

ABOUT THIS MANUAL

READ THIS OPERATING MANUAL BEFORE ATTEMPTING TO USE THE INSTRUMENT.

This manual is valid for the ampliSuite Software. This product is manufactured by:

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1. INTRODUCTION

1.1. THANK YOU

Thank you for being part of reviewing the Amplivox ampliSuite software. The Amplivox ampliSuite is a software application that allows results to be uploaded from an Amplivox instrument to a computer (via a USB port), viewed graphically and then printed. The ampliSuite can be used with audiometers (BETA version) and immittance systems.

ampliSuite is useful for those who do not require more extensive features, such as a database.

Please note: Results can only be uploaded from Amplivox audiometers that incorporate the feature of PC compatibility.

1.2. INTENDED APPLICATIONS

The software is intended to be used as an accessory with compatible hearing testing devices to manage audiometrical data.

The ampliSuite¹ software can display air conduction thresholds (THL), uncomfortable loudness levels (ULL)*, bone conduction levels (including masking)* and speech score percentage vs. levels*. Patient and test details can be entered from the computer and then printed with the audiogram data.

* These results can only be uploaded from Amplivox audiometers that incorporate these features.

Tympanometric and acoustic reflex tests saved in the memory of the Otowave Tympanometers can be transferred to a PC via an infrared adaptor (Otowave 102) or a USB connection (Otowave 202 & 302), and then viewed using the ampliSuite software. Tympanograms and reflex traces (both Ipsilateral and Contralateral in the case of the Otowave 202 & 302) can then be displayed in greater detail than on the screen of the Otowave. All the data and traces from both ears are presented on a single screen, allowing easy comparison. Additionally, results may be classified according to the Jerger scheme and the entire record may then be printed.

1.3. COMPATIBILITY WITH THE CA850

ampliSuite cannot upload results from CA850 audiometers and cannot categorise audiograms. This requires the Audibase5 software, available from Amplivox. Audibase is supplied as standard with a PC850 and Otosure audiometer.

1.4. DISCLAIMER

ampliSuite is an item of **freeware** software which Amplivox provides for use in conjunction with supported Amplivox audiometers and tympanometers.

¹ Only BETA version available for audiometry.



As freeware, Amplivox provides no warranty (implied or otherwise) regarding this software and will not be liable for any aspect or consequences of its copying or use on a 3rd-party computer. By downloading and/or running the application, the user accepts these conditions.



2. AMPLISUITE INSTALLATION

2.1. PRE-INSTALLATION NOTES

2.1.1. PC AND SYSTEM REQUIREMENTS

The PC-requirements are as follows:

- Processor: 1 GHz or faster, one or multi-core
- RAM: 1 GB or more
- Available hard disk space: minimum 200 MB
- Resolution: minimum 1378 x 768
- Graphics device: DirectX 9 with WDDM 1.0 or higher driver
- Available 2.0 or 3.0 USB Port

2.1.2. OPERATION SYSTEM COMPATIBILITY

ampliSuite is supported on the following Microsoft Operating Systems:

- Windows 7
- Windows 8 / 8.1
- Windows 10

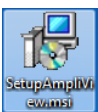
2.2. INSTALLATION

2.2.1. GENERAL

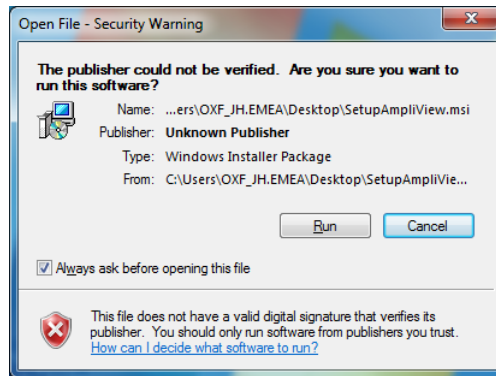
Installation is a straightforward process but the steps must be carried out in the correct order. To ensure you are familiar with the instructions please read this entire user manual before commencing installation.

2.2.2. AMPLISUITE INSTALLATION PACKAGE

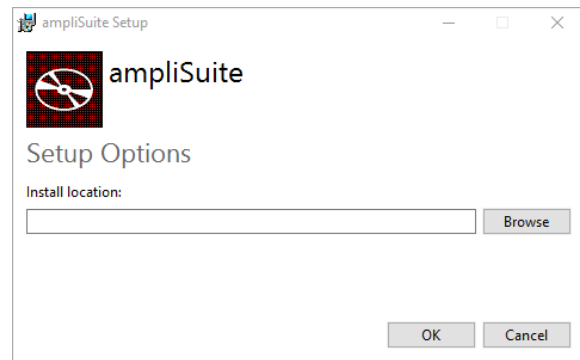
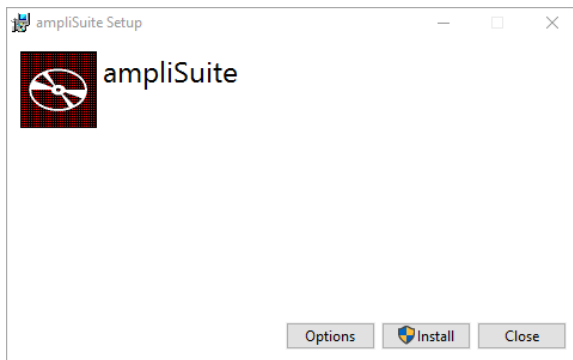
Select the “x32” folder to install the 32-bit version, or the “x64” folder to install the 64-bit version. Then run “ampliSuiteSetup.exe”:



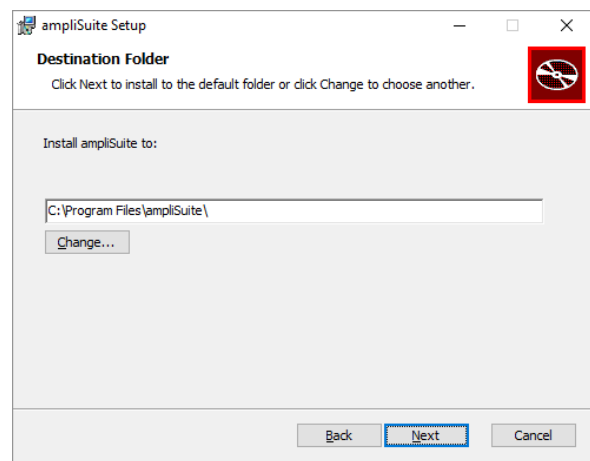
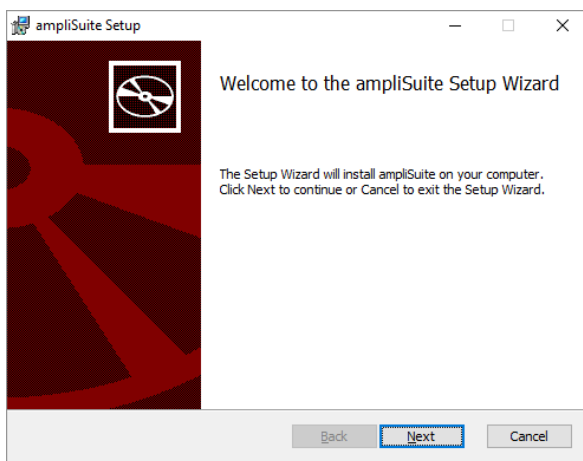
Select “Run” to any security warnings that are displayed:



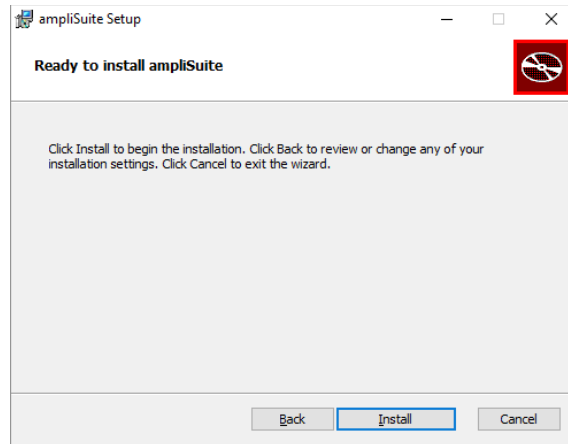
If desired, change the installation location by “Options”. Select “Install” on the welcome screen to proceed with the installation:



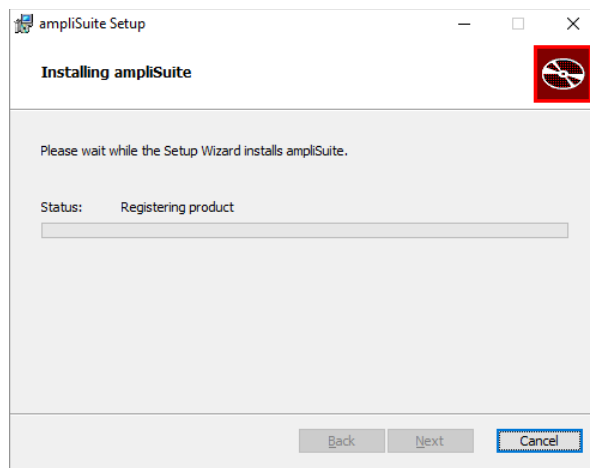
Select “Next” to proceed with the installation:



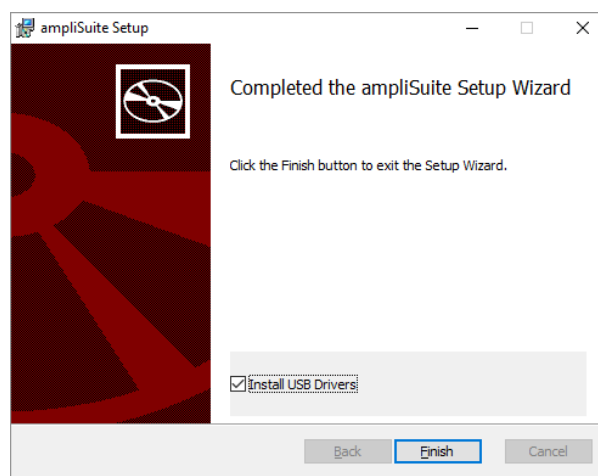
Select “Install” to proceed with the installation:



ampliSuite installation will then commence:



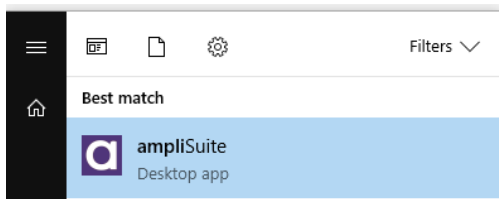
ampliSuite installation is will then complete. Check the box to install the USB drivers if you don't currently have the latest Amplivox USB drivers installed. Select “Finish”.



Please refer to section 2.2.3 for more information about the USB Driver Installation.



To start the ampliSuite Software, select **ampliSuite** from the start menu or the **ampliSuite** icon on the desktop.



To start the ampliSuite Software double click on the **ampliSuite.exe** file. A desktop shortcut to this may be created if desired.

2.2.3. USB DRIVER INSTALLATION

Please note: Make sure that no device is connected to your computer while installing the drivers.

The installation of the latest drivers is not required if the latest version of the USB drivers are already installed. For example, if an Amplivox instrument has previously been connected to the PC, performing the installation again is not necessary.

An instruction on how to install the USB drivers (D-0115682) can be found on the Amplivox download page where the drivers themselves are also located. The manual can also be found in the USB Drivers folder within “PC Applications” on the supplied “MANCD”.



3. AMPLISUITE

3.1.STARTING AMPLISUITE

Open ampliSuite by double-clicking on the shortcut icon on the desktop.

The screenshot shows a registration window titled "REGISTRATION". At the top, it says "Please enter your Amplivox account details below in order to activate this copy of AmpliView. Activation is free for basic features and need only be performed once." Below this are two input fields: "Username" and "Password". Underneath is a link "If you do not yet have a free account, click" followed by a "Create New Account" button. A horizontal line separates this from the next section: "If you have a product key to activate premium features, please enter it here". Below this is an empty input field. A blue arrow points from this field down to two buttons: "Skip Registration" and "Register Ampliview".

You will be presented with a registration screen. You can skip the registration, select “Create New Account” or enter your username and password.

3.1.1. AMPLISUITE ONLINE (BETA)

When selecting “Create New Account”, a webbrowser window will open to enter your registration information. Enter your details and select “Sign up”, when all required fields are filled out.

The screenshot shows a "Sign Up" web browser window. It has a "Sign In" link in the top right corner. The form contains the following fields: "First Name", "Last Name", "Email" (with a placeholder "user@company.com"), "Password", "Company Name", "Address" (which includes "Street Address", "City", and "County" sub-fields), "Postcode", and a "Country" dropdown menu currently set to "United Kingdom". A blue "Sign Up" button is located at the bottom of the form.

After the registration, an email will be sent to you. To complete the registration process, click the personalised link in the email and your account will be activated.

Success

Please confirm your email address

Your account has successfully been created.

Please check your email inbox, and follow the link present in order to confirm your account.

Success

Your account is now activated

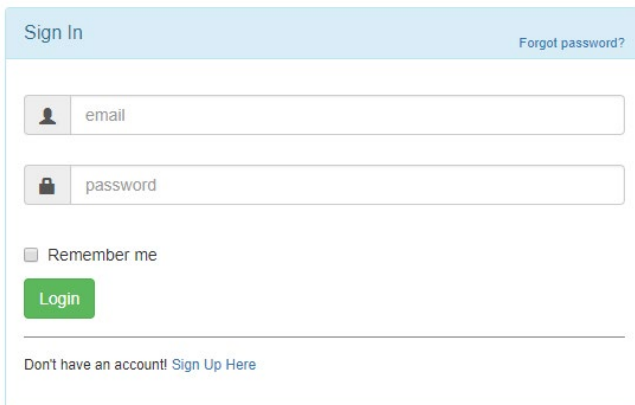
Your account has successfully been activated.

You may click [here](#) to log in to the system, or access via desktop applications.



3.1.2. USE AMPLISUITE ONLINE

You can log into ampliSuite online (<https://audaera.nirima.com/account/login.jsp>).



The screenshot shows a 'Sign In' form with a light blue header. In the top right corner of the header is a link for 'Forgot password?'. Below the header are two input fields: the first is labeled 'email' with a person icon, and the second is labeled 'password' with a lock icon. Below these fields is a checkbox labeled 'Remember me'. A green 'Login' button is positioned below the checkbox. At the bottom of the form, there is a horizontal line and a link that says 'Don't have an account! Sign Up Here'.

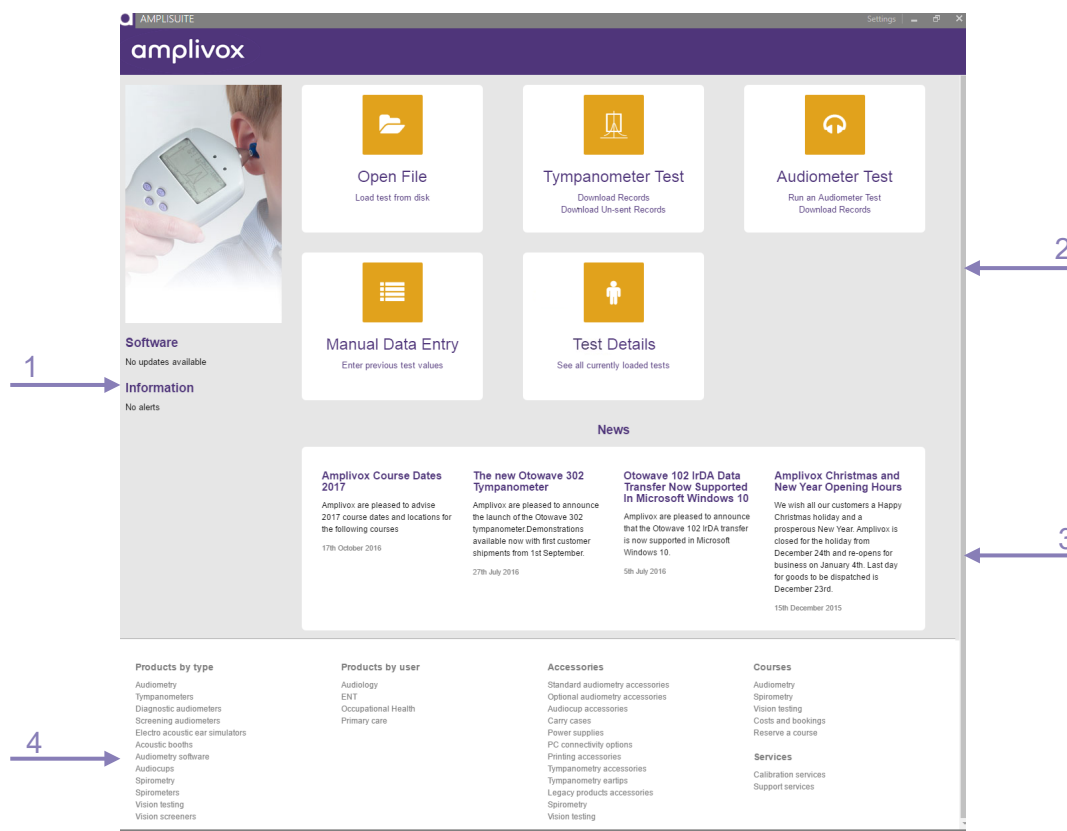
The online version of ampliSuite is still under construction and will be available shortly.

Online Functionality Launching Soon.



3.2.CONTROLS FROM THE HOME SCREEN

The ampliSuite home screen is divided into 4 areas, there is current information about your software (1), patient management and module selection (2), news from amplivox (3) and information provided from the amplivox website (4).



Use the **Open File** button to load previously transferred records from an Amplivox Otowave tympanometer. Locate the **APX** file you wish to view and select **Open**. The impedance module will open and the record will be displayed.



Use **Tympanometer Test** button to transfer records from an Amplivox Otowave 202 or 302 tympanometer.

Select **Download Records** to download all records directly from an Otowave 202 or 302 connected to the PC via a USB cable.

Select **Download Un-sent Records** to download only previously un-sent records from an Otowave 202 and/or 302 connected to the PC via a USB cable.

After the download, the impedance module will open and the record will be displayed.



Use the **Audiometer Test** functionality to either run a computerised test with an Otosure audiometer or download stored thresholds from an Amplivox 116, 170, PC850, 240, 260 or 270 audiometer.

With an Otosure audiometer connected, select **Run an Audiometer Test**.



With a supported audiometer connected, select **Download Records**. The data will transfer from the connected audiometer and be displayed in the audiometry module.



Use the **Manual Data Entry** functionality to manually input thresholds from a previous hearing test. These thresholds will then be displayed as a previous test on the latest audiogram.



Use the **Test Details** functionality to view previous tests within the same ampliSuite session and to enter basic patient details.


4. AUDIOMETRY MODULE (BETA)

4.1. GENERAL


The audiometry module allows you to review audiometrical test results and conduct tests using the Otosure. The audiometry module can be used with the following Amplivox Audiometers: 116, 170, PC850, 240, 260 and 270.

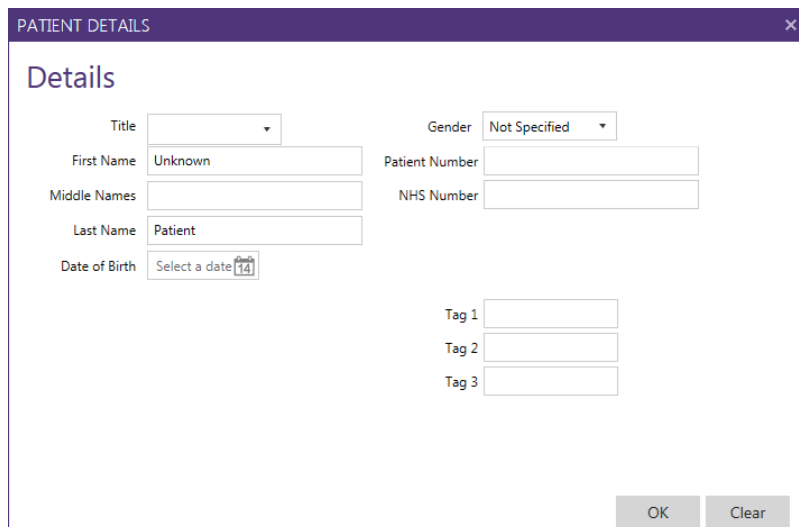
4.2. OVERALL FUNCTIONS

4.2.1. RETURN TO MAIN MENU

To return to the main menu, select the home icon on the top left corner of the screen .

4.2.2. ADD PATIENTS TEST DETAILS

To enter basic patient information, select the “Patient Details”  button. The patient details form will then be displayed. Enter the patient details and select **OK**. The details will then be displayed on the main patients details screen.



4.2.3. DOWNLOAD RESULTS FROM DEVICE



Download all

Records stored on the device are transferred to the PC.



As soon as a test is selected, the result will be shown and further details can be found in the session panel.

Several sessions can be uploaded into ampliSuite and be opened through the session panel.

4.2.4. PRINTING AND PDF STORAGE



Print Results

Selecting the print icon in the control panel will print the current reviewed test.



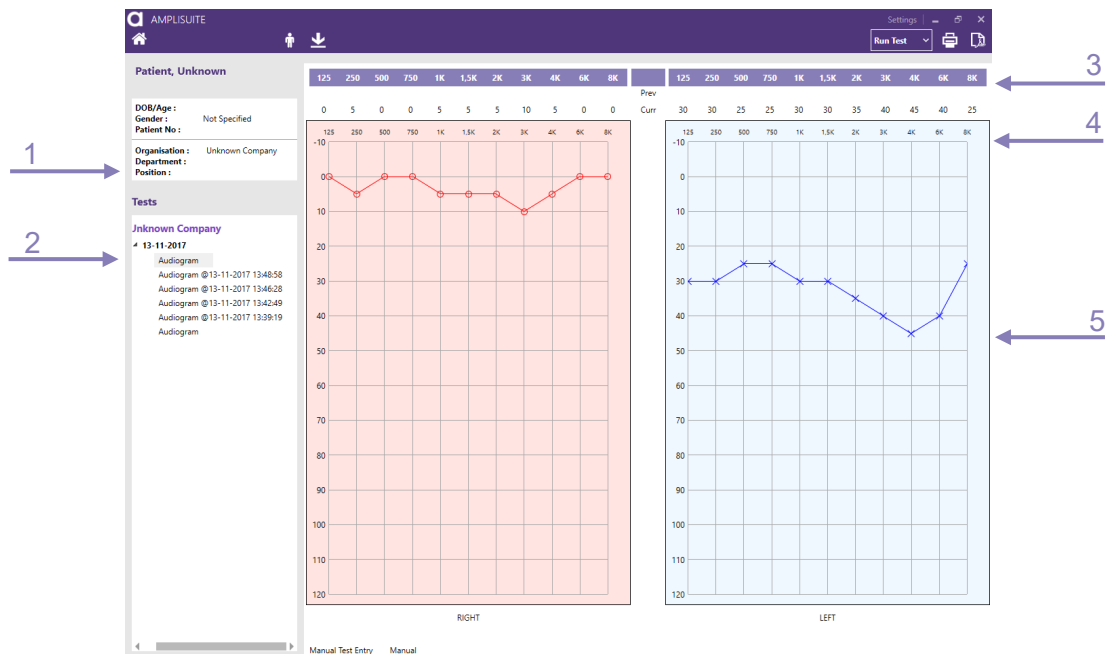
Store Result as PDF

Selecting the PDF icon in the control panel will store the current reviewed test as a PDF.

4.3. AUDIOMETRY MODULE

4.3.1. GENERAL

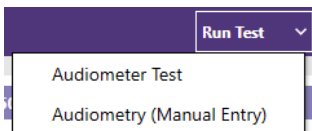
The audiometry module consists of patient information, (1) the currently uploaded session details (2), the control bar (3), audiograms for the left and right ear in table (4) and diagram format (5).



4.3.2. MANUAL DATA ENTRY



There is also the option to manually enter audiometry data. This can be done by either selecting the **Manual Data Entry** in the Main Menu or by selecting **Run Test – Audiometry (Manual Entry)** in the audiometry module.



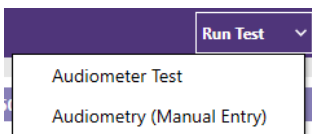
FREQUENCY	RIGHT EAR	LEFT EAR
125		
250		
500		
750		
1K		
1.5K		
2K		
3K		
4K		
6K		
8K		

When selecting the **Manual Data Entry**, a popup will appear and allow the manual entry of data into a table.

After entering the ear and frequency specific threshold, select **Ok** to submit the values or **Cancel** to discard.

After the successful entry of the data, values will be shown in the table and the audiogram.

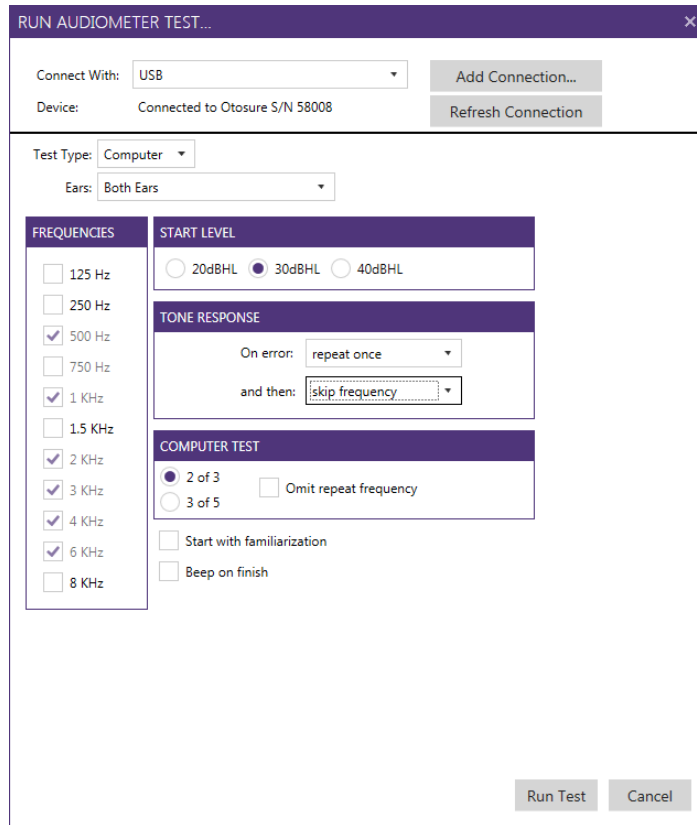
4.3.3. STARTING A TEST



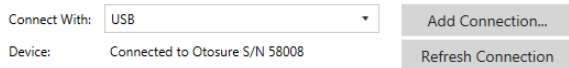
To run an automated test, select the **Audiometer Test** in the Main Menu or by selecting **Run Test – Audiometry Test** in the audiometry module.

4.3.4. (AUTO-)TEST SETTINGS

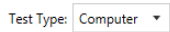
Different auto-test settings are available to conduct a customised automated audiometry test. When starting an auto-test, a popup with different test options will show.



Please note: The test options will be greyed out, if no connection to a device could be established. A message “Could not connect to device” will be shown next to **Refresh Connection**. Ensure the USB is connected correctly.



First, select the connection to the instrument, which is **USB** for the Otosure. If no connection can be established, select the **Refresh Connection** button. Below the connection button, the name of the detected instrument and its serial number will be shown.



Afterwards, select the test protocol on how the test should be conducted, by the user (**Manual**) or by the PC (**Computer**). The Computer test can include a complete audiogram (**Computer**) or just a single frequency (**Computer – Single Frequency**).



Please note: When manual test is selected, all further test options are greyed out, as they are not relevant for a manual test sequence.




Ears: Both Ears

FREQUENCIES	START LEVEL	
<input type="checkbox"/> 125 Hz	<input type="radio"/> 20dBHL <input checked="" type="radio"/> 30dBHL <input type="radio"/> 40dBHL	
<input type="checkbox"/> 250 Hz	STONE RESPONSE	
<input checked="" type="checkbox"/> 500 Hz	On error: repeat once	
<input type="checkbox"/> 750 Hz	and then: skip frequency	
<input checked="" type="checkbox"/> 1 KHz	COMPUTER TEST	
<input type="checkbox"/> 1.5 KHz	<input checked="" type="radio"/> 2 of 3 <input type="checkbox"/> Omit repeat frequency	
<input checked="" type="checkbox"/> 2 KHz	<input type="checkbox"/> Start with familiarization	
<input checked="" type="checkbox"/> 3 KHz	<input type="checkbox"/> Beep on finish	
<input checked="" type="checkbox"/> 4 KHz		
<input checked="" type="checkbox"/> 6 KHz		
<input type="checkbox"/> 8 KHz		

When conducting an auto-test, select which ear is to be tested (**Both Ears, Left Ear only, Right Ear only**).

For automated audiometry several other selections must be made:

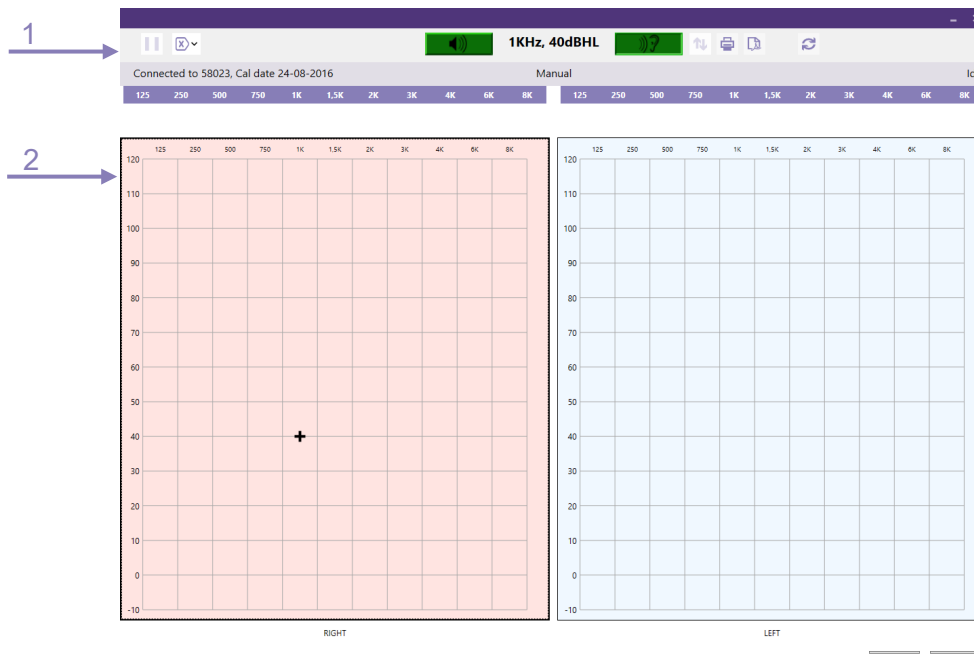
- Select which frequencies you wish to test.
 -  **Please note:** 0.5, 1, 2, 3, 4 and 6 kHz are mandatory to test and 750 Hz is not supported on the Otosure audiometer.
- Select the starting test level (20, 30 or 40 dB HL)
- Behaviour during automated audiometry after the patient responded to the tone
 - On error – select what to do if there is a patient response error (Do not repeat, Repeat once, Repeat twice, Repeat 3 times)
 - And then select to either Skip frequency or Pause test
- Select to record a threshold on either 2 of 3 responses or 3 of 5 responses
 - Option to omit a repeat at 1KHz at the end of testing on each ear
- Select if you wish to start a test with familiarisation or not.
- Select if you wish for the computer speaker to beep after a test has completed.

When you have configured your test options, select **Run Test**. The test screen will then be displayed. Select **Cancel** if you wish to abort running a test.




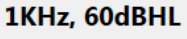





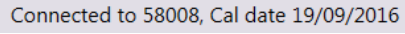


4.3.5. AUDIOMETRY TEST SCREEN

The audiometry test screen consists of a tool bar controlling the test sequence (1) and the audiograms for the left and right ear in table form (2).



On the test screen, the following functions are available:

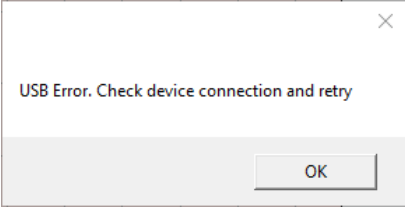
-  Select to pause the current test.
-  Option to clear a test in either both ears, left ear or right ear.
-  Illuminates when a tone is being presented.
-  **1KHz, 60dBHL**
Displays the current frequency and dBHL level that is being presented.
-  Illuminates when the patient response button is pressed.
-  Toggles between showing test detail and the audiogram thresholds
-  Prints out the audiogram
-  Saves the audiogram to pdf
-  Re-runs a test
-  Connected to 58008, Cal date 19/09/2016
Serial number and calibration date of connected audiometer displayed.



4.4. TROUBLESHOOTING AUDIOMETRY



Please note: Refer to the installation & operating instructions provided with your instrument(s) for details of the data transfer operation and errors that could possibly occur. If a fault cannot be fixed, the operator is cautioned against repeatedly restarting the instrument.

PROBLEM	CAUSE	SOLUTION(S)
Instrument doesn't connect. 	<ul style="list-style-type: none"> • Device is not switched on • USB connection unstable 	<ul style="list-style-type: none"> • Switch on /Restart device • Check USB connection in both instrument and PC • Ensure cable is in good working order
No data is transferred to PC.	<ul style="list-style-type: none"> • Specified location to store data is different than expected. • Specified location to store data is not existing. • LoadIt.exe is stored in a different location. 	<ul style="list-style-type: none"> • Review the storing location in the settings. • Store LoadIt.exe in same folder as ampliSuite.exe.

5. ADMITTANCE MODULE

5.1. GENERAL


The admittance module allows you to review tympanometric (**Tymp**) and acoustic reflex test (**ART**) results. The admittance module can be used with all Otowaves 102, 202 and 302.




Video available on how to use the admittance module.

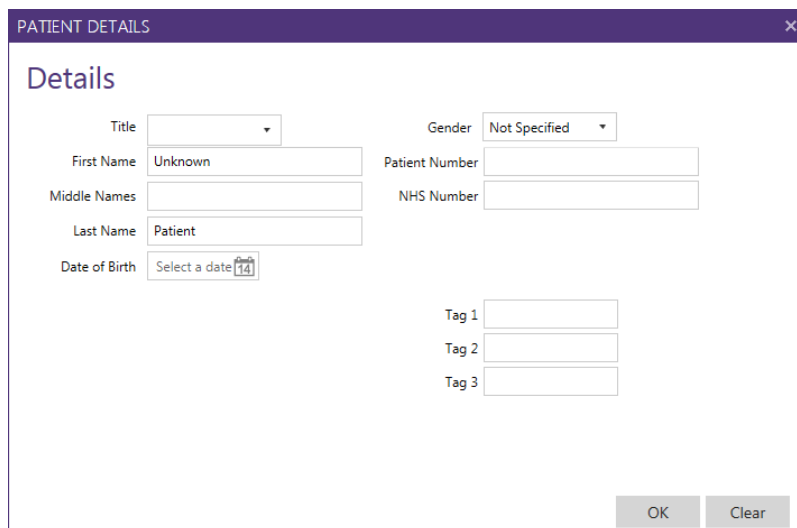
5.2. OVERALL FUNCTIONS

5.2.1. RETURN TO MAIN MENU

To return to the main menu, select the home icon in the top left corner of the screen .

5.2.2. ADD PATIENTS TEST DETAILS

To enter basic patient details, select the “Patient Details”  button. The patient details form will then be displayed. Enter the patient details and select **OK**. The details will then be displayed on the main patients details screen.



PATIENT DETAILS

Details

Title

Gender

First Name Patient Number

Middle Names NHS Number

Last Name

Date of Birth

Tag 1

Tag 2

Tag 3

5.2.3. OPEN TEST RESULT(S) FROM PC



Open from file

To review any test results which have been **DOWNLOADED** from an Otowave, select the **OPEN** icon in the control bar of ampliSuite.

Only one test at a time can be opened and imported into ampliSuite.



As soon as a test is selected, the result will be shown and further details can be found in the session panel. Several sessions can be uploaded into ampliSuite and opened through the session panel.

5.2.4. DOWNLOAD RESULTS FROM DEVICE



Download all

All records stored on the device are transferred to the PC.



Download un-sent

Records stored on the device, which have not been sent yet, are transferred to the PC.



Please note: The option 'Download un-sent records from Tympanometer' is only supported on the Otowave 202 running on a firmware version 43 and above.



Please note: Test results downloaded must be imported into ampliSuite manually by using the open function.

There are some slight differences in the download function using the Otowave 102 than either the Otowave 202 or 302.

	102	202 and 302
Transferal	Infrared	USB
Special attention	If you can't find the Otowave 102 results after you've transferred them look in Control Panel > Infrared for the location that files will be transferred to (under "Save received files here"). Note also that this location will be retained until changed.	Before attempting to download test results ensure that the ampliSuite software & USB Device Drivers have been correctly installed.





Please note: Refer to the operating manual of your Otowave for further guidance and troubleshooting advice regarding the connections.

When downloading files from the 202 or 302 unit, these files are automatically placed in the location specified in ampliSuite. The default location is the 'User Profile' within Windows. Typically this will be "C:\Users\", where <user name> is the name of the user account currently logged into Windows. This can be changed to any location you wish by setting the radio button to 'Specify Location', specifying a location of your choice and pressing 'OK'.



Please note: If the specified folder does not exist, the transfer will not take place, though the transfer screen will appear to be normal. Ensure the specified location exists.

When downloading results from the 102 unit, a new folder containing the files will be created on the Desktop. Each patient test is stored on the PC as a separate file within the "Amplivox" folder. If the Amplivox folder already exists on the PC subsequent transfer sessions automatically create new folders called "Copy 1 of Amplivox", "Copy 2 of Amplivox" etc. To avoid excessive duplication of these folders, move the transferred files to a preferred location on the PC and then delete the "Amplivox" folder. Files have the extension ".APX" and they follow a specific naming convention:

- nnn_DDMMYYYY_HHMM.APX² (when the default date format is used on the Otowave 102)
- nnn_MMDDYYYY_HHMM.APX (if the date format was changed to "MM/DD/YY" on the Otowave 102 – see the product operating manual)



Please note: Sometimes it might be necessary to attempt to download the files a second or third time; this is due to limitations in the software supplied with Windows being unable to initiate communication properly with the Otowave 102.

5.2.5. PRINTING AND PDF STORAGE



Print Results

Selecting the print icon in the control panel will print the current previewed test.

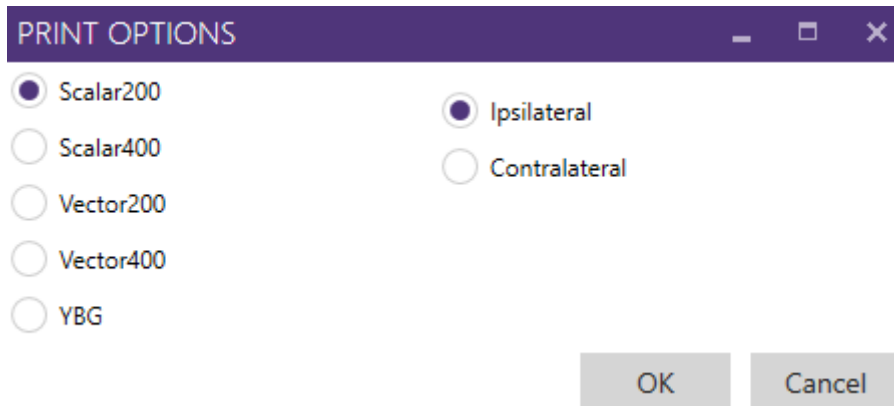


Store Result as PDF

Selecting the PDF icon in the control panel will store the current previewed test as a PDF.

² nnn is either the initials entered when the test was saved in the database on the Otowave 102, or 'xxx' (lower case) if none have been entered yet (e.g. if it is the "Last Test" – see the Otowave 102 operating manual). DDMMYYYY (or MMDDYYYY) is the date of the test. HHMM is the time of the test

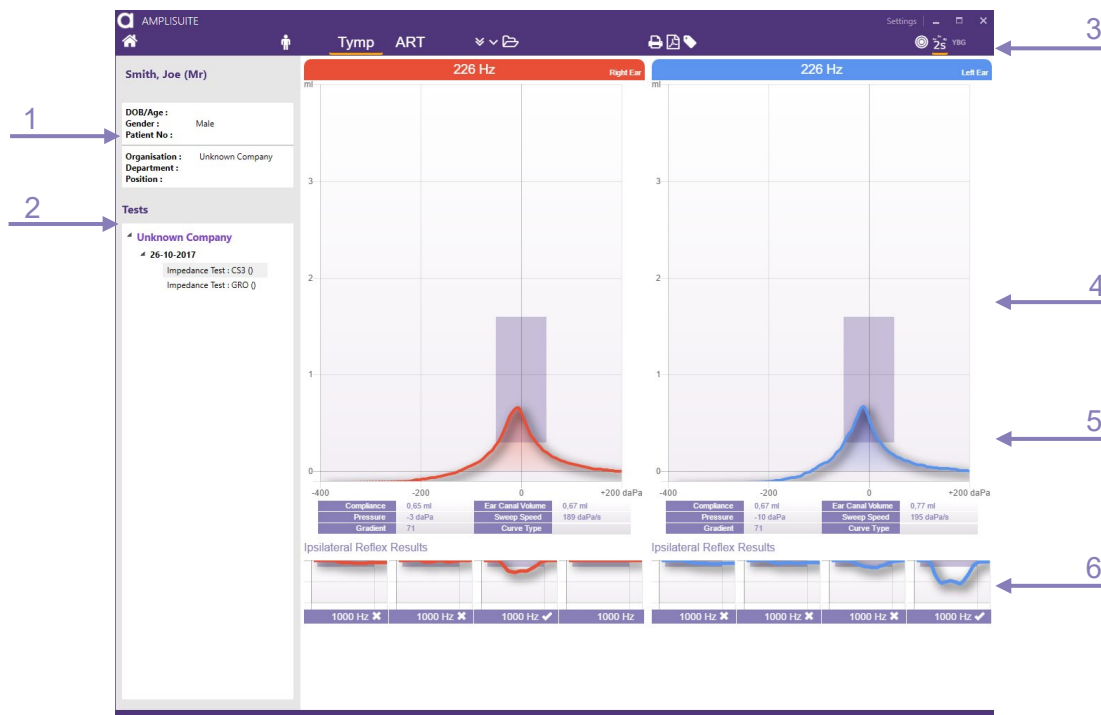
In both cases, when the print or the PDF button is pressed, a popup will show with print/PDF options. From here, you can select what baseline mode shall be shown and if either ipsilateral or contralateral reflexes will be included on the print out.



5.3.TYMPANOMETRY MODULE

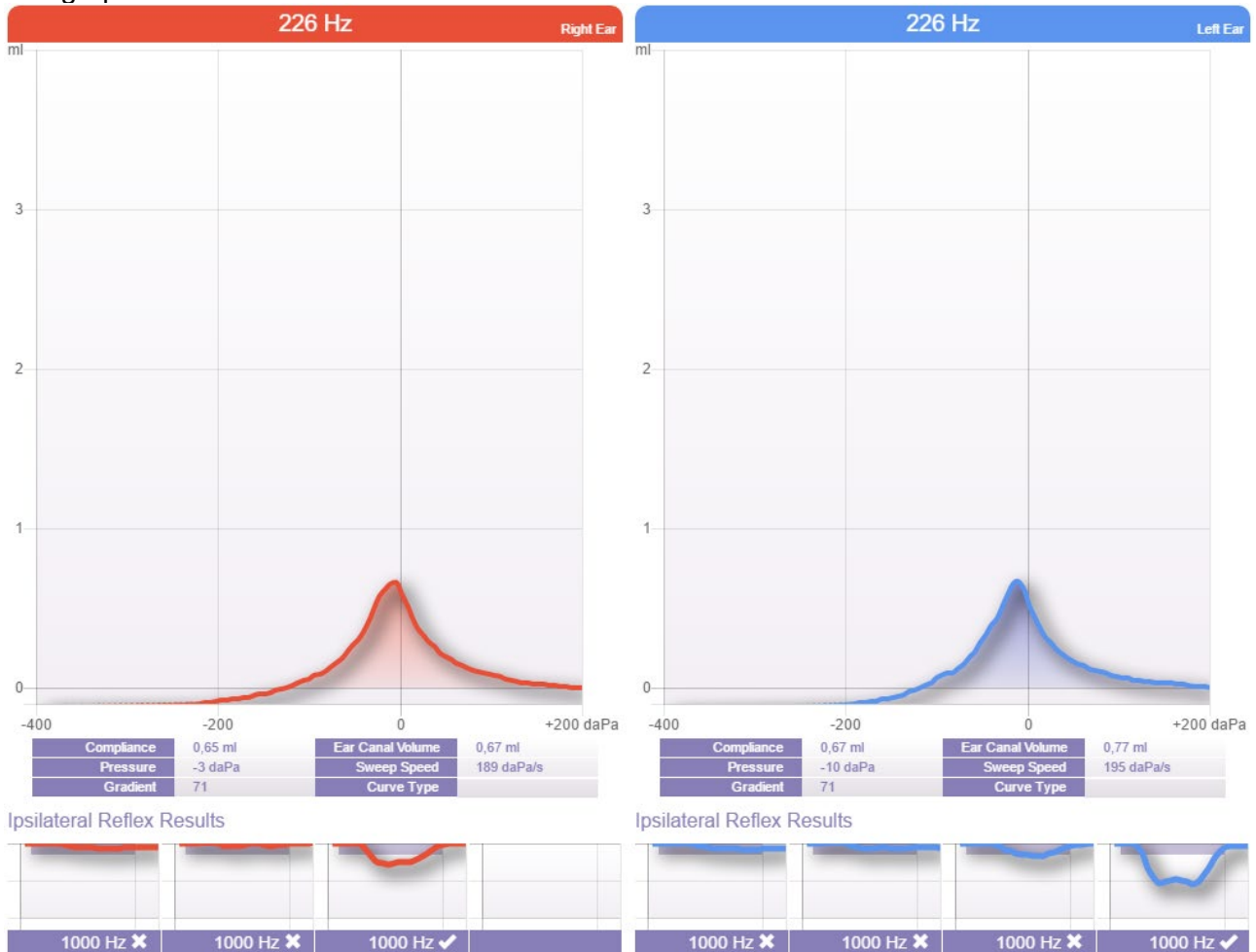
5.3.1. GENERAL

The tympanometry module consists of patient information, (1) the current uploaded session details (2), the control bar (3), tympanograms for the left and right ear (4), test parameters for tympanometry (5) and the preview of ipsi and contralateral test results if available (6).



5.3.2. TYMPANOMETRIC TEST RESULTS

The graphs are similar to those shown on the Otowaves.



In the tymp graphs, the option is given to show a normative box. This area is intended to help identify normal tymp curves, according to default or customised specifications. In the case that the peak of the curve falls into the normative area, the tymp is marked with a ✓ to identify a normal shaped curve.



Please note: Depending on the version of your Otowave, a normative box based on the BSA standards will be transferred with the test result to the PC. If you prefer to define your own normative boxes, please refer to chapter 5.5.

Below the tympanograms, the test parameter for the tymp curve shown are listed:

- **Compliance:** Peak of tympanogram in ml (226 Hz) or m \bar{U} /mmho (1 kHz), representing the maximum compliance/admittance of the middle ear system³
- **Pressure:** Equivalent pressure point describing the compliance peak.

³ The maximum compliance occurs when the pressure in the middle ear cavity is equal to the pressure in the external auditory canal.

- **Gradient:** Width of tympanogram at 50 % height
- **Ear Canal Volume:** Equivalent volume of the ear canal in ml
- **Sweep Speed:** Actual average sweep speed of the pump during the measurement
- **Curve Type:** Option to classify the tympanogram pattern based on the Jerger system (1970)⁴. Refer to chapter 5.3.3 for more detailed information on how to assign the classification



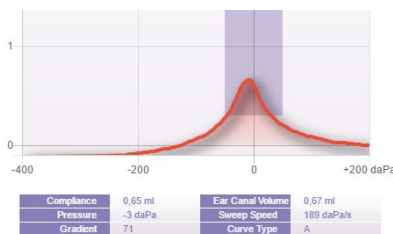
Please note: The compliance and pressure value as well as the gradient are dependent on the position of the cursor in the Otowave unit before data transfer. When using the cursor function in the Otowave, re-defining the peak value of the tymp curve, the value for compliance, pressure and gradient are adjusted accordingly.

A small preview of ipsi and contralateral reflexes are shown below the test parameter. A review in more detail can be found in the ART module (refer to chapter 5.4). The reflexes are shown for all frequencies tested. When marked with a ✓, a reflex trace was detected, which was regarded as a valid reflex response by the Otowave. When marked with a x, a reflex trace was detected, but this was not regarded as a valid reflex response by the Otowave.

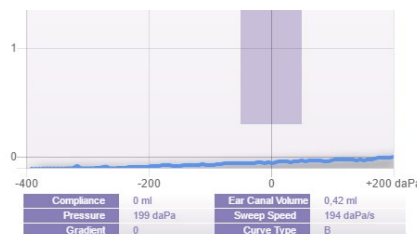


5.3.3. ASSIGN CURVE TYPE (JERGER)

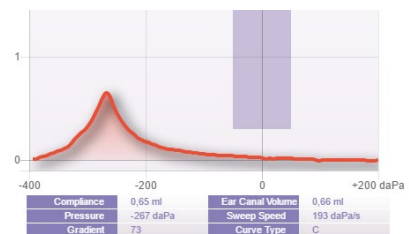
ampliSuite offers you the function to classify the tymp curves after the Jerger system. There are three main types of tympanograms according to Jerger, specified by the letters A, B, and C, as shown in the figure below.



Type A
Normal




Type B
Middle ear pathology, such as fluid or infection behind the ear drum, hole in ear drum

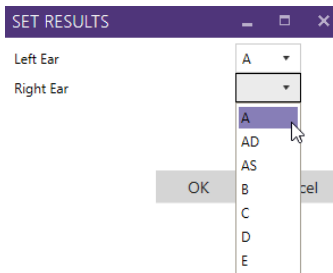


Type C
Negative pressure in middle ear volume

The ampliSuite software will in addition allow you further classification such as AD and AS, as well as D and E.

⁴ J Jerger (1970). Clinical experience with impedance audiometry. Archives of Otolaryngology, 92 (4), 311-324.

Selecting the tag icon  in the control panel will open a pop-up. From here, the categorisation for each ear takes place. Select the drop down to choose between the different tympanometry types.



5.3.4. DISPLAY OF TEST DATA

 **Zoom in and out**

Use the zoom function to change the scaling of the y-axis for further graph review (zoom out , zoom in ).

 **Scalar and vector mode**

Changing the baseline mode from 2 and 4 scalar (226 Hz and 1000 Hz) or 2 and 4 vector (only 1000 Hz).

 **YBG curve**

Show YBG graph (only available for 1000 Hz tests)

5.4.ACOUSTIC REFLEX MODULE (ART)

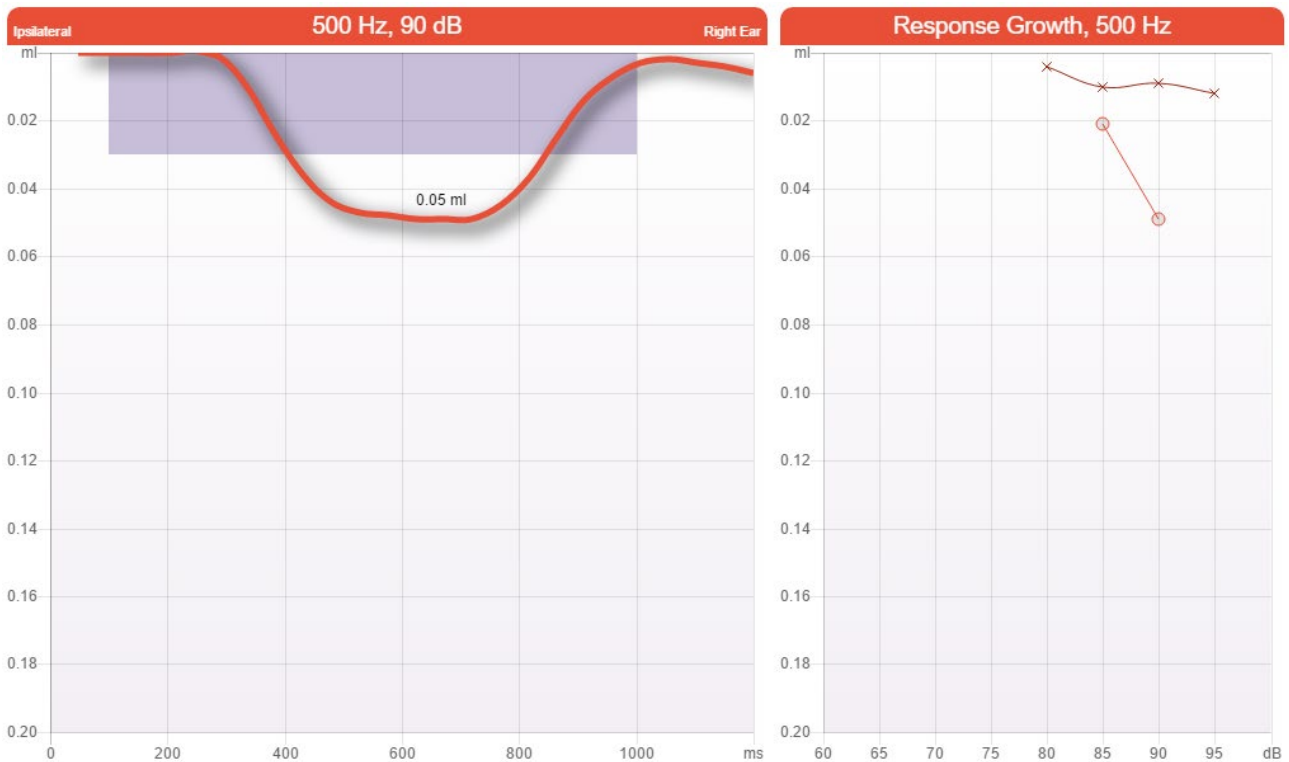
5.4.1. GENERAL

The acoustic reflex (ART) module consists of patient information, **(1)** the currently uploaded session details **(2)**, the control bar **(3)**, a reflex growth diagram for the current selected ear **(4)**, reflex diagram **(5)** based on the selected reflex graph **(7)** and all available ipsi and contralateral reflex results **(6 and 8)**.

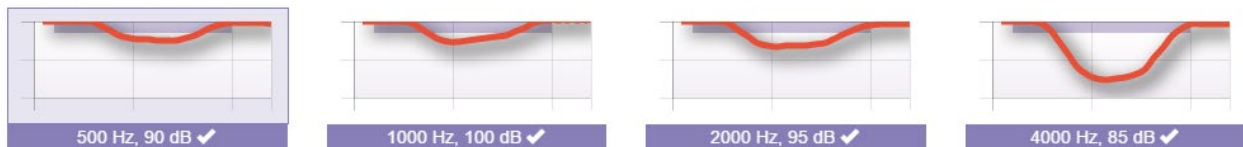


5.4.2. ACOUSTIC REFLEX TEST RESULTS

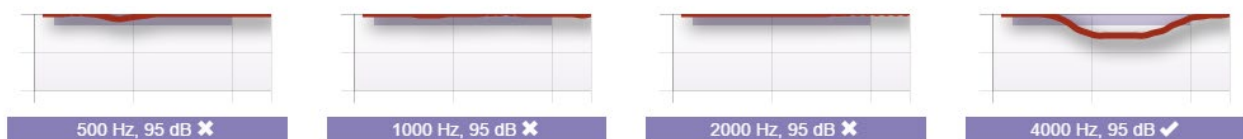
The graphs are similar to those shown on the Otowaves.



Ipsilateral Reflex Results



Contralateral Reflex Results



Right ear selected



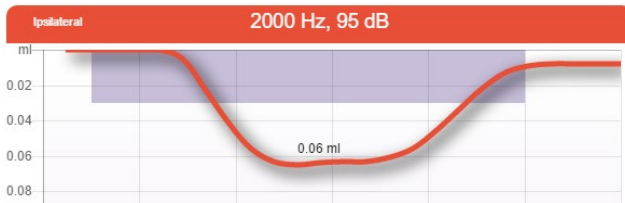
Left ear selected

One ear side will be shown at a time and can be changed using the ear side icons in the control panel. The current selected ear will be highlighted with an orange line below.

To review a single graph in the detail view, select the specific reflex from the ipsilateral or contralateral results. The current selection will be highlighted with a purple frame.

When marked with a ✓, a reflex trace was detected, which was regarded as a valid reflex response by the Otowave. When marked with a x, a reflex trace was detected, but this was not regarded as a valid reflex response by the Otowave. The criteria to reach a pass can be shown visually in each of the graphs.





The criteria is shown in the form of a purple box, in the reflex graph.

The height of the box is depending on the threshold criteria defined in your instrument. The length of the box is given by the time the test signal is presented.

If the amplitude of the reflex reaches the height of the box as well as the contraction time meets the presentation time of the test stimulus, among other criteria, the reflex is considered a pass.



Please note: The box shown is depending on the version of your Otowave.

The reflex growth diagram⁵ is shown for the current selected frequency. The ipsilateral plot is with an o for the right ear and a x for the left ear, whereas the contralateral side is marked with the opposite sign. The definition of contralateral is according to Katz, 2002⁵.



The acoustic reflex magnitude increases as the stimulus level increases. The peak magnitude of the reflex is plotted for each level tested, resulting in a reflex growth function.

The normal acoustic reflex growth function for puretone stimuli shows that reflex magnitude increases linearly with the stimulus level⁶.

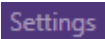
This graph helps you quickly identifying the amplitude growth for the selected frequency.

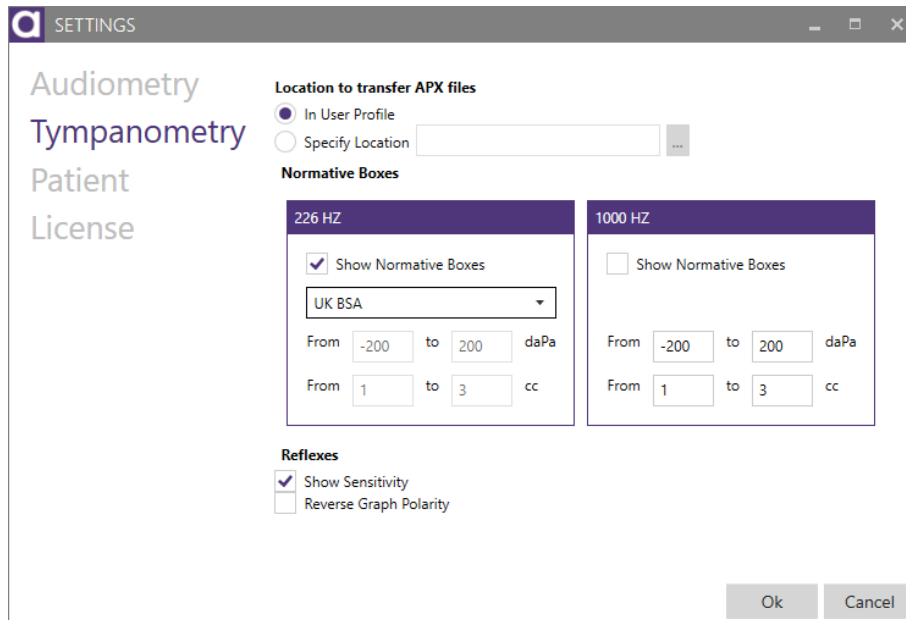
⁵ BH Sprague, TL Wiley, MG Black (1981). Dynamics of Acoustic Reflex Growth. *Audiology* 20: 15-40(1981)

GB Michael, LW Terry (1979). Acoustic-Reflex Growth and Loudness. *JSLHR* June, 1979

⁶ J Katz. *Handbook of Clinical Audiology – Fifth Edition*. Lippincott Williams & Wilkins, 2002

5.5. ADMITTANCE SETTINGS

Selecting the settings button  at the top of ampliSuite, will open a pop-up with all available settings for the tympanometry and acoustic reflex modules.



5.5.1. STORAGE LOCATION

When tests are downloaded to the PC, they are automatically placed in the location specified in ampliSuite. The default location is the 'User Profile' within Windows, which is "C:\Users\", where <user name> is the name of the user account currently logged into Windows.

This can be changed to any location you wish by setting the radio button to 'Specify Location'. It is then required that you specify a location of your choice.

5.5.2. NORMATIVE BOXES TYMPANOMETRY

If desired, normative boxes can be shown in the tympanograms. This function is enabled by selecting the checkbox. There are 2 default normative boxes for 226 Hz, based on the recommendation of the BSA⁷ (UK) or the ASHA⁸ (US).

⁷ British Society of Audiology. Recommended Procedure Tympanometry. 2013

⁸ ASHA, Committee on Audiometric Evaluation. Guidelines for Audiometry Symbols. 1990

	BSA (UK)	ASHA (US)
Volume	0.3 to 1.6 cc	0.3 to 1.4 cc
Pressure	-50 to + 50 daPa	-150 to 50 daPa

If it is preferred to use user-specific normative areas, the **CUSTOM RANGE** option shall be selected to define your own customised box.

5.5.3. REFLEXES

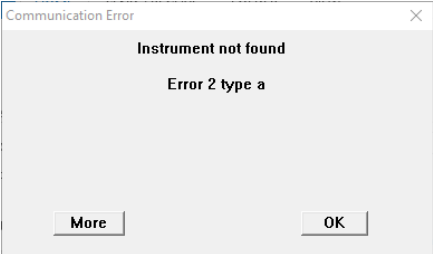
When **Show Sensitivity** is selected, the threshold line defined in the settings of your admittance meter (between 0.01ml and 0.5ml) will be shown in the reflex graph.

When **Reverse Graph Polarity** is selected, the reflex graphs are plotted downwards.

5.6. TROUBLESHOOTING ADMITTANCE

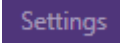


Please note: Refer to the installation & operating instructions provided with your instrument(s) for details of the data transfer operation and errors that may occur. If a fault condition cannot be cleared, the operator is cautioned against repeatedly starting the instrument.

PROBLEM	CAUSE	SOLUTION(S)
Instrument doesn't connect. 	<ul style="list-style-type: none"> • Device is not switched on • USB connection unstable 	<ul style="list-style-type: none"> • Switch on /Restart device • Check USB connection in both instrument and PC • Ensure cable is in good working order
No data is transferred to PC.	<ul style="list-style-type: none"> • Specified location to store data is different than expected. • Specified location to store data is not existing. • LoadIt.exe is stored in a different location. 	<ul style="list-style-type: none"> • Review the storing location in the settings. • Store LoadIt.exe in same folder as ampliSuite.exe.

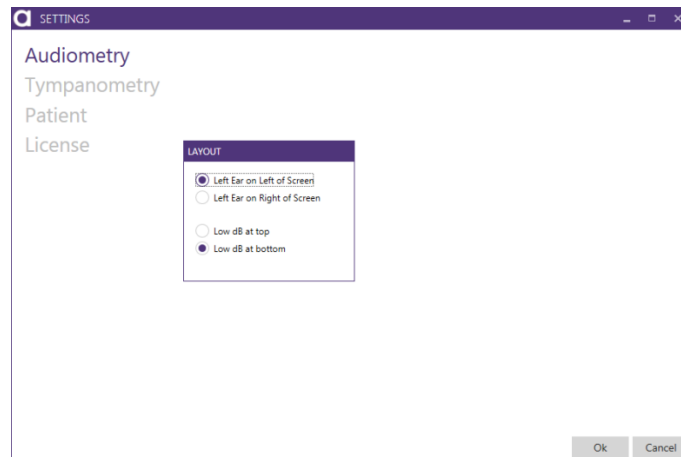
5.7.SETTINGS

5.7.1. GENERAL



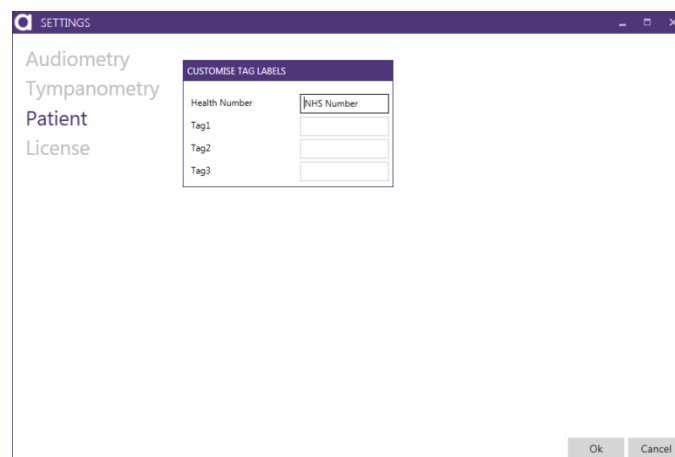
There are a number of configuration settings available in ampliSuite. To access these select “Settings” in the top right-hand corner of ampliSuite. A popup will appear to allow you to change different settings.

5.7.2. AUDIOMETRY SETTINGS



Audiometry settings are displayed first by default. On here, you can change the audiogram layout to configure which ear is displayed on which side of the screen and also which way up you wish to display the audiograms.

5.7.3. PATIENT SETTINGS

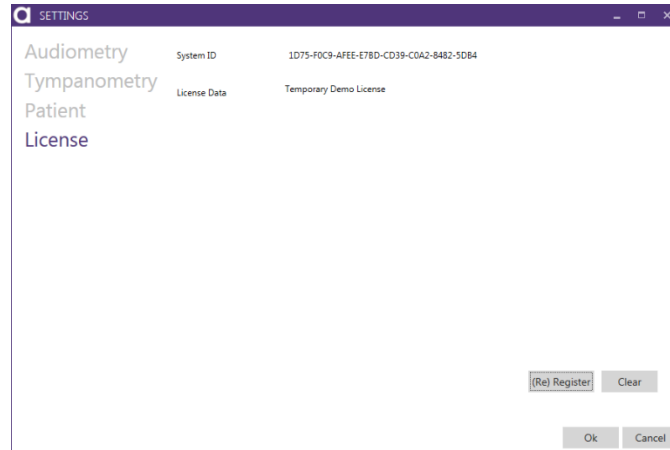


The patient settings allow you to enter alternative labels for Health Number, Tag1, Tag2 and Tag3. The new labels you enter here will then be displayed in patient details in ampliSuite.



5.7.4. LICENSE SETTINGS

Under License, you find information about the System ID, the license data and the version of ampliSuite.



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