrument and means that the product is classed as electrical or electronic equipment and should be disposed of at the end of its life separately to your commercial or household waste.

The Waste of Electrical and Electronic Equipment Directive (2012/19/EU) has been established to help reduce the influx on landfill sites and effectively treat hazardous substances by using best practices for the recovery and recycling of products.

Over 75% of waste electrical goods end up in landfill, where lead and other toxins contained in the electrical goods can cause soil and water contamination.

This can have a very harmful effect on natural habitat, wildlife and also human health. When situated near populated areas these toxins can cause problems to communities as their water and soil is polluted.

Many of the electrical items that we throw away can be repaired or recycled. Recycling items helps to save natural finite resources and also reduces the environmental and health risks associated with sending waste electrical goods to landfill.

To minimise our impact on this earth and to protect the environment for future generations it is important that we are all aware of the consequences of our actions and how we can make a difference.

There are various collection systems in place within the EU for the disposal of your product. To find the nearest UK waste recycling point in your area, enter your postcode in the website **[www.recycle-more.co.uk](http://www.recycle-more.co.uk)**

For more information please contact your local authority, the dealer where you purchased your product or Castle Group Ltd

# Disclaimer

---

Whilst every effort is made to ensure the accuracy and reliability of both the instrument described and the associated documentation, Castle Group Ltd makes no representation or warranties as to the completeness or accuracy of this information.

Castle Group Ltd assumes no responsibility or liability for any injury, loss or damage incurred as a result of misinterpreted or inaccurate information.

Any documentation supplied with your product is subject to change without notice.