ARC System 3

Acoustic Room Correction System

USER MANUAL

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This Agreement contains the complete agreement between the parties with respect to the subject matter hereof, and supersedes all prior or contemporaneous agreements or understandings, whether oral or written.

If any stipulations of this EULA become invalid, completely or in part, this not affect the validity of the remaining stipulations.

All questions concerning this Agreement shall be directed to:

IK Multimedia Production Srl
Via dell'Industria 46
41122 Modena
Italy

What's New in ARC System 3

New Analysis Application

- New graphics and user interface.
- Simpler and faster step-by-step guided analysis process
- New 3D room analysis technology based on IK's new volumetric technology for the best sonic performance of the corrected system
- Works also with any measurement microphone compatible with standard mic calibration files

New Correction Plug-in

- New graphics with resizable user interface
- New processing engine for greater sonic transparency
- Lo and Hi adjustable correction ranges to maintain the speakers' sonic signature
- Variable resolution / smoothing to match all rooms even better
- Natural and Linear phase modes for best L-R phase coherency of the monitoring system
- Real-time audio analyzer shows relation between monitoring performance and the incoming program
- High-precision multi-standard level meter

Chapter 1 – ARC System 3 Overview

1.1 – Introduction

Whether you're working in a home studio, on the road, or in an unfamiliar space, room acoustics can make the difference between a great mix or a rough one and an easy workflow or a painful one.

In an untreated room, what you hear while working is influenced by its acoustic interaction with your speakers. From levels and panning to EQ and compression, all the careful decisions you make won't translate properly to the outside world. No matter how good and expensive your studio monitors are, the room will always have an effect on their performance. If the room sounds bad, the monitors will sound bad, and this will force you to into the typical sequence of going back and forth to fix the mix in small steps by checking it out on other playback systems like listening in the car and so on. But for many musicians, traditional room treatment is too expensive, too time-consuming or too permanent to be an effective solution.

In 2007, IK Multimedia came to the rescue with our pioneering room correction solution, the ARC System.

The ARC System 3 raises the bar, maintaining the convenience and simplicity of the original, but with an all-new correction algorithm for unbelievably natural, musical results. Now you can enjoy a pristine, accurate and unprocessed listening environment anywhere.

ARC System 3 allows you to effectively address most of the bad issues where the room is compromising your monitoring environment.

This results in the immediate ability to mix better and in a fraction of the time in your existing room.

1.2 – What is the ARC System 3?

The Advanced Room Correction (ARC) System 3 includes 3 components:

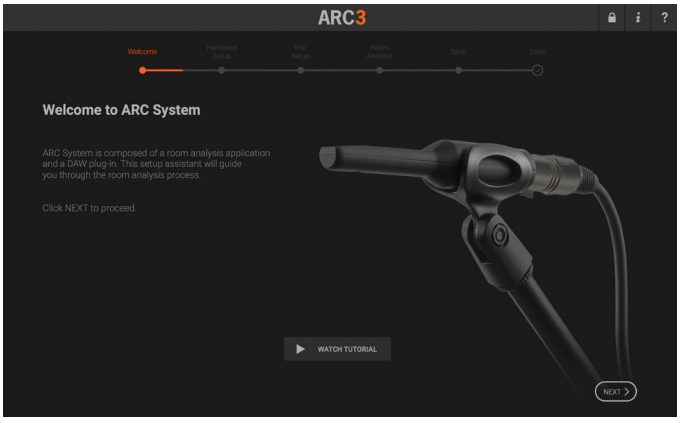
ARC 3 MEMS Measurement Microphone (or any other measurement mic)

ARC 3 Analysis Application

ARC 3 Plug-In

The ARC System 3 is a combination of a professional calibrated measurement microphone;

An analysis application, and a multi-platform plug-in.



ARC System's MEMS microphone is calibrated and optimized to work with the software with a plus/minus 0.5 dB tolerance, allowing the system to work at its highest precision. However, ARC 3 will also accept profiles for other popular room analysis microphones if you already own one.

The Analysis application guides the user through the analysis of the room acoustics, effectively turning a complex process that would require a skilled acoustical engineer into something very easy than anybody can perform in minutes.

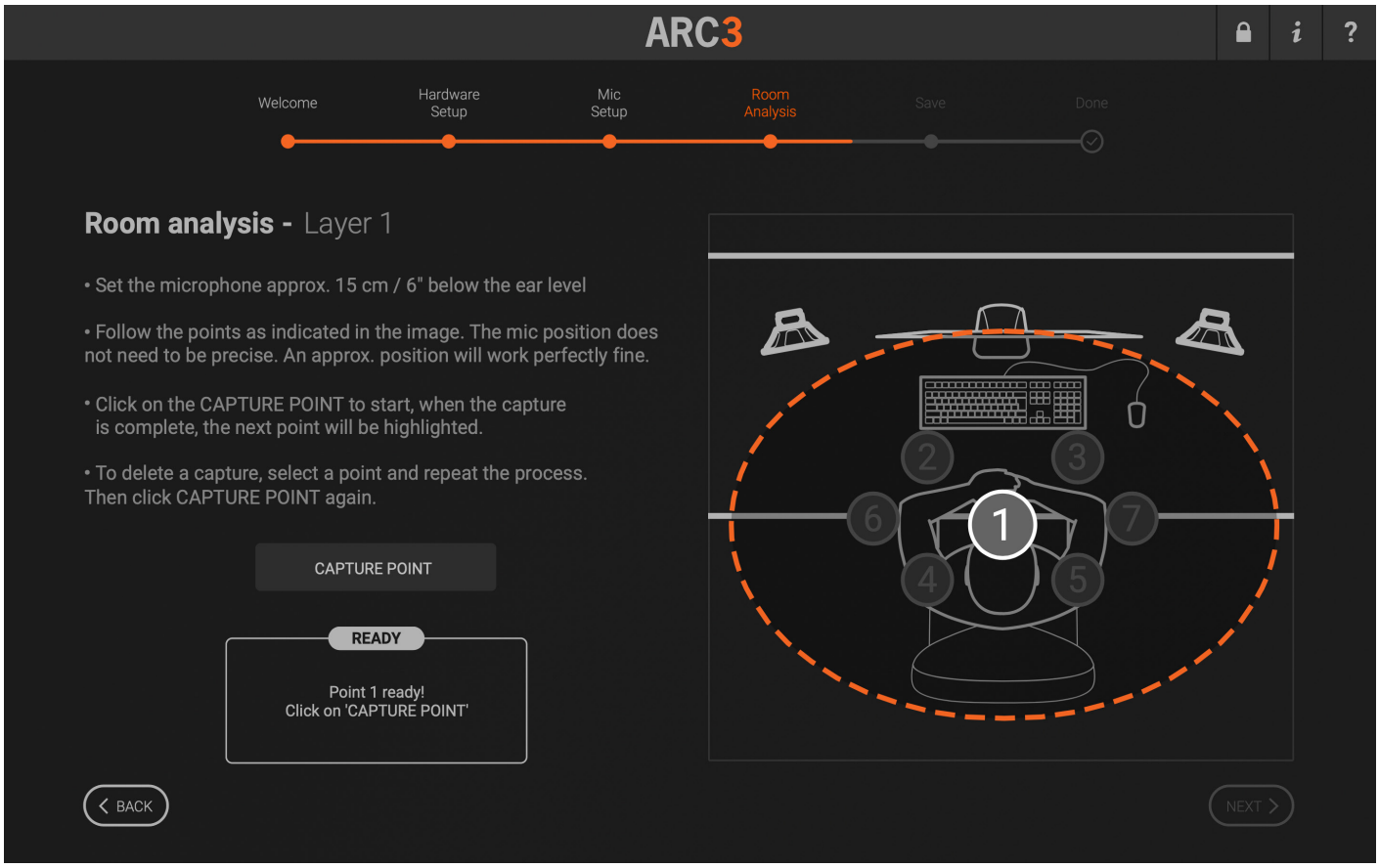
Once the analysis is completed, the software generates a correction profile that will be later applied by the plug-in when instantiated on the user's DAW main output.

The correction can be personalized with several options in order to best fit different usages and various types of rooms along with the user's preferences.

1.3 – How does the ARC System 3 work?

1) The first step is to analyze your room.

To capture your room acoustics, connect the ARC 3 MEMS Measurement Microphone (or any other measurement mic you already own) to any +48V phantom powered mic input in your audio interface, and launch the ARC 3 Analysis application from your Mac or PC computer.



The ARC 3 Analysis application will guide you through the easy steps to properly set up the microphone and analyze your room. ARC System 3 not only allows you to analyze and correct the sweet spot (usually where the mixing engineer is seated), but it also lets you correct multiple positions in the room to ensure the most accurate representation of its acoustical problems in the overall space.

In fact, the ARC System 3 will analyze all your studio zones in three different layers. Then it will provide a correction curve that effectively works for all of the zones at the same time. Once the capture sets have been taken, the ARC 3 Analysis application will save its results as a file that describes the room acoustics and its relative correction. If you have various speaker configurations, just repeat the process by taking multiple capture sets and saving them in different files. The overall capture process will take only a few minutes, but the ARC System 3 will give you a timeless solution.

2) The second step is to apply the correction as a plug-in in your preferred DAW.

Open your DAW (such as Pro Tools®, Cubase®, Logic®, Cakewalk®, Live™, Presonus Studio One®, Image Line Fruity Loops® , Digital Performer™, etc.), and insert the ARC 3 Plug-In on the stereo master bus. Load the analysis file you just saved from the ARC 3 Analysis Application, turn the correction on, and voilà, the alterations introduced by your room acoustics will be corrected. This will allow you to finally trust the sound of your studio monitors and room.

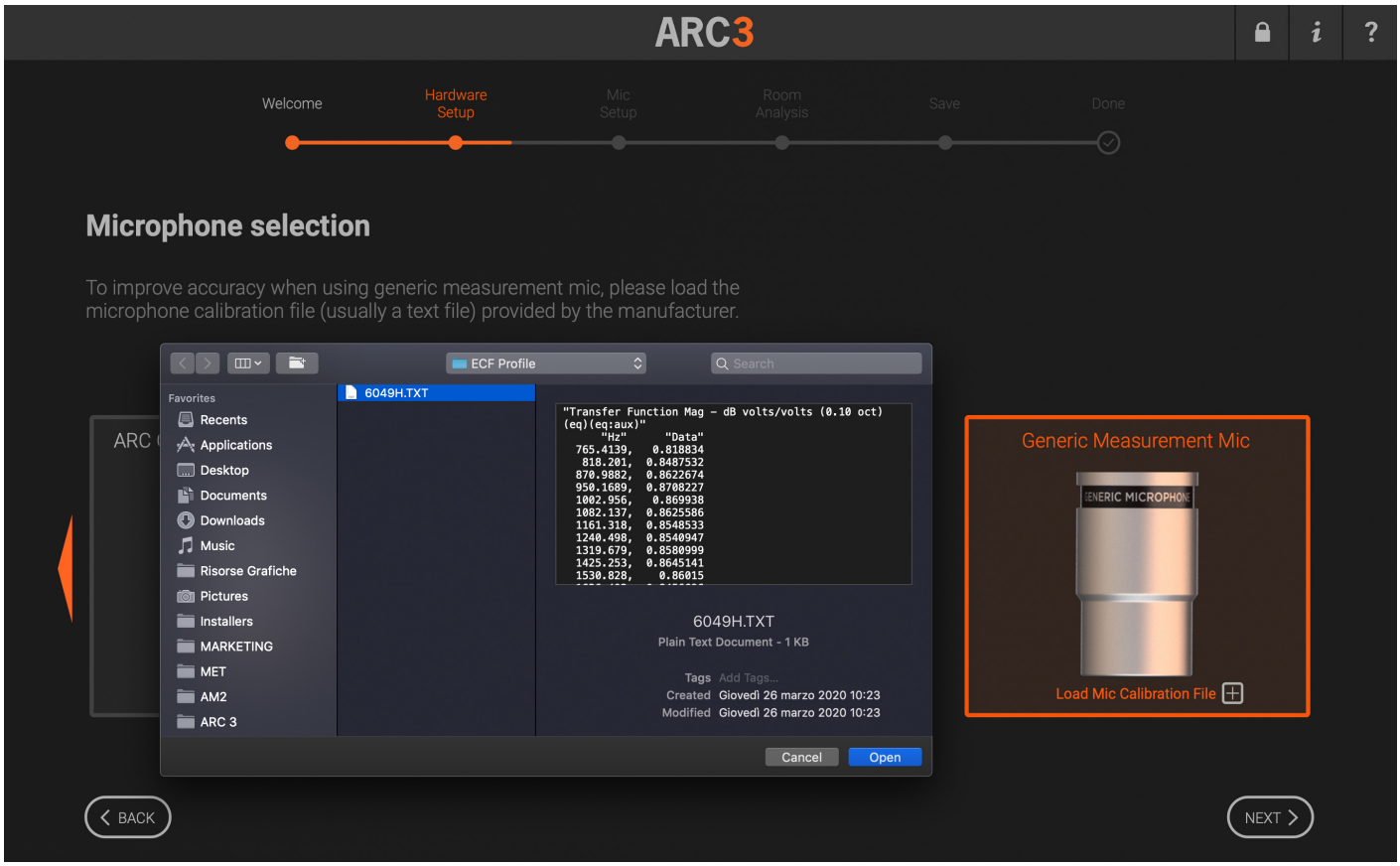
This particular screenshot of the ARC 3 Plug-In shows how a highly distorted monitoring system is flattened almost perfectly when correction is applied.

Orange (with 2 different gradients for Left and Right channels) shows the actual room response, grey shows the flat response of an ideal speakers/room system, and green (with 2 different gradients for Left and Right channels) shows the corrected room response applied by the ARC 3 system.

Chapter 2 – The ARC System 3 Components

2.1 – The ARC 3 measurement microphones

The ARC System 3 allows you to use your preferred measurement microphone. During the walk-through in the Analysis application, you will be asked to choose which measurement mic you will use for the capture process, from the older IK Condenser Mics or the MEMS ARC Measurement Mic (best option for most accurate results) to any generic measurement microphone you already own. When selecting a generic measurement mic, to improve the accuracy, you can choose to load the microphone calibration file (usually a text file) provided by the manufacturer.



The ARC 3 MEMS Measurement Microphone exhibits a flat frequency response, and at the same time, its sensitivity, noise level and max SPL are extremely good. This means that you will be able to use this mic not only to measure your room but also to record various acoustic sources.

In addition, this microphone is omni-directional. This makes the proximity effect found in typical studio cardioid microphones disappear with the mic sounding very open and natural. This aspect makes it even more useful when you consider that in entry-level studios, omni-directional microphones are usually not available.

Technical Specifications:

Type: 1e: high performance MEMS element

Polar pattern: omnidirectional, free field.

Capsule frequency response: 20-20,000 Hz.

Sensitivity: -38 dBv/Pa (1kHz, 94dB SPL)

Signal to Noise Ratio: 65 dB(

Max SPL: : 124 dB SPL (10% THD)

2.2 – The ARC 3 Analysis application

The ARC 3 Analysis application is a standalone application that analyzes your speakers and room system and automatically calculates the best possible correction that will be applied later by the ARC 3 Plug-In.

The ARC 3 Analysis application works by sending test tones (usually named as “chirps”) to your speakers and at the same time recording the signal captured in the room by the ARC 3 Measurement Microphone.

2.3 – The ARC 3 Correction Plug-In

This multi-platform plug-in is the ARC System 3 component that will apply the correction curve measured by the ARC 3 Analysis application to the monitoring system.

The ARC 3 Plug-In should be inserted on your DAW’s stereo master bus or, when possible, on the monitoring bus.

Chapter 3 – Setup for Analysis

3.1 – What you need to analyze your room

To correctly analyze your room, you need:

The ARC 3 Analysis application properly installed. This is included in the ARC System 3 installer and works as a standalone application.

A high-quality audio interface with at least one XLR microphone input with +48V phantom power.

The ARC 3 MEMS Measurement Microphone or any other measurement microphone.

Microphone stand and XLR microphone cable.

3.1.1 – Audio Interface Requirements

To correctly analyze your room, you need a high-quality audio interface that can operate at 48 kHz.

The ARC 3 Analysis application only supports ASIO drivers on Windows and CoreAudio drivers on macOS. Please check that your audio interface supports these standard drivers.

IMPORTANT NOTE: Considering that the analysis process must be done at 48 kHz, the ARC 3 Analysis application must set your audio interface sampling rate at 48 kHz. For this reason, please check that your audio interface sampling rate is not locked and that 48 kHz is supported and allowed.

The ARC 3 Analysis will set the sampling rate to 48 kHz as soon you select your audio interface. If the audio interface cannot be set to 48 kHz, an alert message will inform you that the room analysis cannot be taken.

3.2 – How to set up for analysis

To properly capture your room analysis, you need to connect your measurement microphone to your audio interface and your audio interface to the speakers. Usually you will already have the speakers properly connected, so you do not need to change anything on the speaker connections at all. What is important is having a pair of outputs of from audio interface going to the speakers with as direct a path as possible.

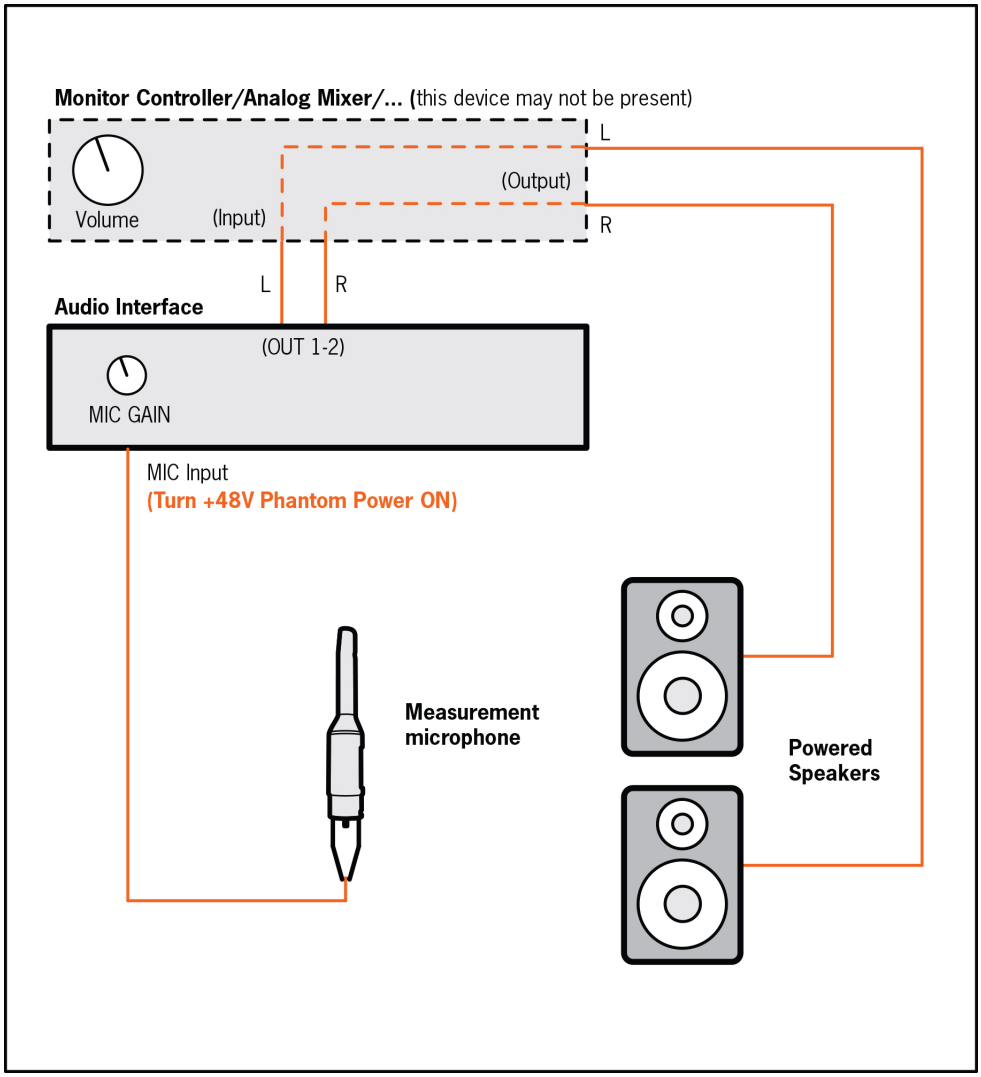
3.2.1 – Speaker connection

Make sure that your Left (L) and Right (R) speakers are connected directly to a pair of your audio interface outputs. If anything is present between your audio interface and your speakers (like a mixer, a monitor management system, etc.), please check that their settings do not alter the audio signal in any way (e.g., no tone controls, no mono switch, phase reverse, etc.).

If you use a powered subwoofer that performs bass management, just connect your audio interface outputs to the subwoofer inputs, and your L and R satellites to the proper subwoofer outputs. This way the system will still be seen as a standard dual channel system (with an increased low frequency extension).

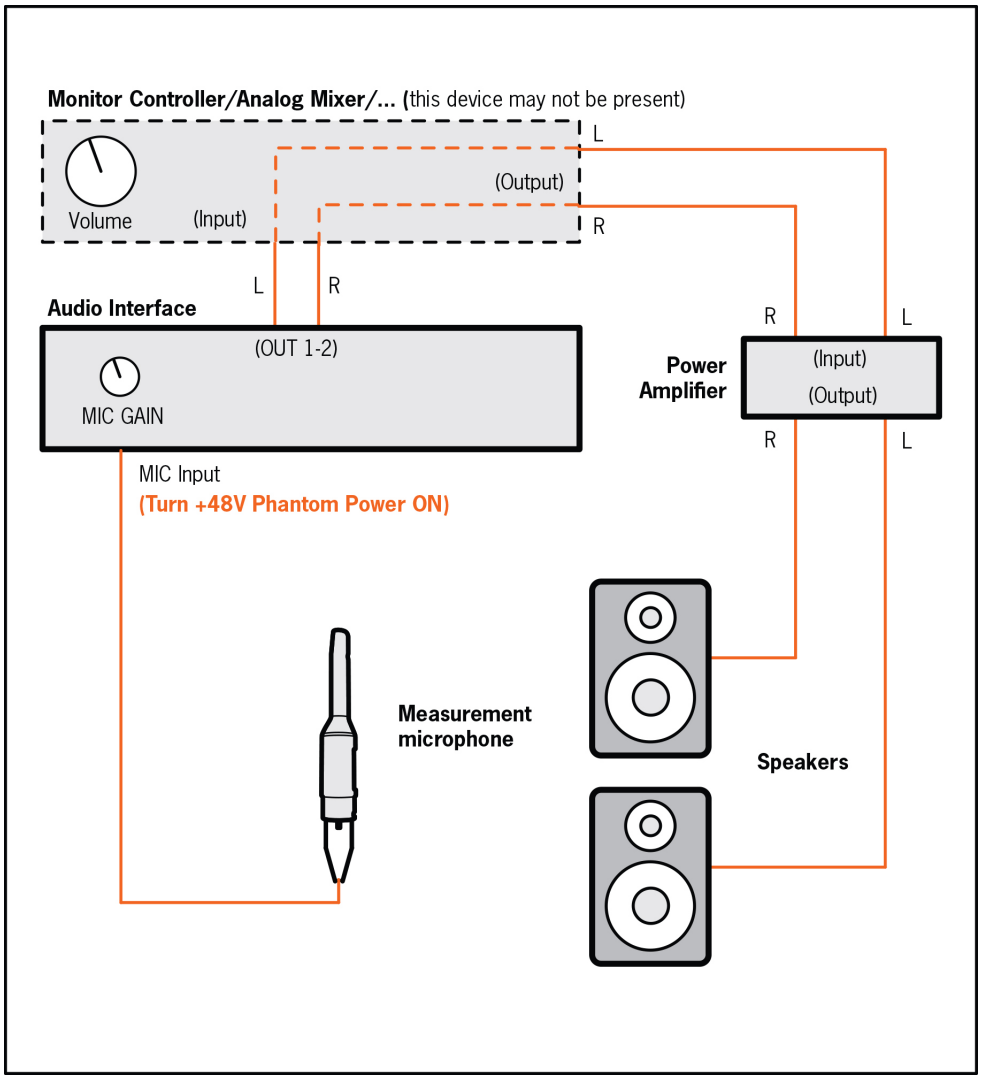
3.2.2 – Powered Speaker setup

This shows one possible way to connect your system components when powered speakers are used.



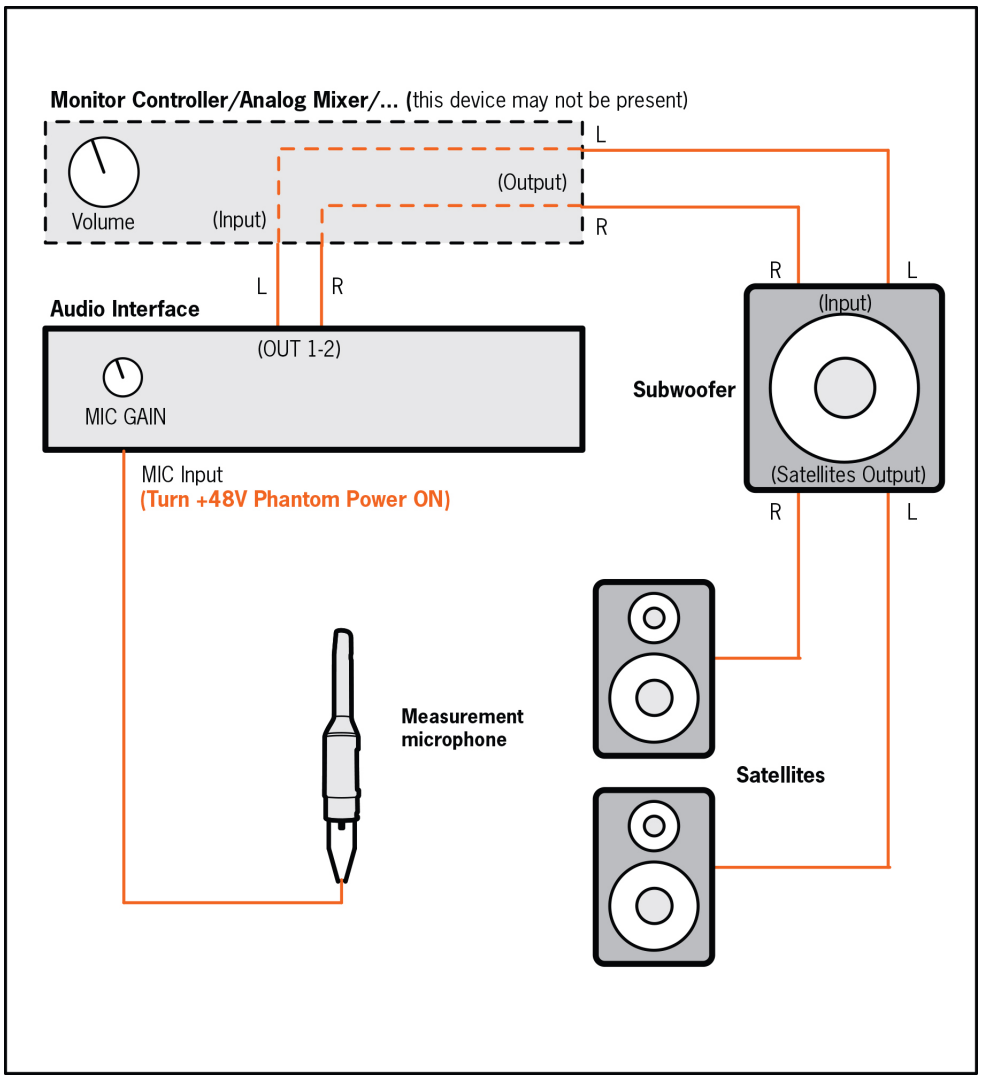
3.2.3 – Passive Speaker setup

This shows one possible way to connect your system components when passive speakers are used.



3.2.4 – Active Subwoofer and Powered Speakers setup

This shows one possible way to connect your system components when an active subwoofer is used together with powered speakers.



3.2.5 – How to connect the RTA Measurement Microphone

Please connect your measurement microphone to a high-quality microphone preamplifier and enable the +48V phantom power supply.

Please check that your system meets either of these two requirements (either one is okay):

1. The preamplifier is built into the audio interface. In this case, the microphone will be directly connected to the XLR input on the audio interface without using any attenuator pad and with +48V phantom power turned on.
2. The audio interface has no mic preamplifier. In this case, you will need to connect the microphone to an external preamplifier or to a mixer and then connect the preamplifier output to the audio interface line input.

To get the necessary precision, the preamplifier should be as clean and flat as possible. For this reason, you should avoid using tube preamplifiers for measuring. Also, electronically balanced (transformerless) preamplifiers are preferred over transformer-based designs which tend to color the sound too much.

To start, set the gain control on your preamplifier to its middle position. Probably you will have to adjust this later on when setting levels.

IMPORTANT: TURN DIRECT MONITORING OFF.

Any direct monitoring on the audio interface mixer should be turned OFF. To confirm this, simply check that no microphone signal is going out to the speakers.

Chapter 4 – Using the ARC 3 Analysis

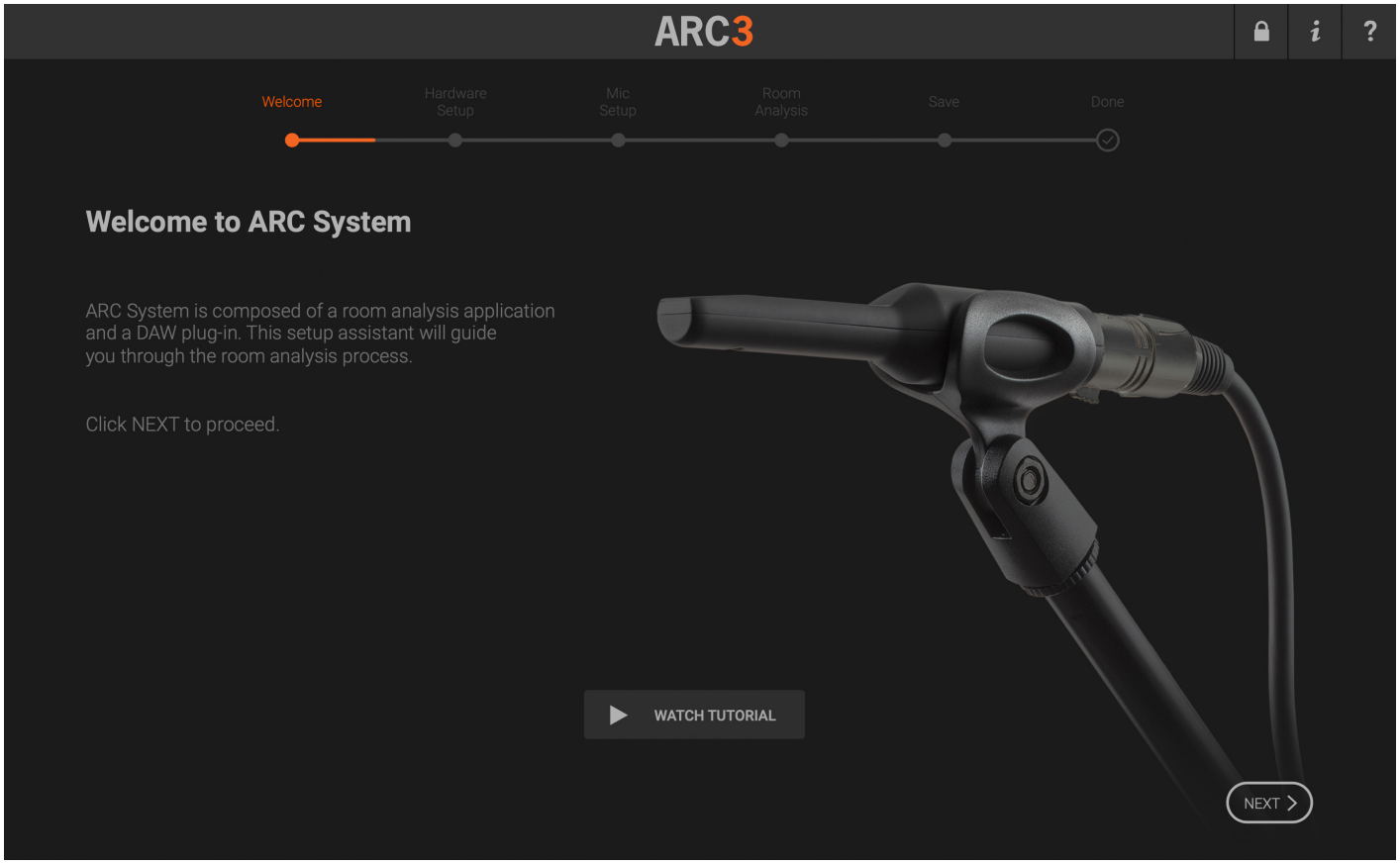
4.1 – Opening the ARC 3 Analysis application

On Windows, go to your Start Menu/Programs and launch ARC 3 Analysis.

On macOS, go to your Applications folder and launch ARC 3 Analysis.

4.2 – Welcome to the ARC System 3

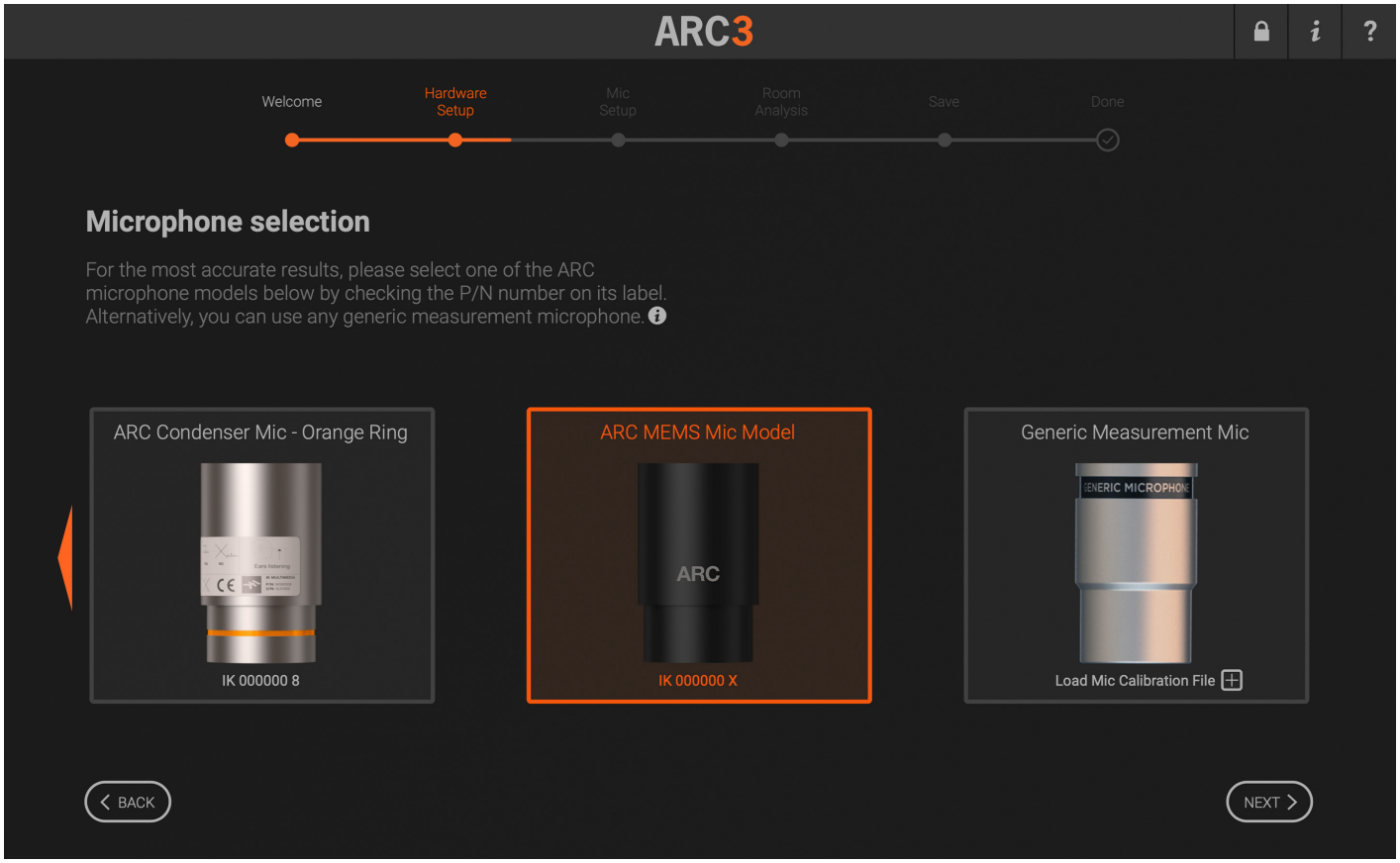
Upon launching the Analysis app, ARC 3 will display its welcome screen. Click the WATCH TUTORIAL button to be redirected on a web page video which will guide you through the capture process. Then, click NEXT to continue.



PLEASE NOTE: after you have completed each step's instructions, click NEXT. The steps will be displayed in the top bar with an intuitive graphic timeline, and the steps indicator will show you the steps already made and the current step.

4.3 – Microphone Selection

Select the measurement microphone you have by clicking 1 of the 4 tabs present in the Microphone Selection page of ARC 3 Analysis.



The ARC System 3 Measurement Microphone is available in 3 different versions:

1. early ARC 1 metal body microphones without the orange ring
2. early ARC 1 and ARC 2 metal body microphones with the orange ring
3. new ARC 3 MEMS mic with black plastic body

It is important to understand that none of microphone are inherently better or worse. It is simply that due to a small difference in frequency response, the software must be told which microphone you are using to ensure the most accurate measurement possible.

The system bases its accuracy performance on the precision of the analysis process, so it is strongly recommended to use a dedicated ARC microphone. However in ARC 3, you can also perform the room analysis using a standard Measurement Microphone (sometimes also called “RTA Mic”) you might already have at your disposal.

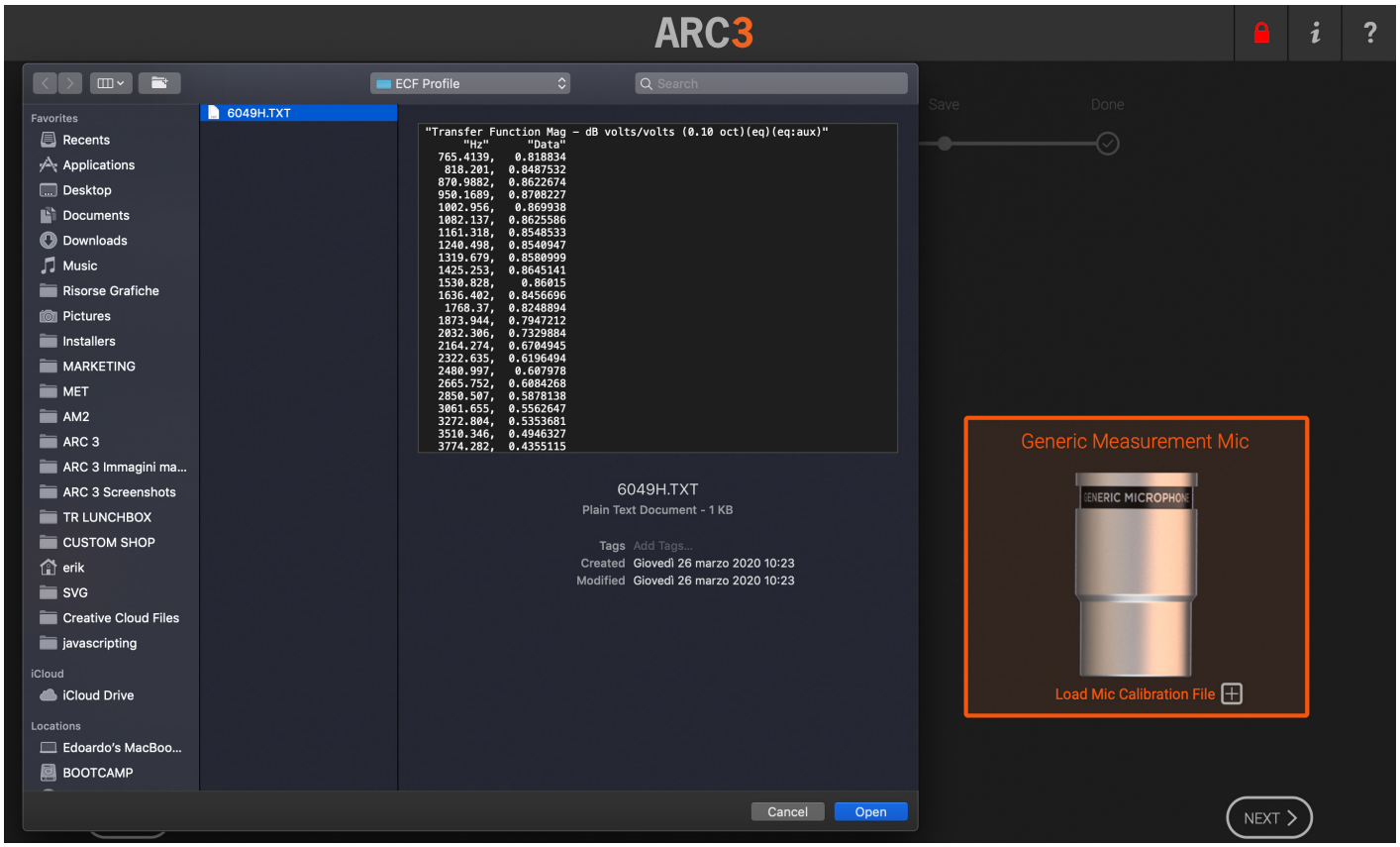
Measurement microphones are also called “RTA” microphones because they typically come with real-time audio spectrum analyzers. They are omnidirectional, with a flat frequency response, and are only used for taking audio measurements.

PLEASE NOTE: microphones designed for recording, even the omnidirectional ones, are normally not suitable for taking audio measurements, and if used with ARC, they will provide unreliable results.

To use your available Measurement Mic, select the fourth Mic selection tab, “Generic Measurement Mic.” You can now proceed to Room Analysis or, for better precision in the results, you can load a calibration file for your mic.

Calibration files (also called ECF by some manufacturers) are .txt files that describes the frequency response of your microphone, and they are normally available from the Mic manufacturer.

To load you microphone calibration file click on the “+” icon besides the Load Microphone Calibration label and proceed with the room analysis process. Now from the system dialog, browse and load the calibration file (or ECF).

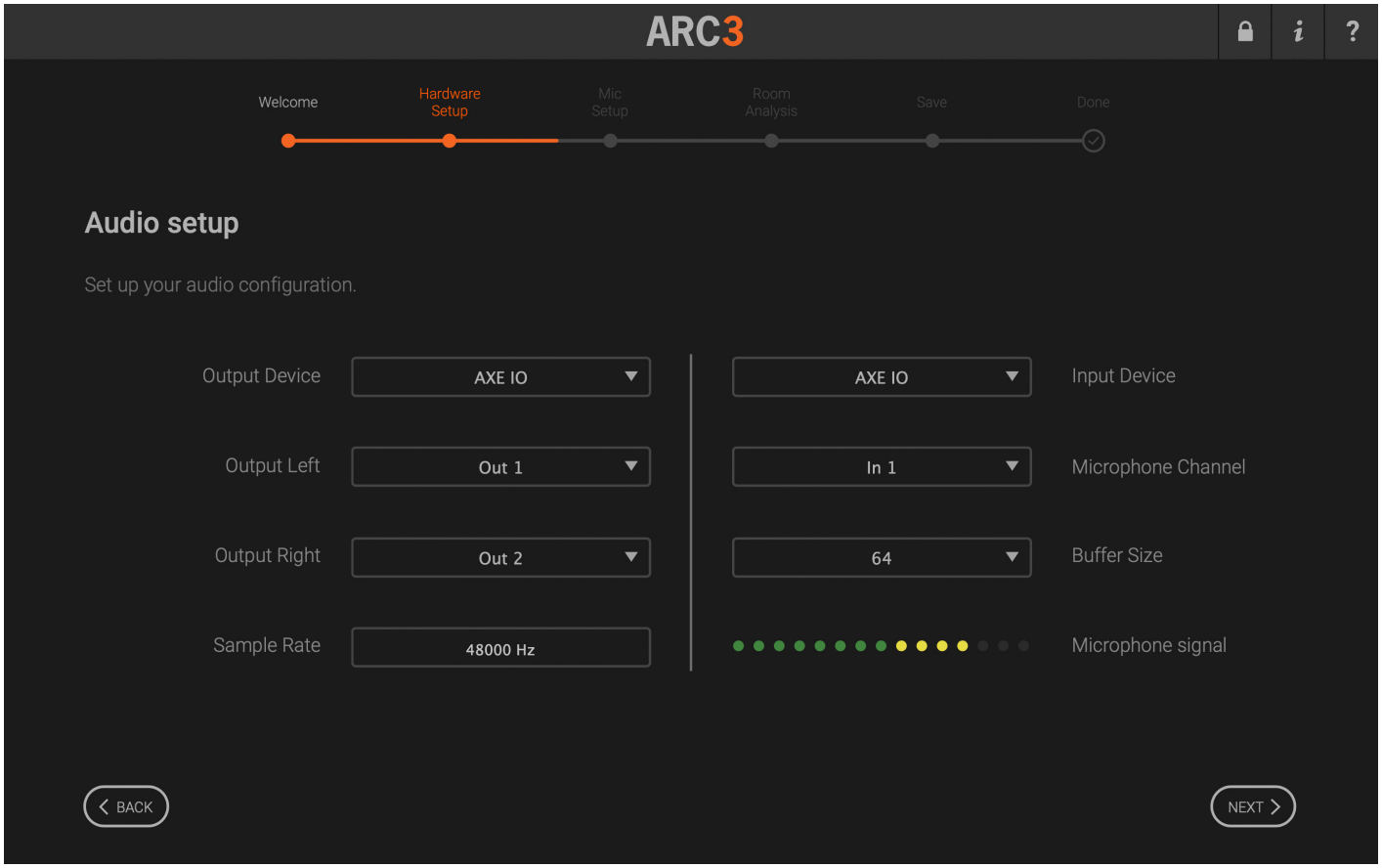


Once you have selected which microphone type you have, click NEXT to proceed with the ARC 3 Analysis process. If you have not selected a microphone type, you will not be able to click NEXT to continue.

IMPORTANT: If the wrong microphone type is selected, the resulting ARC 3 correction will be inaccurate. Please take the time to make sure that you have selected the correct microphone to ensure an accurate measurement!

4.4 – Audio Setup

Select your audio hardware here, and then choose which channels to use for speaker outputs and the microphone input.



Output Device: Click this menu to select the audio interface you are using for output. ASIO-compatible interfaces will be listed in Windows, and Core Audio-compatible interfaces will be listed in macOS.

Input Device: Click this menu to select the audio interface you are using for input. ASIO-compatible interfaces will be listed in Windows, and Core Audio-compatible interfaces will be listed in macOS.

Output Left: Click this menu to select the audio interface output that is connected to the LEFT speaker. For example, “Output 1.”

Output Right: Click this menu to select the audio interface output that is connected to the RIGHT speaker. For example, “Output 2.”

Microphone Channel: Click this menu to select the audio interface input where the Measurement Microphone is connected.

Microphone Signal: Help yourself with the mic signal meter which displays your microphone's volume, and remember to set the gain in the middle position. Then turn on +48V phantom power to the mic.

ASIO Panel: This button only appears in Windows where ASIO drivers are used.

Buffer Size: By default, ARC 3 analysis will set the buffer size to the lowest value supported by your hardware starting from a minimum of 128 samples.

Sample Rate: ARC 3 Analysis will automatically set the sample rate to 48 kHz.

IMPORTANT NOTE: Considering that the analysis process must be done at 48 kHz, the ARC 3 Analysis application must set your audio interface sampling rate at 48 kHz. For this reason, please check your audio interface that the sampling rate is not locked, and that 48 kHz is supported and allowed.

ARC 3 Analysis will try to set the sampling rate to 48 kHz as soon you select your audio interface. If the audio interface cannot be set at 48 kHz, an alert message will notify you that the room capture cannot be taken.

Click NEXT when the Interface, Outputs and Microphone Input are all correctly selected.

4.5 – Select the listening position type

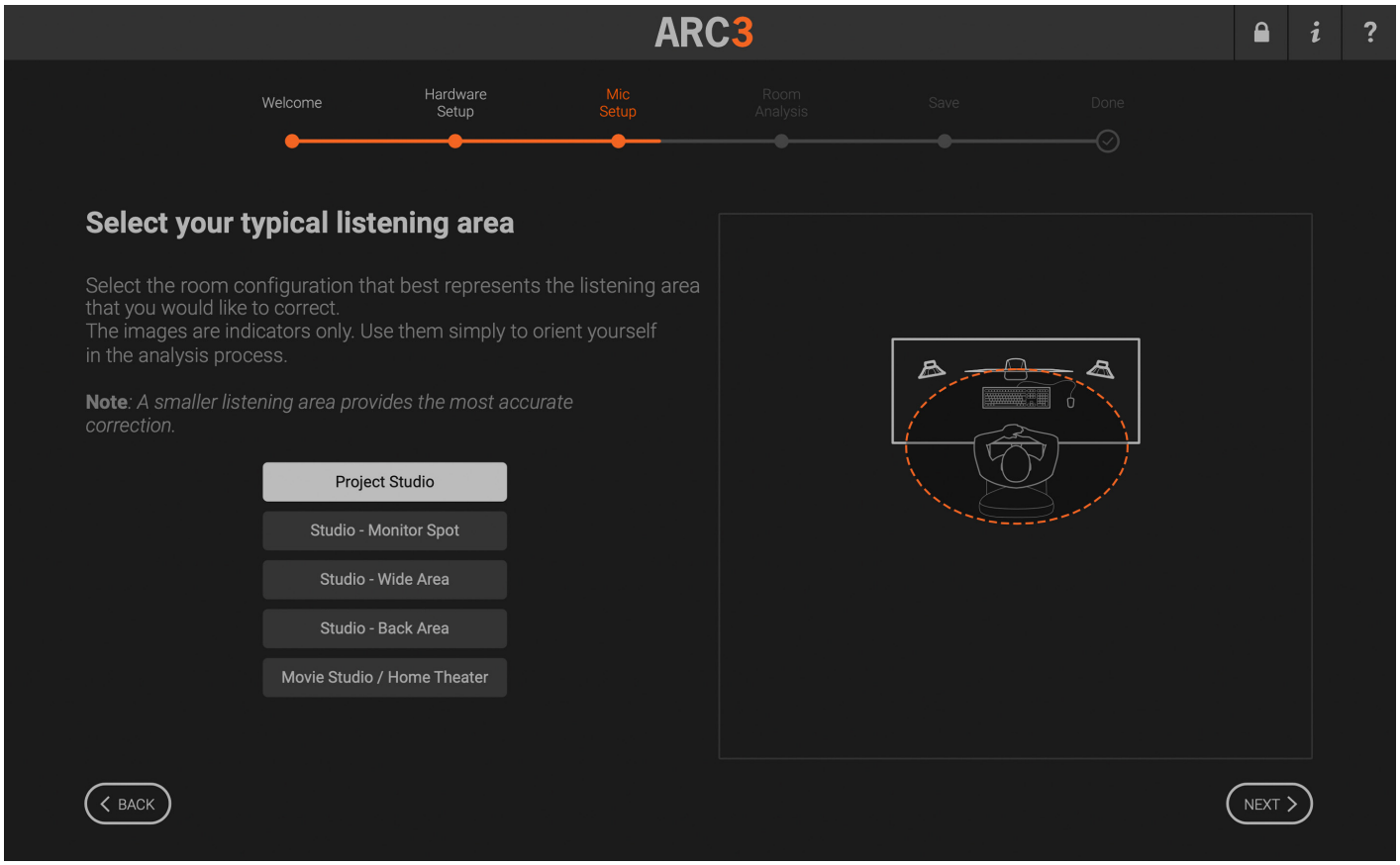
Now select the ideal environment you are analyzing in order to help you positioning the microphone. The orange dotted line, positioned around the listening position, indicates the area where the captures are to be taken.

In the next steps of the walkthrough, you will be shown how to proceed with each individual capture.

Select one of the following options, and click NEXT to proceed:

Project Studio

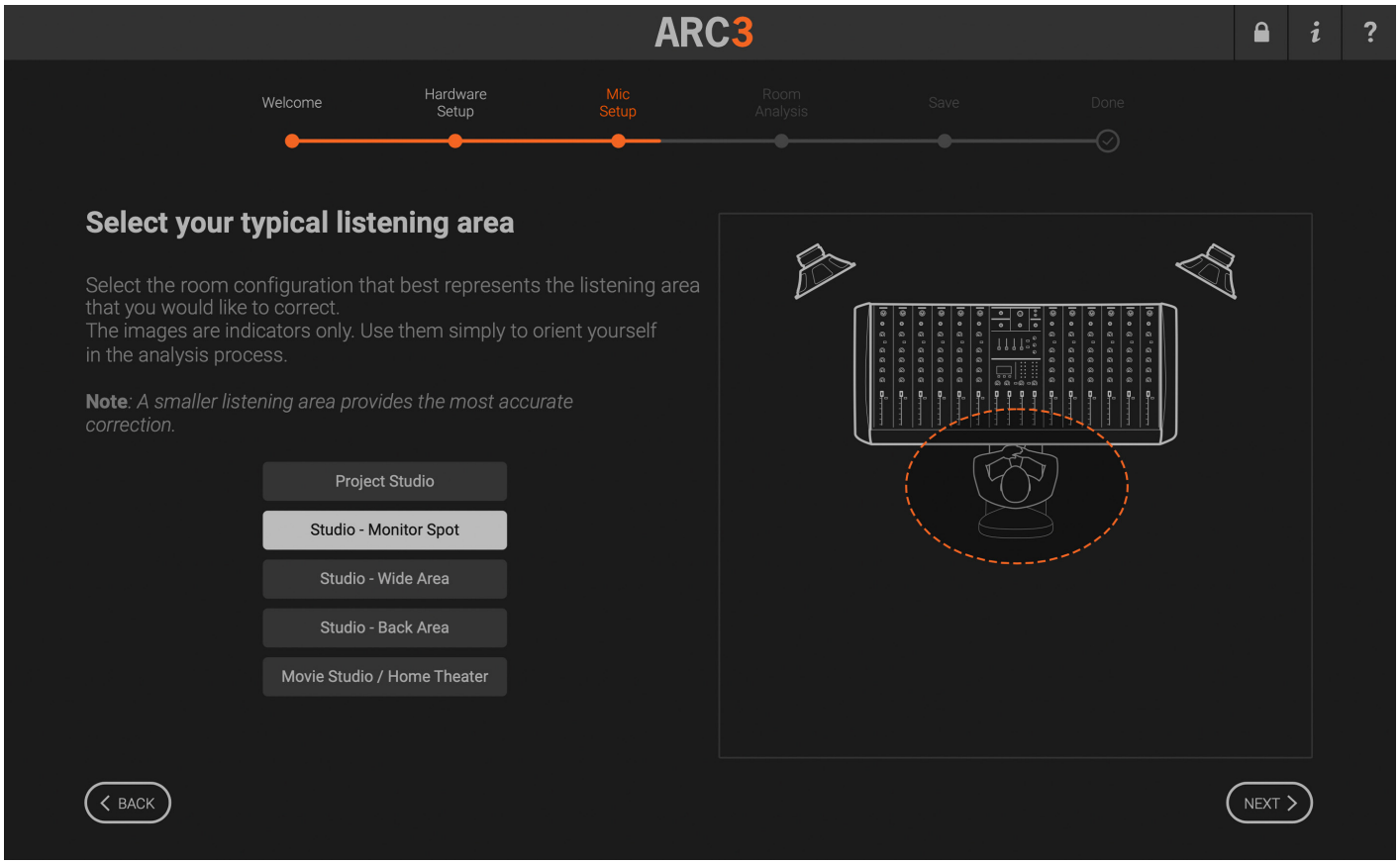
Project Studio, the favorite choice for those who work in a small environment: a small studio or a bedroom studio, with one single listening position.



The man sitting on the chair is in the main position and it is perfectly centered between the two speakers. This is the position you should use to calibrate levels and for the first capture.

Studio – Monitor Spot

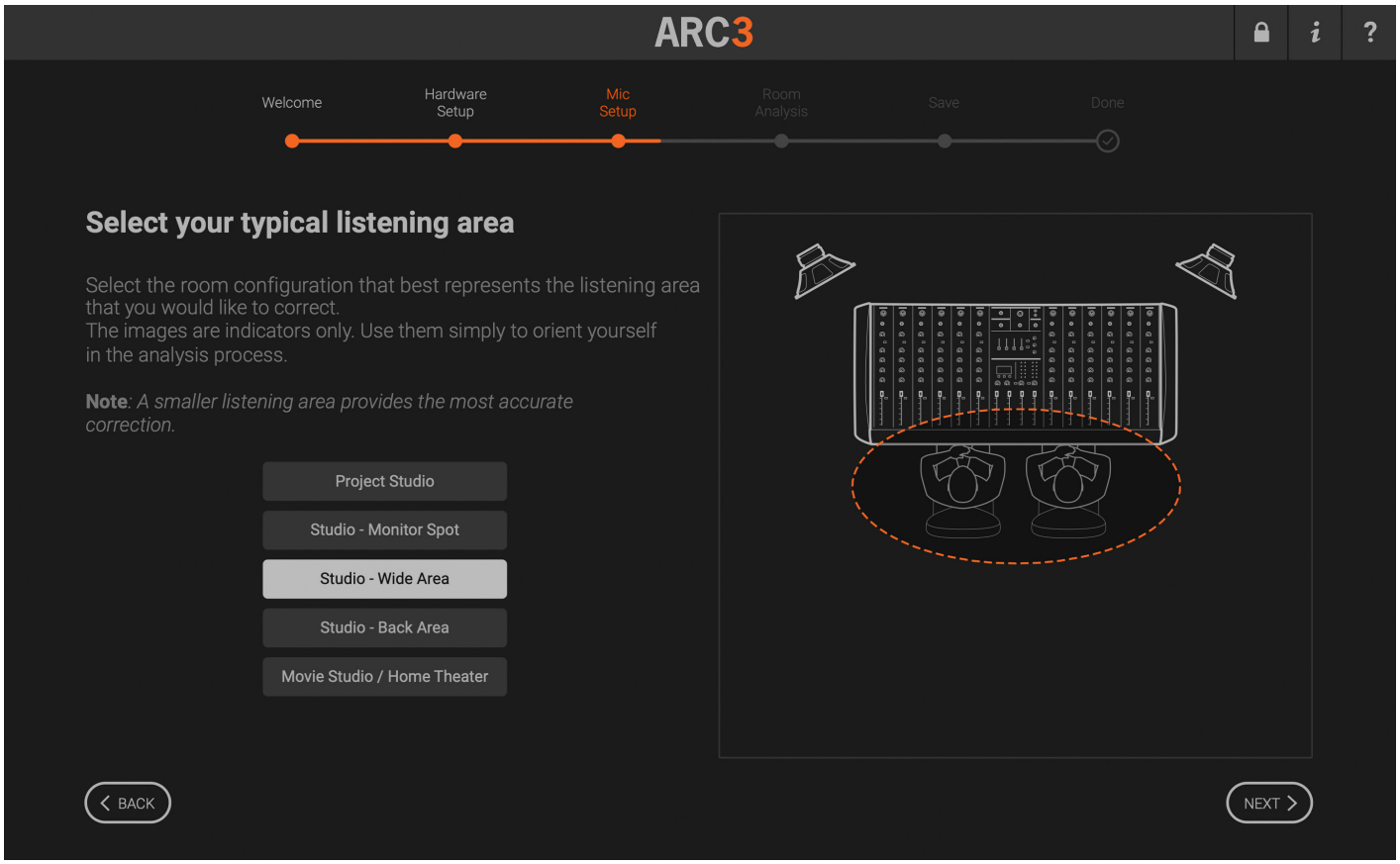
Studio, one chair, one main listening position.



The man sitting on the chair is in the main position, and it is perfectly centered between the two speakers. This is the position you should use to calibrate levels and for the first capture.

Studio – Wide Area

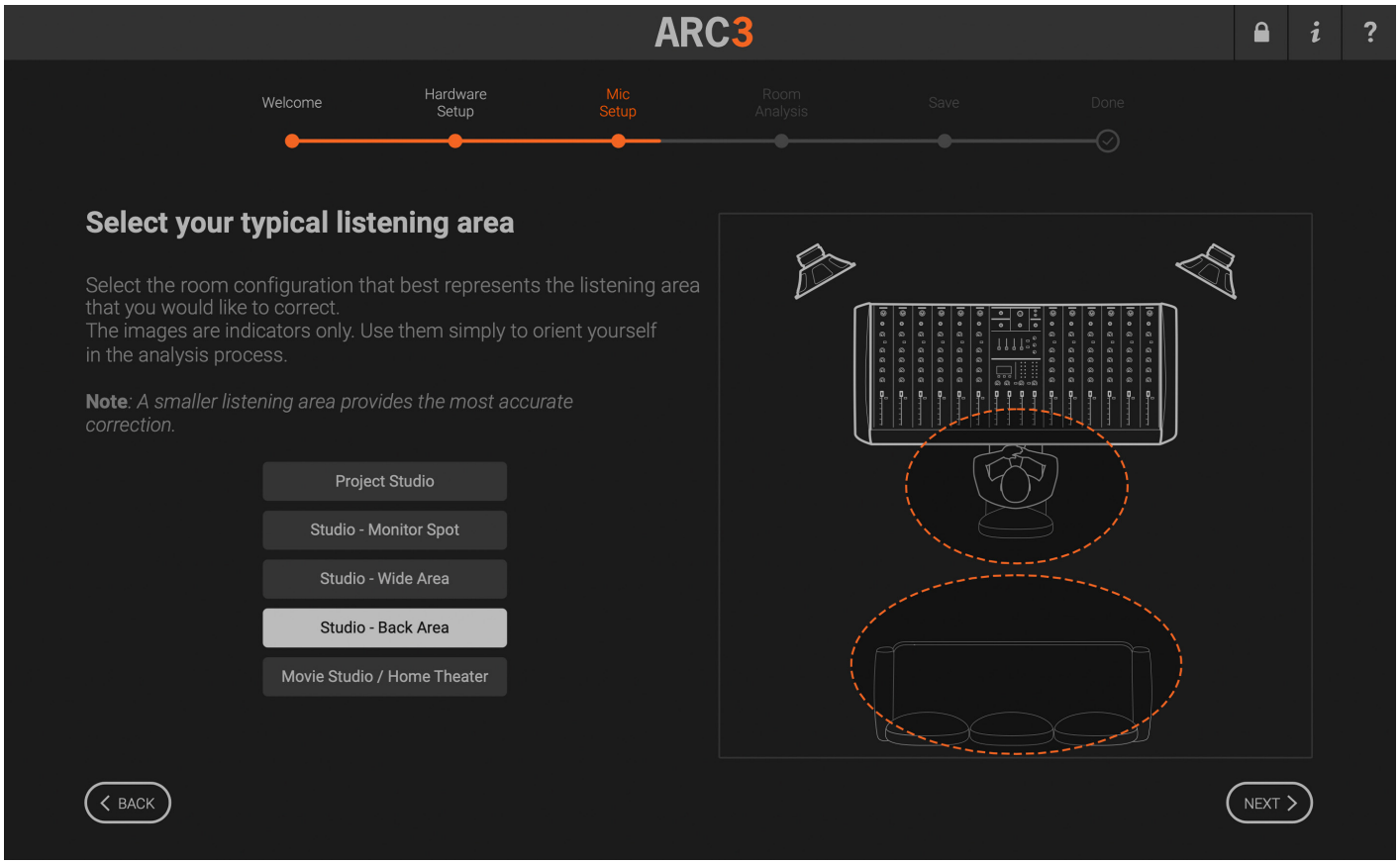
Studio, two chairs, wider listening position.



The men sitting on the chairs are in the main position, perfectly centered between the two speakers. The position you should use to calibrate levels and for the first capture is in the middle of the two chairs.

Studio – Back Area

Studio, one chair plus “client couch” listening area.

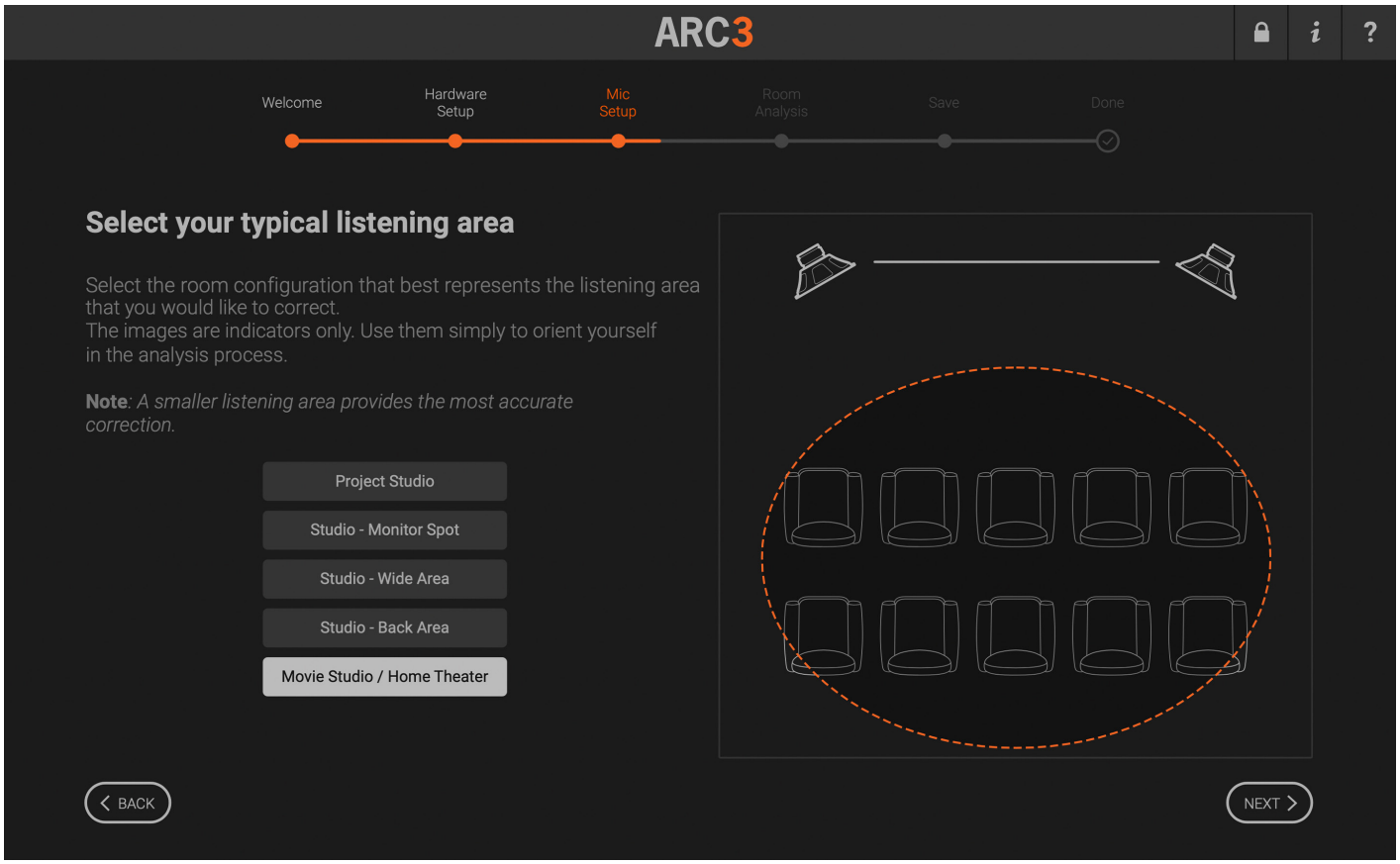


The man sitting on the chair is in the main position, and it is perfectly centered between the two speakers. This is the position you should use to calibrate levels and for the first capture.

The optimized listening area is extended to the client couch as well. Placing the microphone as shown in the next steps will create a correction that optimizes the listening at the engineer’s chair and at the client couch at the same time.

Movie Studio/Home Theater

Movie mixing studio/theater.



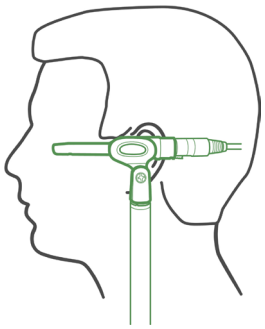
The position you should use to calibrate levels and for the first capture is in the middle of the area, perfectly centered between the two speakers. The entire sitting area is covered, and the most “accurate” listening experience will be at the main chair, front line.

4.6 – Position the microphone

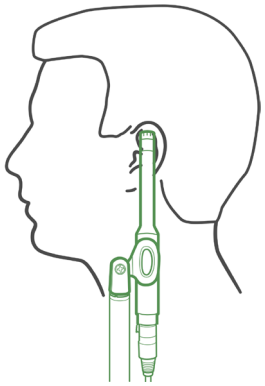
Now place and align your microphone horizontally and vertically, aligned with your ears.

PLEASE NOTE: As indicated in the walk-through images, for all ARC 3 Analysis captures, the MEMS Measurement Microphone and all the generic measurement microphones must be positioned HORIZONTALLY which is different than the ARC condenser microphones which require vertical positioning.

Example of correct ARC MEMS mic positioning (this position is also correct for all generic RTA microphones):



Example of correct ARC Condenser mic positioning:



Make sure to clip the microphone on a standard mic stand.

Try to use a mic stand with a boom arm that is extended as far away from the stand as possible. This helps avoid reflections from the stand that will interfere with the analysis at high frequencies.

Do not stand or sit near the microphone while the analysis are running.

As indicated in the figure, the microphone has to be set at the same height where your ears are when you are listening to the speakers.

Place the microphone at the main position, which depends on the listening position type selected in the previous step of the walk-through.

At this point, you should have your measurement microphone connected to the audio interface mic input (+48 V phantom power ON), and at the correct height.

Click NEXT to proceed.

4.7 – Playback Level / Mic preamp level

Once the microphone is correctly positioned at the main position, you can start checking levels:

1) Make sure you are in a quiet environment, and try to avoid noise.

2) Lower your monitoring to the minimum level and click PLAY TEST.

PLEASE NOTE: The studio listening volume can be controlled on your audio interface with the main outputs level control or with your monitoring management system. If you are using a mixer, you can use your “control room” level.

Click PLAY TEST. This will generate a test sound (chirp), and it will be sent to the outputs specified in the Audio Setup.

3) Gradually raise your monitoring level to hear the test at the same volume you are usually mixing

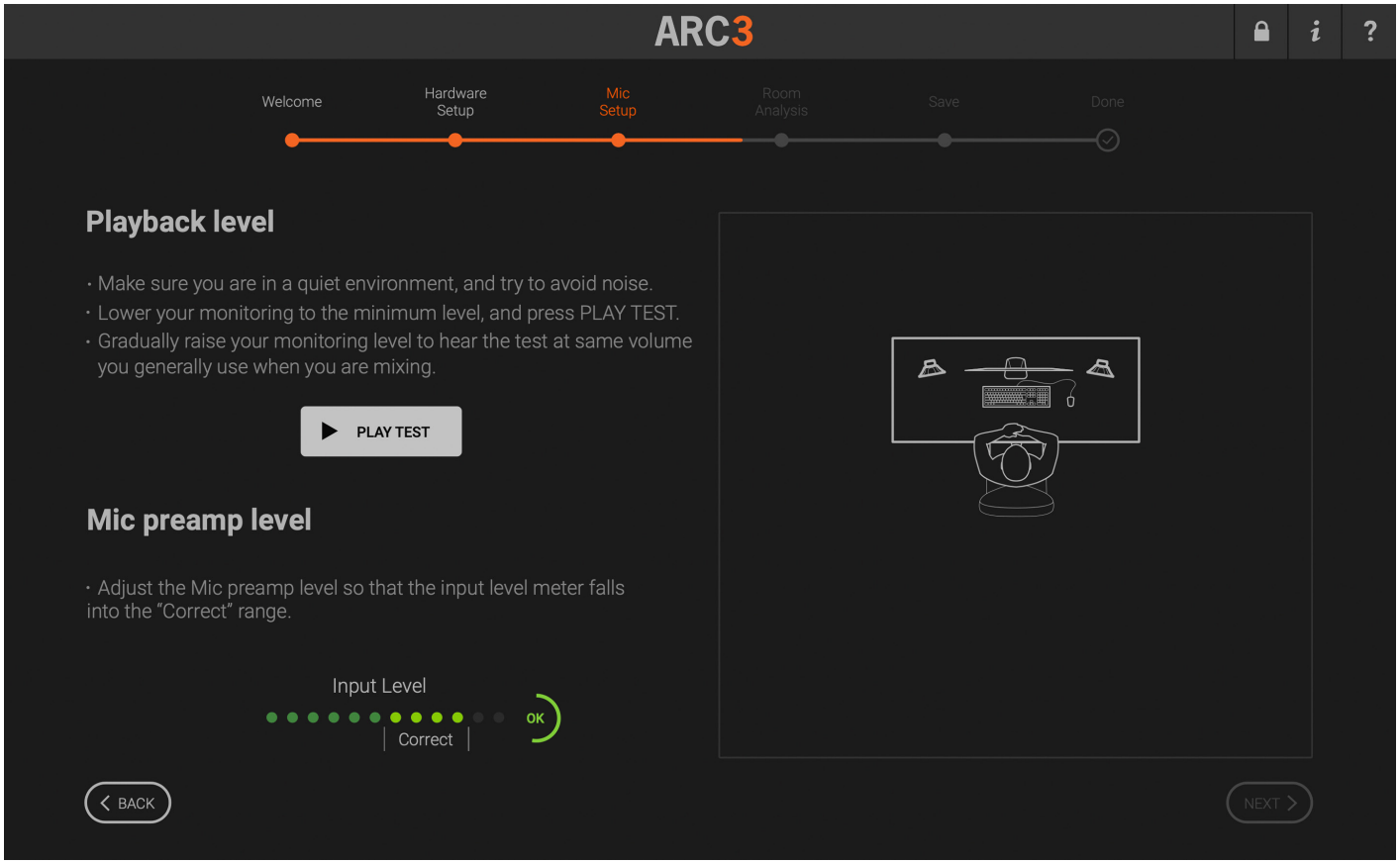
You should start hearing the test tone playing back continuously. Stop increasing the listening volume at the point where the test tone is at a medium intensity, more or less at the level that you generally work in your studio.

CAUTION! DO NOT INCREASE THE LISTENING LEVEL TOO FAST. This could create damage to your speakers and to your hearing if the monitoring system is very powerful.

4) Adjust the mic preamp level so that the input level falls into the “Correct” range.

Check the Input Level Meter indicator in the ARC 3 Analysis application.

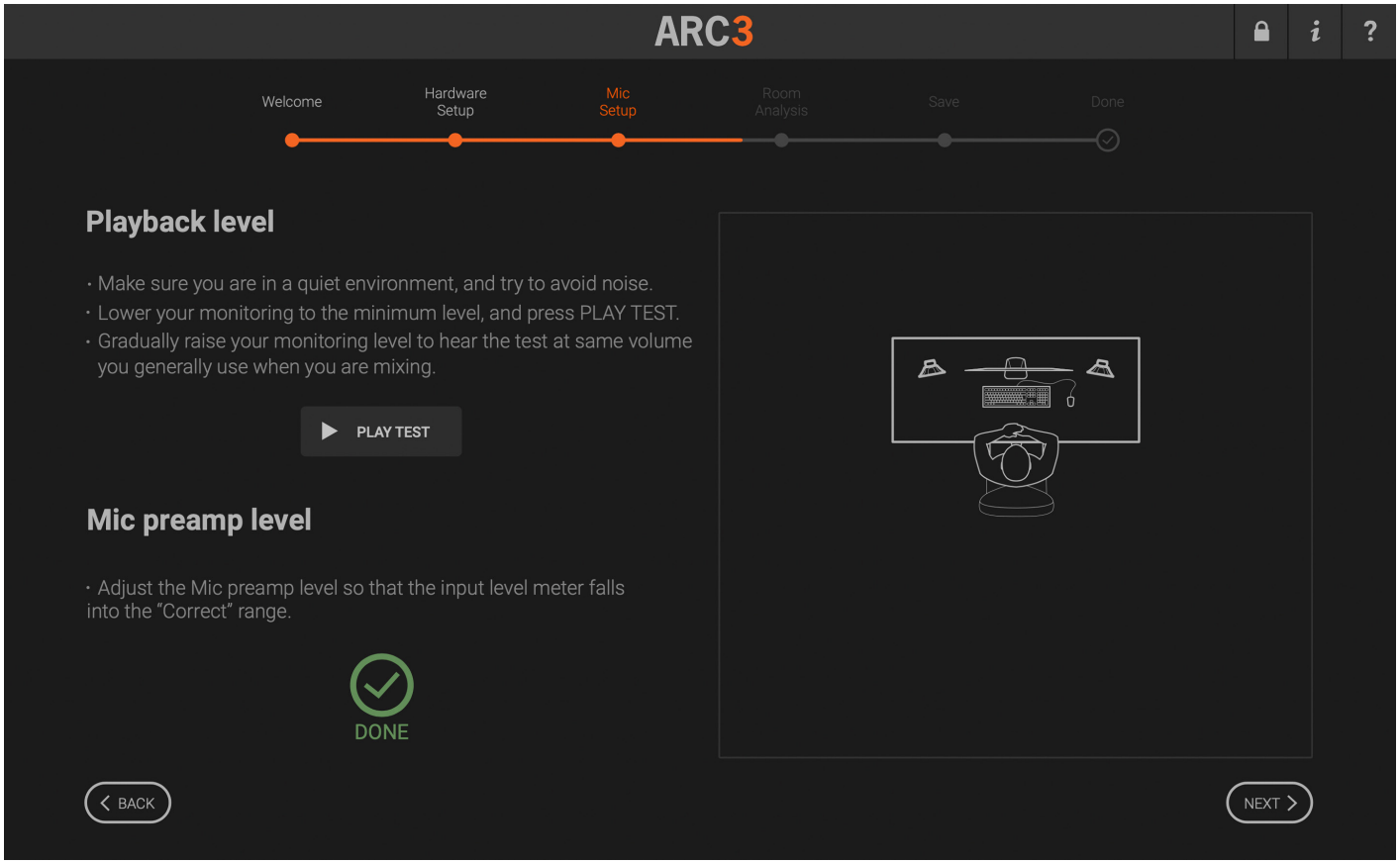
This meter shows the level of the signal captured by the measurement microphone.



While the test tone is playing, slowly adjust the MIC GAIN control on your audio interface (or on your microphone preamplifier) to have the Input Level Meter indicator display within the “OK” range.

PLEASE NOTE: In case you have increased the MIC GAIN control on your interface to maximum and still see a very low signal or no signal at all on the peak meter, please check that all cabling and connections are okay, and turn +48 V Phantom Power on.

Once you set the correct level, a green badge indicating “Done” will appear.



DO NOT CHANGE any of the audio settings (studio listening level, MIC GAIN control, etc.). Then click NEXT.

4.8 – Room Analysis

ARC 3 uses IK's VRM technology to evaluate the acoustics of the listening environments, taking an array of points at three different heights. The system weights these captures in 3D so that the most relevant room issues are addressed without correcting positions that don't affect your monitoring. The result is an incredibly accurate, natural sound that doesn't sound processed or artificial.

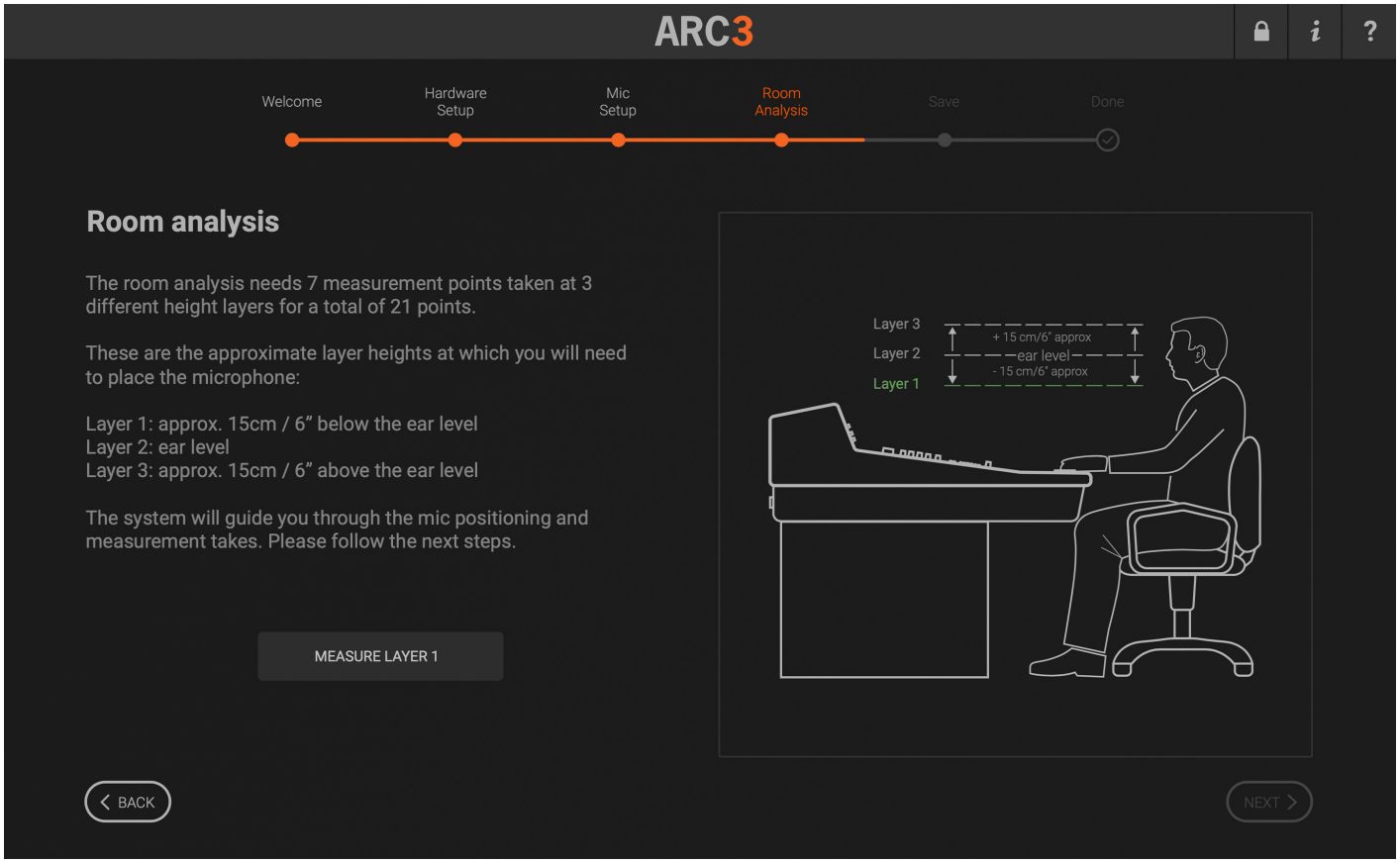
The ARC 3 Room Analysis needs 7 capture points taken on 3 different height layers, for a total of 21 points.

As indicated in the image, the 3 layer positions where to put the microphone at, are:

Layer 1: Approx. 15cm / 6" below the ear level

Layer 2: ear level

Layer 3: Approx 15cm / 6" above the ear level



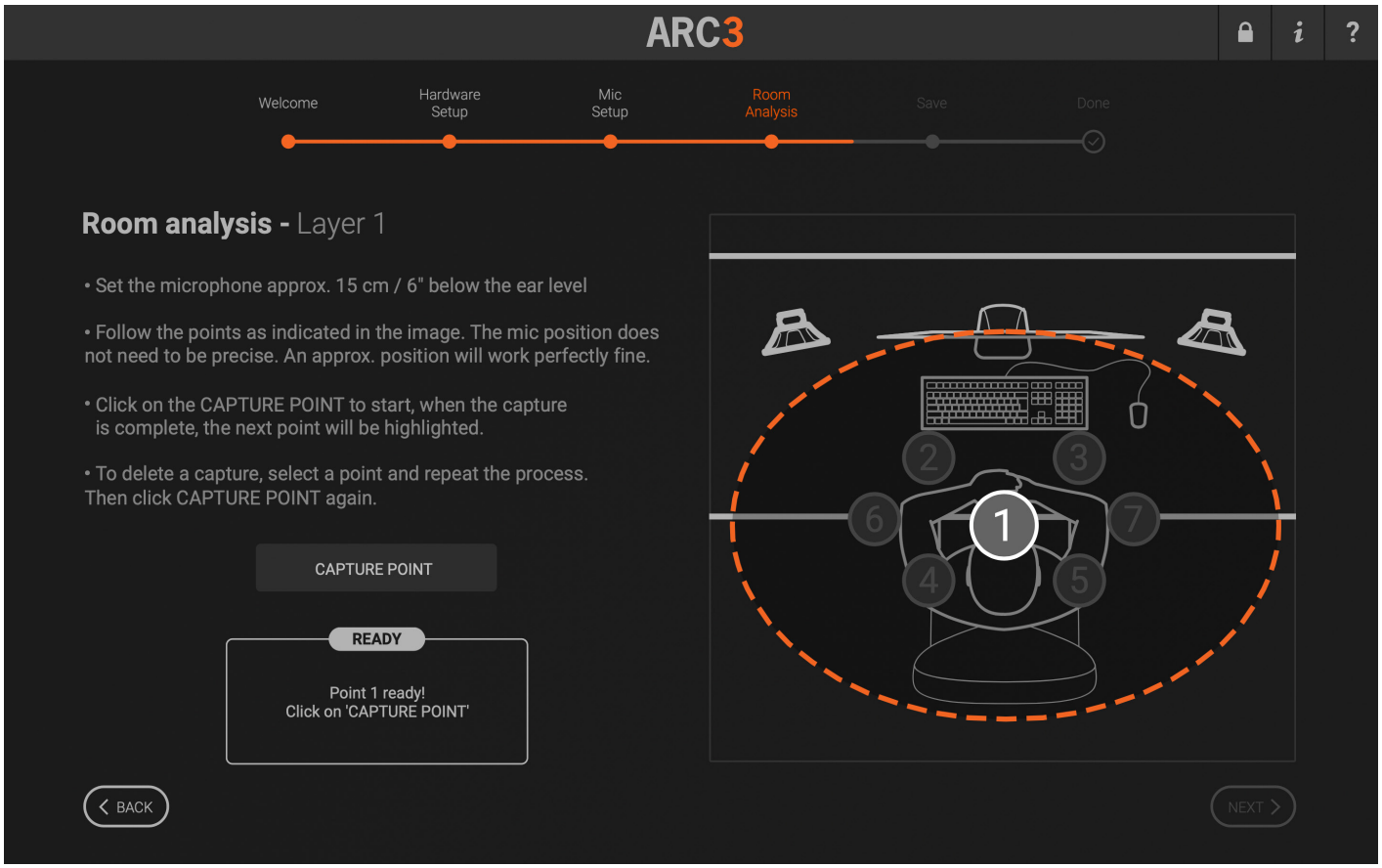
PLEASE NOTE: These positions are approximate. It is not to be exact with these measurements. Feel free to position the microphone stand without using the tape measure. You can just go "by eye" and try not to stray too far from the recommended distance.

Click MEASURE LAYER 1 to start.

4.8.1 – Layer 1

Set the microphone stand at approximately 15cm / 6” below the ear level.

The image on the right, shows the room environment that you selected in chapter 4.5, indicating 7 positions (numbered from 1 to 7) to follow within the analysis process. Position number 1 is always the main position and the first place to put the microphone stand.



IMPORTANT NOTE: The suggested analysis positions are not mandatory. You should follow them as they will always provide good, balanced, guaranteed results. However, if you like experimenting, you can also try different patterns, always bearing in mind to keep them symmetrical with the initial central point.

For example, you can take your points narrower and generally closer to your central sweet-spot if you always work very close to the central sitting position, or vice-versa you can make them larger and analyze a wider area if you typically move more across the desk. As a general rule, always bear in mind that the closer the analyzed area is, the more precise and linear the monitoring system will perform in that specific spot. And vice-versa, the wider the analysis is, the more broad and “averaged” the response will be in that larger area. Of course this will make single spot in that area slightly less precise and linear.

Follow these simple steps to properly analyze the room.

Preparing to analyze:

DO NOT CHANGE ANY OF THE LEVELS THAT HAVE BEEN SET AT PREVIOUS POINTS IN THE WALK-THROUGH.

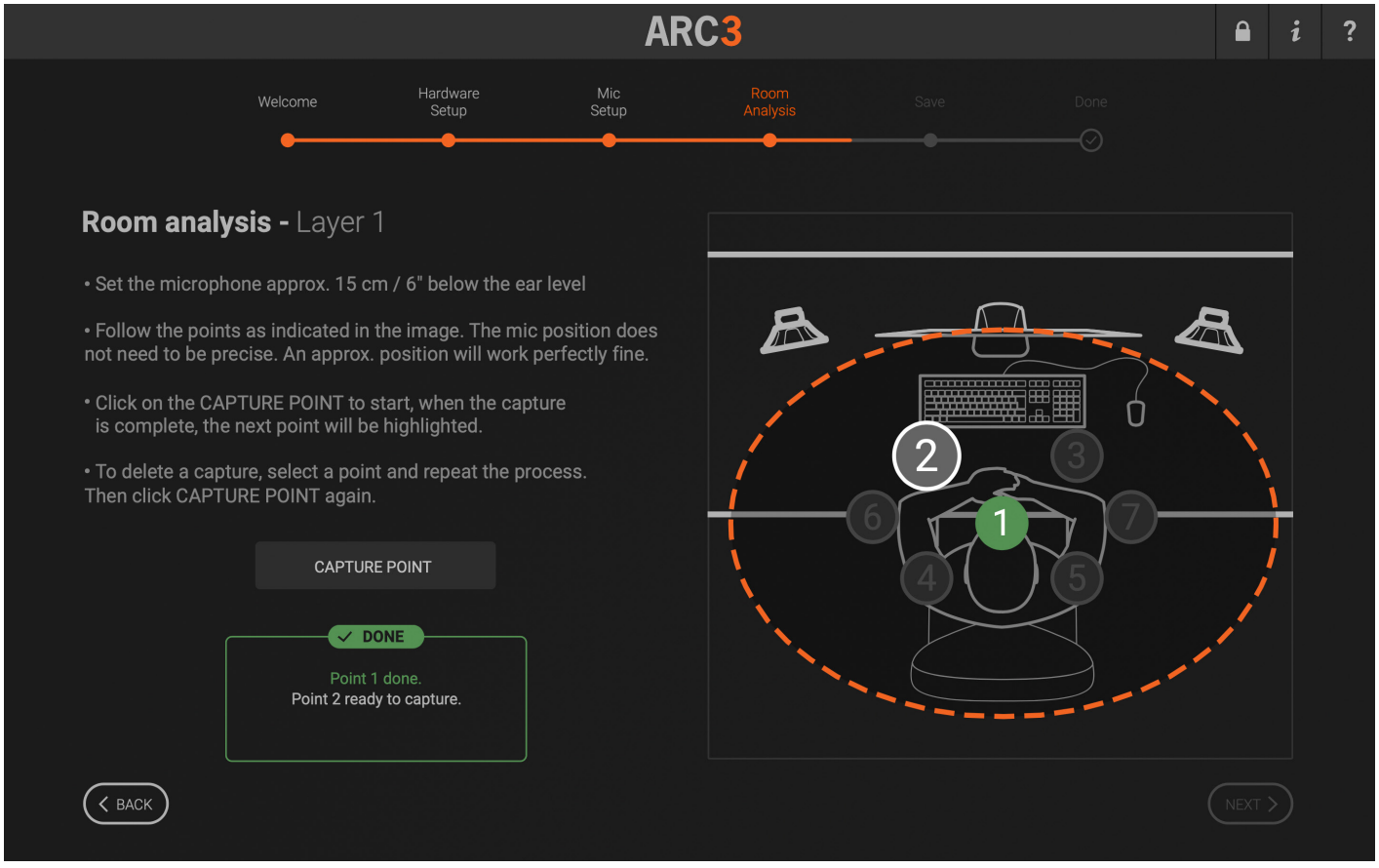
Quiet the room as much as possible (e.g., if you are using a fan and/or air conditioning, please turn it off while analyzing your room). Be sure that the room doors or windows are set the same as during your usual listening. For example, don't close the main door when capturing if this door is never closed while you are working or vice-versa. If you usually work with a few people at each the session, try to measure the room in the same conditions.

Taking the captures:

Place the measurement microphone at the main position.

Click CAPTURE POINT. Do not make any noise during the analysis process. A chirp will be played 4 times on the left speaker and 4 times on the right speaker for each capture. Do not walk, talk or move while the chirps are playing or during pauses between the chirps. Do not touch the microphone until the ARC 3 Analysis display says "Done" and the white circle has moved to the next capture number.

When a capture has been successfully taken, its number is highlighted in green, and the white circle moves to the next one. This picture shows capture #1 successfully taken, and the ARC 3 Analysis stands by to take capture #2.



DELETE CAPTURE: To delete a capture, select the capture number you want to do again, and repeat the process by clicking CAPTURE POINT. While capturing, click STOP CAPTURE if you want to stop the capturing for any reason.

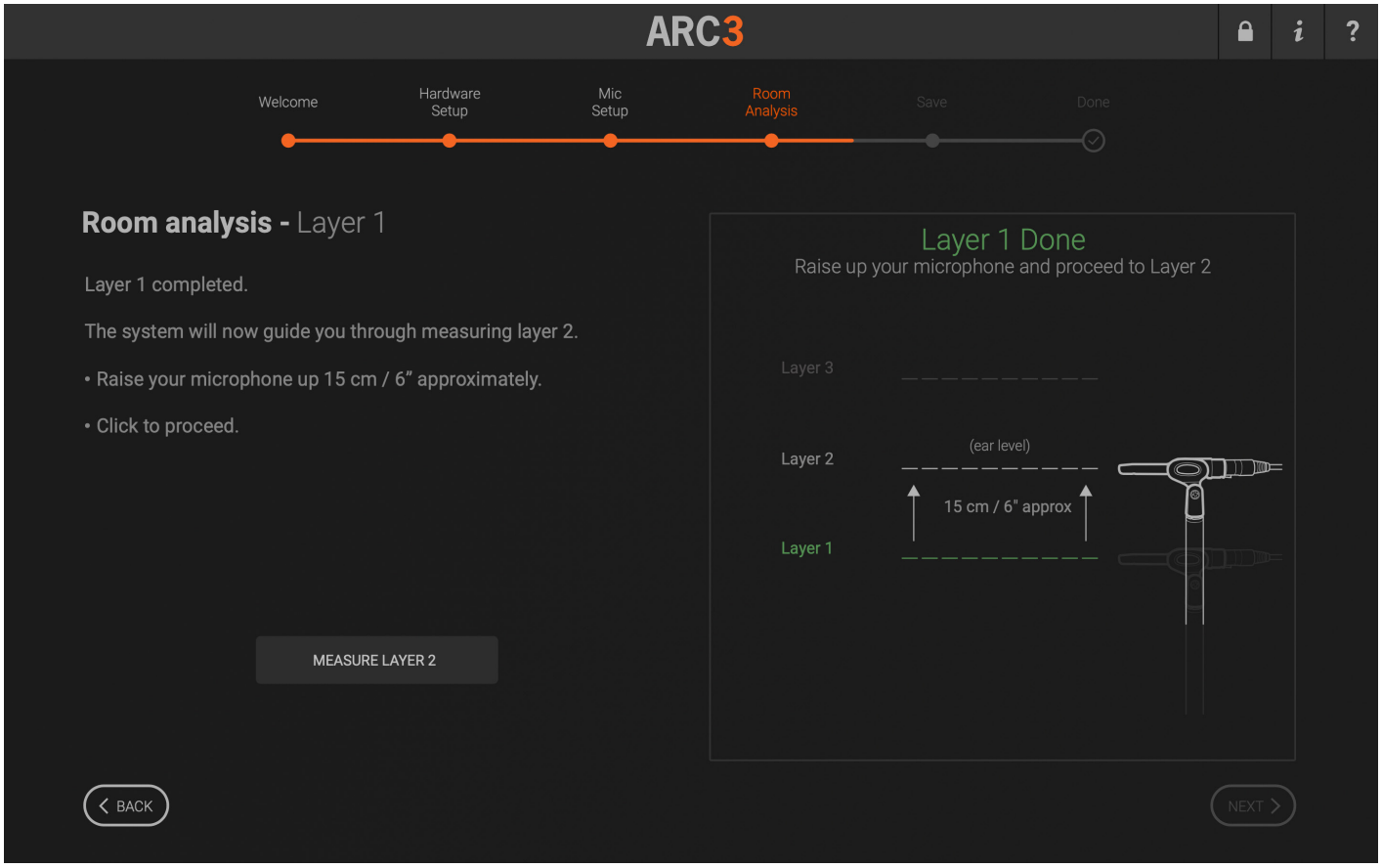
Repeat points 2, 3, 4, 5, 6 and 7 for all captures.

Note that you will not be able to press NEXT until 7 successful captures are taken.

Once you are done with the first layer, click NEXT.

4.8.2 – Layer 2

Now raise the microphone stand at approximately the ear level and repeat the process that you did for the previous layer. Click MEASURE LAYER 2.



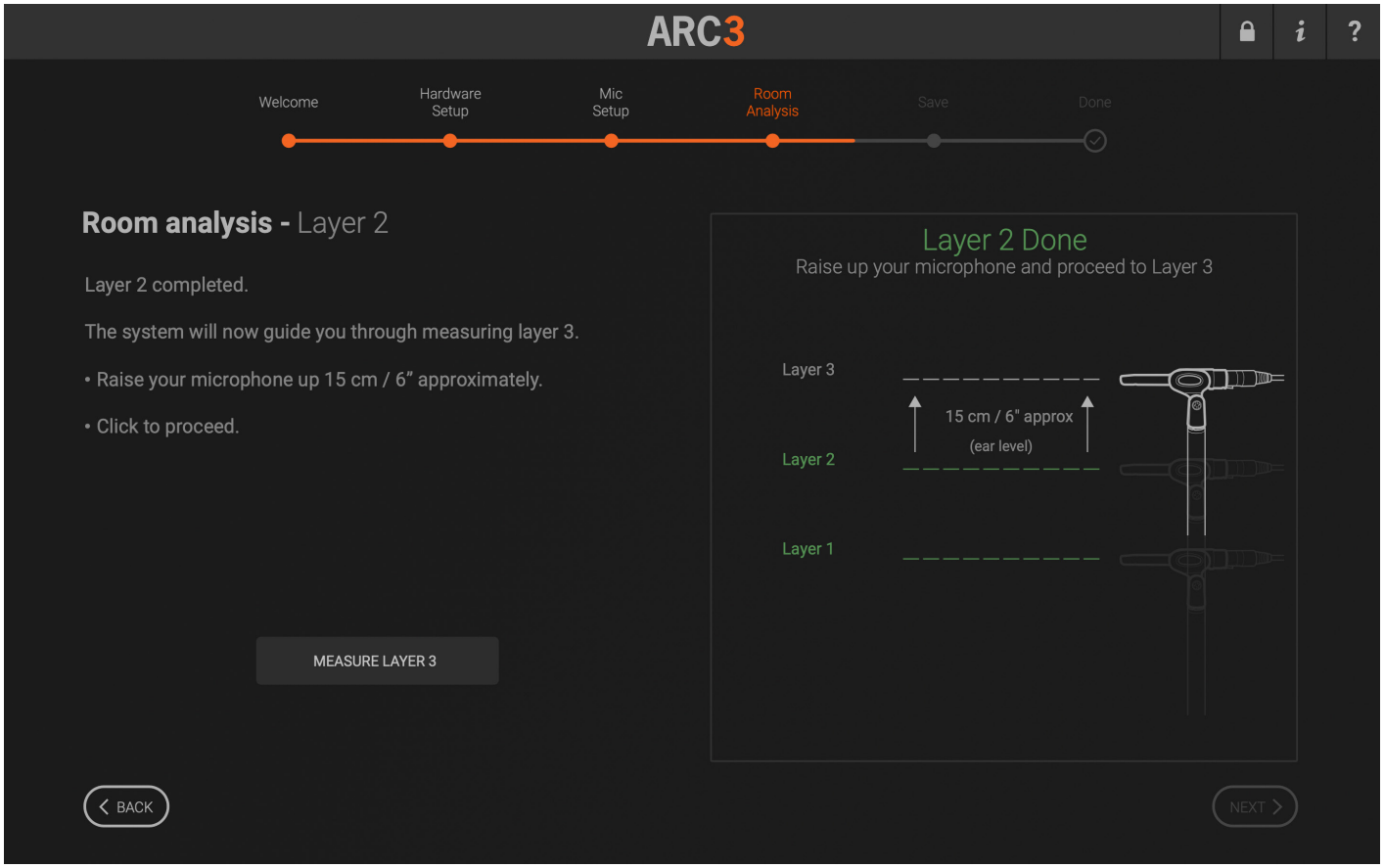
Position the microphone on the main position, numbered 1 on the image, and click CAPTURE POINT.

Repeat points 2, 3, 4, 5, 6 and 7 for all captures.

Remember that you will not be able to press NEXT until 7 successful captures are taken. Once you are done with the second layer, click NEXT.

4.8.3 – Layer 3

Now raise the microphone stand to approximately 15cm / 6” above your ear level, and repeat the process you did for the previous layer. Click MEASURE LAYER 3.



Position the microphone on the main position, numbered 1 on the image, and click CAPTURE POINT.

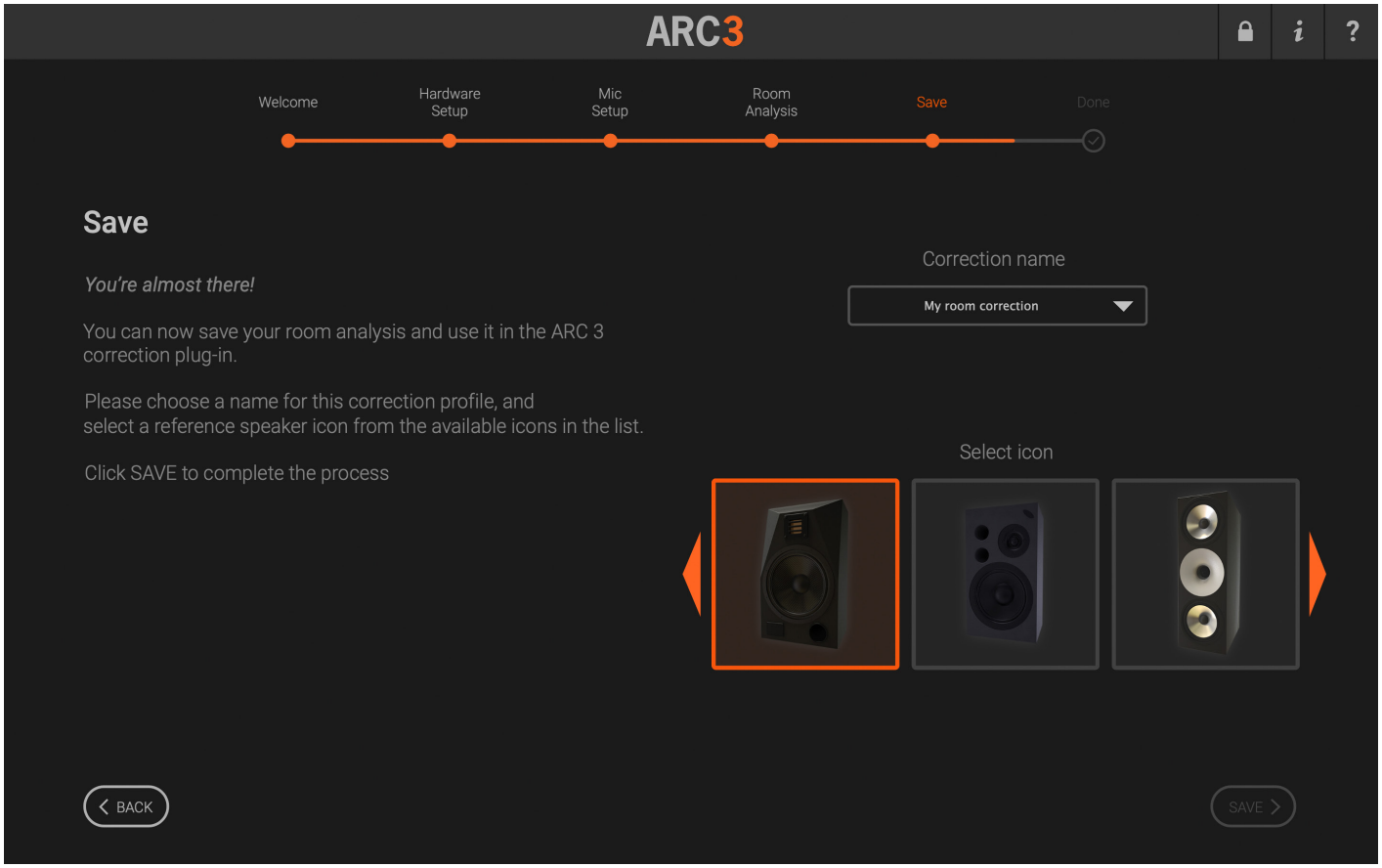
Repeat points 2, 3, 4, 5, 6 and 7 for all captures.

Remember that you will not be able to press NEXT until 7 successful captures are taken. Once you are done with the second layer, click NEXT.

Once you have completed the process, click NEXT to proceed.

4.9 – Save your correction

Once all captures have been taken, you will see this screen.



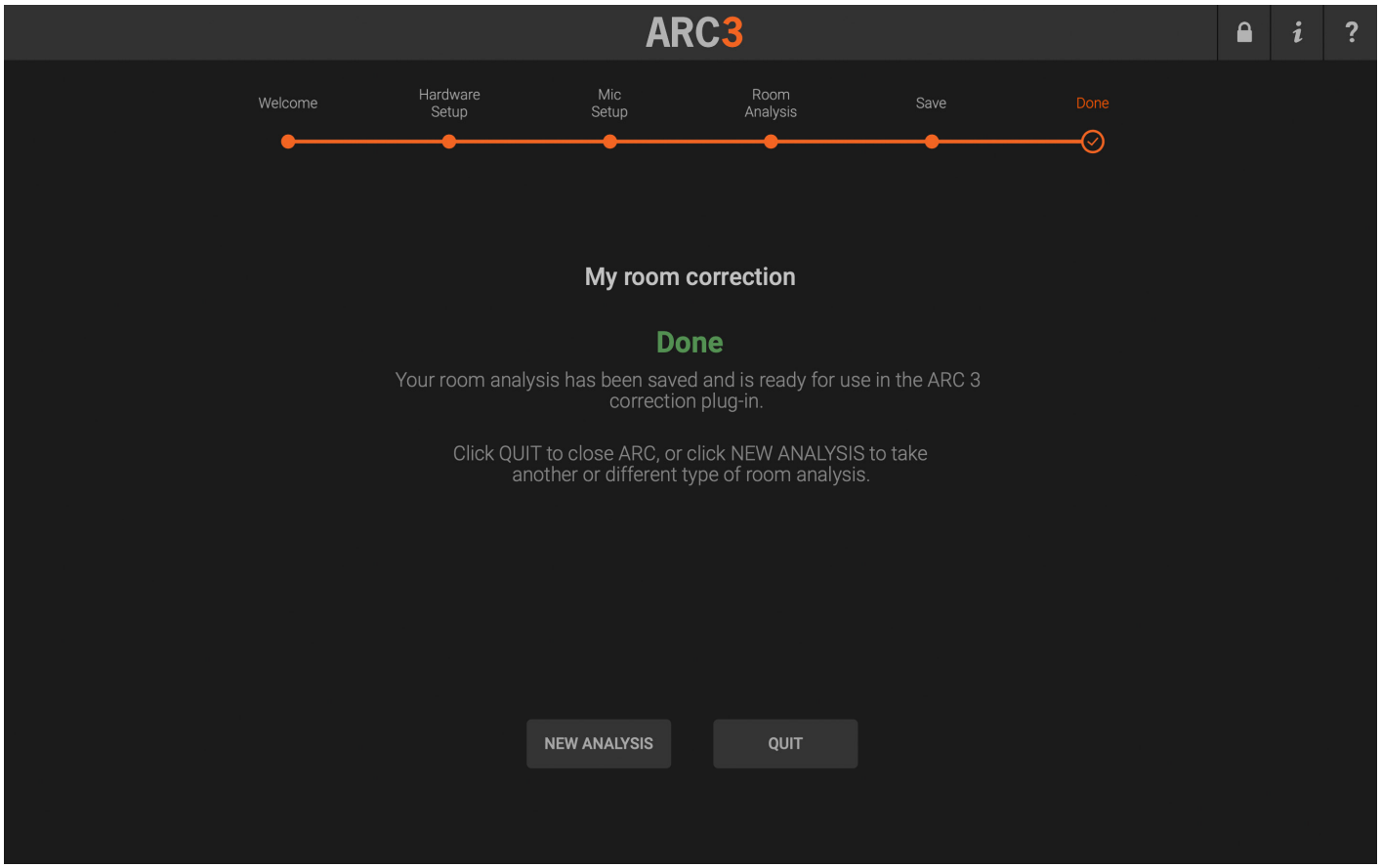
Correction Name: Click this field, and then name the recently taken measurement set. You can analyze several speakers sets or various listening conditions and give different names to each of them. This feature is very useful because you will be able to instantly recall different measurement sets in the ARC 3 Plug-in to match various needed monitoring requirements.

Speaker icon: after naming your measurement set (and before pressing the SAVE button), you can choose your preferred speaker icon which will then be displayed in the plug-in GUI. This is just a mnemonic aid to easily recall and associate your speakers with a particular measurement set. It does not affect the sound in any way.

Save: Once you have named the correction and selected an icon speaker from the list, click SAVE to proceed. You will then see the DONE page.

4.10 – DONE!

Congratulations! You have completed your Analysis!



Click NEW ANALYSIS to go back and start with a new analysis, or click QUIT to close the application.

Now open the ARC 3 plug-in on the master track of your favorite DAW and hear the difference!

PLEASE NOTE: Each analysis file saved by ARC 3 Analysis will be accessible from macOS and Win via the following folders:

Windows: C://Documents/IK Multimedia/ARC System 3/AnalysisResults

macOS: Macintosh HD/Documents/IK Multimedia/ARC System 3/AnalysisResults

IMPORTANT NOTE: ARC 3 is NOT backward compatible with measurement files taken and used with previous ARC System versions (ARC 1 and ARC 2) due to the new algorithm improvements.

Chapter 5 – Using the ARC 3 Plug-in

5.1 – ARC 3 plug-in interface

The ARC 3 plug-in is a multiplatform audio processor that applies the correction curve measured with the ARC 3 Analysis application to the incoming audio stereo signal in real-time. It is comprised of two operation windows, each dedicated to specific tasks: Play and Edit.

5.1.1 – Play Window

This window is where you can view how ARC 3 is performing the correction on your monitoring:

The ARC 3 plug-in applies one of the measurements sets you have saved from the ARC 3 Analysis application on your stereo master bus to match several different target curves. You are able to switch from one measurement set to another allowing you to compare your saved options to meet your various sonic needs.

It will also show graphical frequency responses for the left and right channels both before and after the correction. The left and right channels are individually selectable by clicking on the colored tiles above the graph.

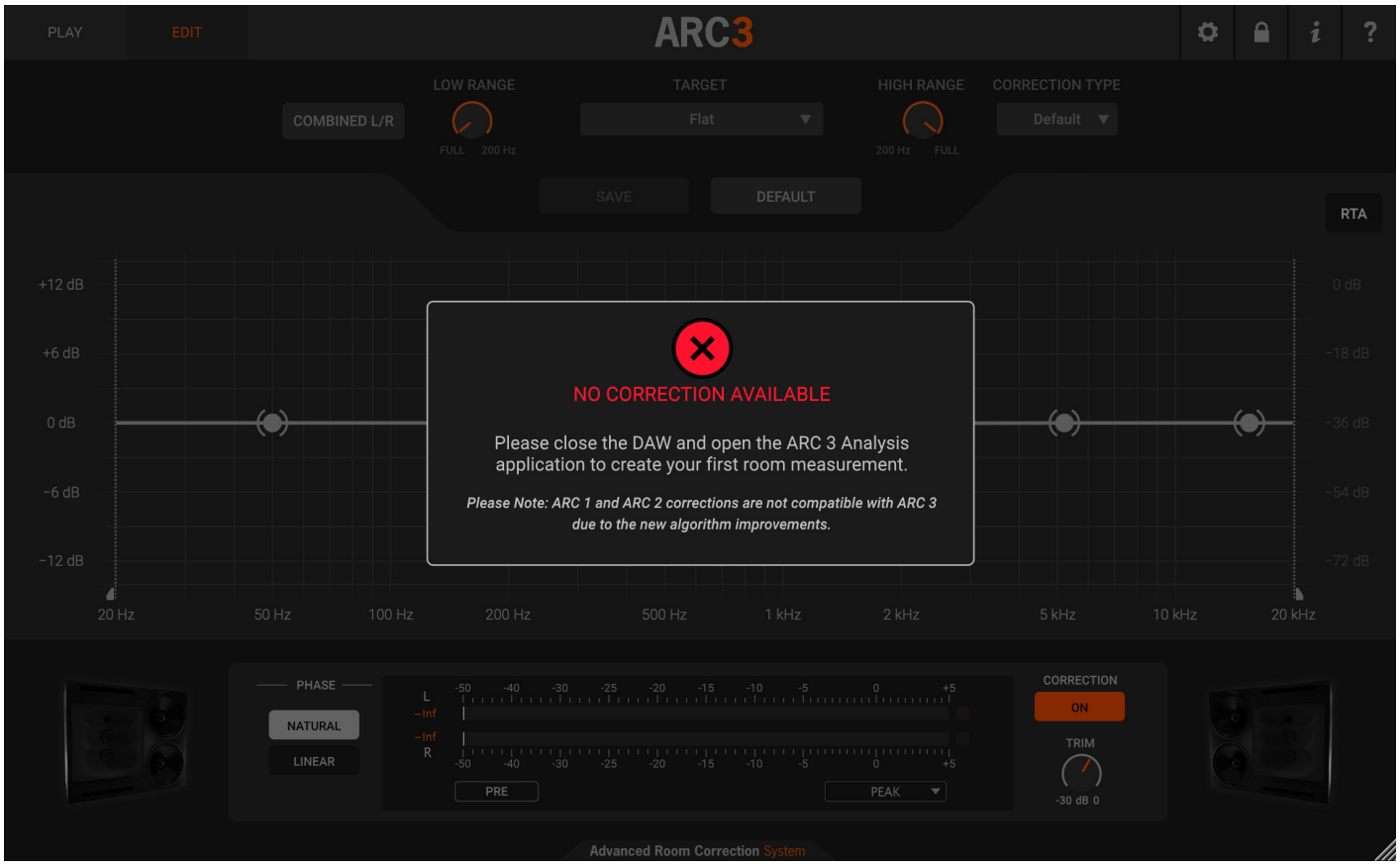
The ARC 3 plug-in alters the stereo master bus level. For this reason, a precision peak meter with several metering options is included to show both input or output levels (pre/post) so that the actual project master level can still be kept under control. Derived directly from the internationally acclaimed T-RackS 5 metering, this high-quality metering section offers PEAK, RMS, Loudness (LUFS) and Dynamic Range (DR) indications for both the PRE and POST processing signals.

5.1.2 – Measurement menu

Click this menu to select the measurement set you saved from the ARC 3 Analysis application.

IMPORTANT NOTE: ARC 3 is NOT backward compatible with measurement files taken and used with previous ARC System versions (ARC 1 and ARC 2) due to the new algorithm improvements.

If you are opening the ARC 3 plug-in for the first time, before you have completed the analysis process on ARC 3 Analysis application, you will be prompted with this alert: (fig. 5.3).



Please close the DAW and open the ARC 3 Analysis application in order to complete your first analysis.

5.1.3 – Target Curve menu

ARC 3 provides a selection of 4 custom, user-definable curves. Click this menu to select one of these Target Curves:

Custom 1

Custom 2

Custom 3

Custom 4

These user-definable curves reflect the settings of their corresponding selections in the EDIT page of the plug-in.

NOTE: Switching between custom target curves takes a few seconds the first time a curve is loaded. This is necessary for ARC 3 to load the corresponding file, and a spinning wheel will appear at the top left corner of the graph indicating the loading status.

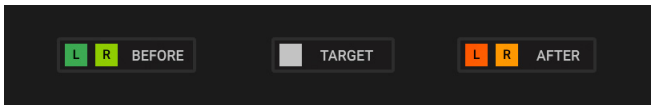
5.1.4 – Virtual Monitoring Feature

For a fast and convenient check of how your mix translates in various “real world” conditions, we’ve provided a brand-new set of alternative speaker and device responses which are listed in the Virtual Monitoring menu. These additional curves are real frequency responses of professional and consumer devices (famous studio speakers, TV sets, car audio, desktop and laptop speakers, etc.) which will let you audition how your mix translates with many different speakers.

Since the sonic signature of those alternative systems is played over a perfectly calibrated system with ARC 3, the result will be like mixing in a transparent and balanced room with different speakers. Anyway, please note that while these curves provide some real-world confidence and are useful for quick checks, we stress the fact that you should always refer to the Virtual Monitoring for the truest accuracy and highest fidelity of the correction during your recording or mixing work.

5.1.5 – Frequency Response Graphs

The ARC 3 Plug-In shows two frequency response graphs, one for the left channel and one for the right channel. Each frequency response graph is individually selectable by clicking on the colored tiles above the graph and shows the three color-coded curves.



GREEN CURVE (Before): This represents the original measured speakers / room frequency response.

ORANGE CURVE (After): This represents the corrected speakers / room frequency response.

WHITE CURVE (Target): This represents the selected Target Curve. The target curve is by default a FLAT curve. You can see that it is actually flat from 20 to 20,000 Hz. If one of the Custom Curves is used, this line will display its settings. Analyze these graphs to understand where the correction curve is applied.

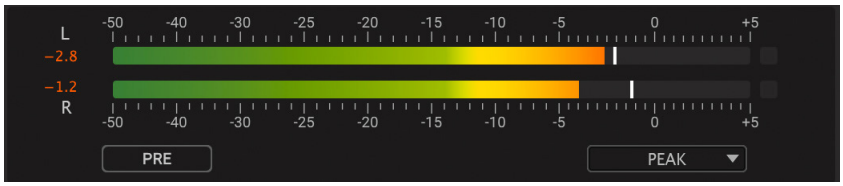
RTA: ARC 3 Plug-in provides a real-time analyzer which can be activated or deactivated by pressing the RTA button on the top right corner of the graph. The real-time spectrum analyzer shows how your music was interacting with your room before correction, showing you how the room was affecting the sound. For a smoother experience and less CPU load, we recommend keeping this option turned off during intensive-CPU sessions.

5.1.6 – Speaker Icons

The ARC 3 Plug-In shows the speaker icon that has been chosen when the analysis was saved in the ARC 3 Analysis application. This is useful to identify and recall the measurement sets already taken and their association with a real speaker model. Note that the speaker icon selection is just a mnemonic aid and does not interact with the sound of the ARC System 3 in any way.

5.1.7 – Meter Options

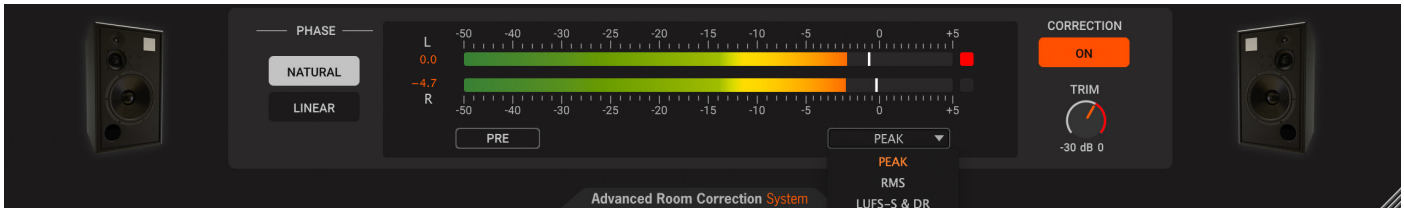
This precision Meter shows the INPUT level (unprocessed) or OUTPUT (processed by the ARC 3 Plug-in).



On the Meter, click PRE to check the unprocessed input signal level. This mode is very useful to keep the actual stereo master level of your project under control. Remember that ARC 3 is changing the stereo master peak level, so the DAW output meters will not show the actual real level anymore. Use the ARC 3 Meter in PRE mode to monitor the actual project level.

On the Meter, click POST to check the ARC 3 processed signal level.

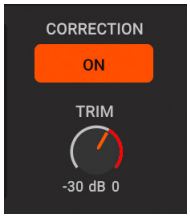
Also, Derived directly from the world acclaimed T-RackS 5 metering, this high-quality metering section offer PEAK, RMS, Loudness (LUFS) and Dynamic Range (DR) indications for both the PRE and POST processing signals. Click on the metering options button as showed in the figure.



5.1.8 – Correction ON switch and TRIM knob

To enable the correction, click the CORRECTION ON switch. When it is lit, the correction is active.

TRIM knob: The TRIM knob affects both the corrected and uncorrected sound so you can use it to compare the “before” and “after” monitoring at an equal loudness. We have worked to implement a system that allows the Trim control to detect the maximum boost level in the correction filter. Thanks to this, every time you edit parameters that affect or alter the filter correction, or every time you select a new measurement set, the Trim will provide a dynamic red band to indicate the level above which you should not exceed. Each time the filter is re-calculated, the dynamic red band will update accordingly.



The TRIM knob has a range from -30 to 0 dB and the default position when opening the ARC 3 Plug-in is the point of intersection between the grey band and red band, which is the middle position just before you go risk clipping.

5.2 – Edit Window

The new ARC System 3 correction plug-in allows for more flexibility and superior sonic results when compared to previous versions.

You can use the controls in the Edit window to adjust the correction to your personal taste by using Lo/Hi Range controls, variable resolution (or Smoothing), Linear or Natural phase options, or dragging the 6 breakpoints in the graphic for gentle tone-shaping while still getting all the benefits of the ARC 3 correction.

Using the 6 breakpoints in the graphic will not alter the correction ARC 3 has applied to your monitoring setup (as you might think at first glance). It will instead allow for more tonal options to suit your listening preferences.

5.2.1 – Using the breakpoints on the graphic

Drag these breakpoints on the X/Y axis to boost or cut at the desired frequency.

The maximum range is +/-6dB. To reset the dots to 0dB, press them while clicking Command on macOS or Ctrl on Windows.

5.2.2 – Target Curve Custom 1-4 buttons

These buttons select the user-defined Custom Curves.

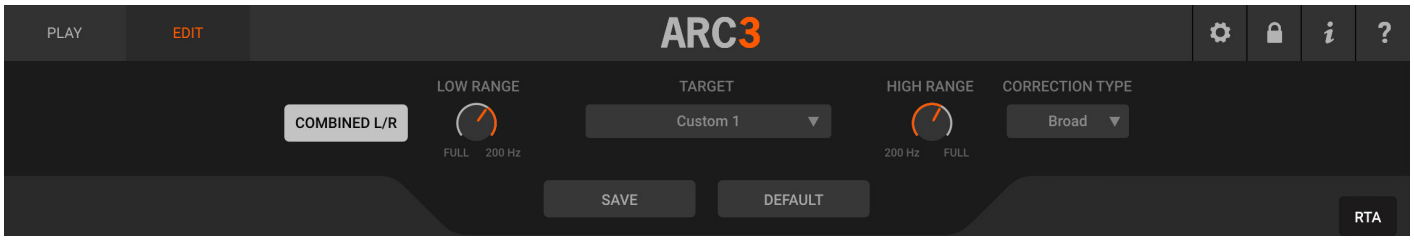
You can use these customizable settings to adjust your personal listening preference or to better suit different program material. These curves will retain the chosen settings after the “Save” button has been clicked (see below). The corresponding frequency response will also be shown in the “Play” window graphs.

5.2.3 – Save button

Once you have defined your Custom Curve, you can use this button to apply it and listen to the effect it has on your monitoring. The Save button will also store all the other edit parameters in your Custom Curve except for the Trim and Phase Options.

5.2.4 – Default button

Use this button to reset the graphic curve to its standard flat state .



5.2.5 – Combined L/R Correction

Sometimes when the ARC 3 correction is applied, you might notice a slight loss of focus in the stereo image particularly with elements panned dead-center in a mix. Even though the benefits of the correction are greatly effective, this loss of focus can be caused by some anomalies in the room geometry, speaker positioning within the room, or even by a less-than-perfect accuracy in the analysis positions.

This can be solved by using the “Combined L/R Correction” function.

When this option is selected, ARC 3 will average the correction among the L/R channels and then apply it symmetrically to the two channels to effectively restore the correct stereo image from any anomalies in the monitoring.

5.2.6 – Low Range and Hi Range Correction

The correction is by default applied to the whole spectrum.

However, it is possible to limit the range where the system applies the correction on both sides (Low and Highs) of the spectrum. This is an especially useful feature to retain the voicing of the monitors when this is preferred, still being able to correct the issues generated by the room at low frequencies.

ARC System 3 goal is to achieve the most accurate room correction possible automatically, however we suggest checking both options after various listening tests to match the preferred low and high frequency performance.

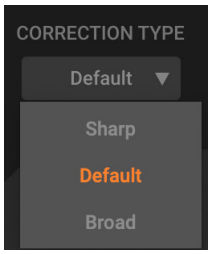
Move the Low and Hi Range knobs, and the two corresponding lines on the graph will move accordingly.

5.2.7 – Correction Type (or Variable Resolution)

The default setting of ARC 3 will work fine in most cases, however not all rooms react the same to the correction process. With this control, the system offers the possibility to adjust the resolution of the correction filters smoothing, allowing the intervention to be more narrow-band and selective or smoother and more broadband.

This has a subtle effect, but sometimes details make a big difference in monitoring, and this allows the user to manually set the final detail of the automated process to perfectly match the results to personal preference.

From the drop-down menu, select the Default, Sharp or Broad option, and choose your preferred one by listening the results on the correction.

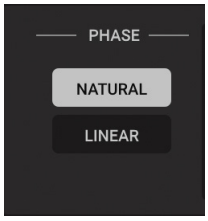


5.2.8 – Natural/Linear Phase options

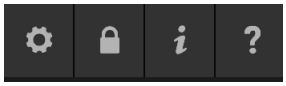
Left and Right channels phase coherency is crucial for a quality monitoring system, but sometimes speakers are installed in a less-than-ideal symmetrical arrangement in the room. This can cause severe phase misalignment, especially at low frequencies, between the left and right channels, making it impossible to mix properly (aside from being a less-than-pleasant condition for listening).

NATURAL mode improves the phase coherency between the L and R channels, recovering a better center ghost-image that might be compromised by the effects the room has on the sound, especially at low frequencies. This is the default and preferred mode for most applications.

LINEAR mode is a special correction mode where the original phase response of the speakers' system is maintained unaltered. In certain cases, this mode can be preferable for even better transparency. However this mode adds a little bit of latency, around 50 milliseconds.



5.2.9 – Top Bar options



GEAR ICON: Interface brightness. Here you can set the brightness of the ARC 3 interface.

LOCK: If you are running the software in demo mode and you click the LOCK button, the Authorization Manager will appear. However, if you already registered and authorized your product, clicking the LOCK button will simply show you the product serial number.

INFORMATION (INFO): By clicking the INFO button, the credit interface will be displayed. Here you can check the version of your ARC 3 plug-in. Clicking the Close button on the credit interface will close the credits and return you to the normal view.

HELP: Click the "HELP" button to open the .pdf manual.

KEYBOARD MODIFIER: To reset the ARC 3 plug-in knobs to their default values, click them while holding the Command key on macOS or Ctrl on Windows.

5.3 – Opening the ARC 3 Plug-In in your DAW

The ARC 3 plug-in is a "stereo-to-stereo" processor that should be inserted on the stereo master bus of your audio sequencer or digital audio workstation.

The ARC 3 plug-in should remain inserted and active on the stereo master bus during the entire recording, mixing and mastering processes. **But then just before printing the final mix to a file or to an external recording device, it must be turned OFF.**

This is because the ARC 3 plug-in is used to correct the monitoring/room system response. It is NOT intended to process the actual mixdown of your project.

A few DAWs support a dedicated monitoring bus where you can insert plug-ins. In this case, the ARC 3 Plug-In should be inserted on the monitoring bus instead of the stereo master bus so that the ARC 3 Plug-In will not affect the actual mixdown of your project even if you don't turn it OFF before printing the mix.

Each DAW has its own criteria for how to use aux tracks, monitoring bus, master tracks/faders, etc. Therefore, these suggestions for how to start ARC 3 in several host applications are just a starting point, a guideline. For example, if your session already has a master track, you do not need to create another one. Just insert ARC 3 as the last plug-in. We recommend that you read your DAW manual chapters specifically related to outputs, monitoring bus, master tracks, routing configurations, etc.

Considering that DAWs are constantly updated, please refer to their User Manuals to learn how to insert ARC 3 as a plug-in.

The ARC 3 Plug-In is compatible with VST, VST2, AAX and Audio Units plug-in formats on both (where applicable) Windows and macOS platforms. Please refer to the Installation and Authorization Manual for further details.

5.4 – Using the ARC 3 Plug-In

Before using the ARC 3 plug-in, be sure you have already saved one or more measurement sets so that you can load them in the plug-in, otherwise you will be prompted with an alert dialog which will remind you to close the DAW and open the ARC 3 Analysis application in order to complete your first Analysis

Open your DAW.

Create a new session or open an existing one.

Open the DAW audio mixer and locate the stereo master bus. If you are using Pro Tools and your session does not have a stereo master bus yet, please create one.

Load the ARC 3 Plug-In as the LAST processor on the stereo master bus.

From the measurement's menu, select one of your saved measurement sets.

Click the Correction ON Switch. When it is lit, the correction is ON.

If you are using mastering processors (like T-RackS), be sure to insert the ARC 3 Plug-In AFTER all the other processors. The ARC 3 Plug-In must always be the LAST one in the processing chain.

If your master level is really hot, (very close to 0dB), be sure to not overload the stereo master bus with the ARC 3 processing.

If clipping occurs when checking the ARC 3 Peak Meter in POST mode, use the TRIM knob to lower the level. Keep the ARC 3 Plug-In inserted on the stereo master bus throughout the entire recording, mixing and mastering process.

IMPORTANT: Switch the ARC 3 Plug-In OFF before bouncing the project to a disk file. Your final mix should NOT include the ARC 3 processing because it is designed for MONITORING use only.

5.5 – Suggestions for the best ARC System 3 usage

You are probably used to how your studio acoustics sounds and already know how to use ARC.

Just use this information as reminder, and please follow these suggestions to enrich your listening experience while using the ARC System:

Use audio material you know are very familiar with to evaluate the new way your studio sounds.

Always give yourself time to get used to the new sound. Do not judge the corrected system by only listening for a minute or two. Always give yourself enough listening the time to understand how different the room is sounding.

Do not change between various measurement sets or turn the correction ON / OFF too often. Your listening process needs to get used to it. It is like when your eyes need some time to adapt to a very different lighting condition such as going out of a dark room into bright sunlight.

After you select the best measurement set, you will start using the ARC System 3 without even thinking it is there. It is really a “set and forget” tool that will really help you to mix faster, better, and achieve greater consistency with your artistic projects.

Chapter 6 – Frequently Asked Questions

6.1 – Room Analysis

Can I use previous room-measurements I made with previous versions with ARC 3?

No. Room measurements taken with ARC 1 or ARC 2 are not compatible with ARC 3.

The advanced algorithm in ARC 3 needs more info from the room acoustics that were not captured with the ARC 1 or 2 measurement process.

What is the best microphone to use with ARC 3?

To get the best possible results in terms of accuracy you should use the ARC 3 MEMS Microphone.

With this mic ARC 3 ensures a precision within +/- 0.5dB, which is a quite remarkable level of accuracy!

It's the best investment you can do for your studio, it's a reasonably priced microphone, and it offers a great stability with time and temperature, so it will always deliver the same reliable results over years.

Are the older ARC microphones (silver metal models) still good for ARC 3?

With normal "recording" microphones the accuracy of the frequency response down to the dB or fraction of dB is not that crucial, but for measurement microphones it's a fundamental aspect.

There were two models of the original ARC condenser microphone, one with an orange ring at its base, one without; the first model is from 2007 and it's the one without the orange ring.

Condenser microphones tend to vary their response with environmental conditions and with age.

In 2009 that mic was replaced with the second model (with the orange ring) to improve the stability with time and temperature.

So, if you own one of the original ring-less microphones that was sold between 2007 and 2009, while you can for sure use and see the results, there are chances that its reliability is not great at today (11+ years later), making the precision of the ARC 3 correction less accurate.

The second model was more stable, but even that one is surpassed in terms of precision and stability with environment and age by the ARC 3 MEMS microphone.

So, if you're after a great level of accuracy from your monitoring system, make sure to use the ARC 3 MEMS microphone for the room analysis phase.

I have seen that ARC 3 support 3rd parties "measurement microphones". What exactly is a measurement mic and what is a microphone calibration file?

Measurement microphones (also called RTA mics, room analysis mics) are particular microphones normally not suitable for recording. They are true omnidirectional microphones with an exceptionally flat frequency response used for taking acoustical measurements in spaces. They normally have a very thin and long body shape in order to minimize the impact of the mic body on the linearity of the frequency response. Measurement microphones are very linear ones, however they're not *perfectly* linear. For this reason, most manufacturers provide a "microphone calibration file", sometimes also called "ECF", usually in a text format (.txt file). This file describes the response of the mic, so that it can be loaded into the software that will compensate for it, making the microphone to behave as if it was perfectly linear.

I have recording condenser microphone that can be set to “omni” and has a remarkably flat frequency response. Can I use it with ARC 3?

No.

Normally these microphones are not neutral enough and their polar pattern is not “omni” enough to provide good results in measuring room acoustics.

This said you can always give it a try, if the ARC 3 correction will sound balanced and neutral the mic was fine for the application, however we strongly suggest avoiding this.

Is it mandatory to load calibration files for the generic measurement microphone option?

No, you can use any measurement microphone even without loading the calibration file.

However, the accuracy in that case will strongly depend on the linearity and overall quality of the mic.

Instead, when loading a calibration file, any issue on the microphone frequency response will be addressed by the calibration, providing more reliable results.

Is the accuracy of the mic positioning during measurement affecting the quality of the results?

Don’t tape your floor, that’s not needed!

The positioning indications given on the ARC 3 Analysis application during the process are explicative on where the mic should be positioned.

No absolute indications are provided because they are not needed, the mic should be placed approximatively on those spots, really hand-placing the mic stand approximatively at those spots will do.

The quality of the results will only be affected if you place the mic a lot differently than what’s illustrated onscreen at the various steps.

Should I use a mic stand for the measurement process?

Yes!

It’s very important that the mic is as steady as possible and stable during each single measurement spot recording. If the mic moves even a little bit during the recording of each individual point, the results will be compromised.

Also, there should be nothing moving in proximity to the mic, to the speakers, or between the two while these points are recorded.

Can I stay in the room while the Analysis process is recording each point?

Yes, but try to keep yourself outside the listening spot and not too close to the microphone or to the speakers to avoid sound reflections that can compromise the reading.

Should I keep doors and windows closed while analyzing the room?

Door and windows have a big impact on the frequency response of the room, so they should be in the same state they are when you normally work. If your studio door is normally open then measure up the studio with the open door, and vice versa.

What is the best playback level I should set my listening level to when measuring the room?

Set the listening level so that, when the ARC 3 Analysis application play the test signal, you get a loudness in the room similar to the one you have when working normally.

There is a considerable level of background noise in my studio, can I measure the room reliably?

In this case you will need to rise the listening level during the measurement process in order to get to a decent signal-to-noise ratio during the recording of the points.

Can I experiment with different mic positioning with respect to those indicated by the Analysis application?

We suggest starting with the pattern of points that are indicated by the Analysis application and to stick with them. However, once you are familiar with the results, you can for sure experiment with different positioning.

The main concept to keep in mind is that the system optimizes the monitoring system in the area where the measurement points are taken. For example, you can experiment in taking the 7-points per layer in a narrower or wider spot, and so on.

I have a 2+1 system that includes a subwoofer, how should I measure the room?

If the subwoofer is handling the crossover and feeding the main speakers, or if you are using an external crossover the system will be seen as a normal 2 channels setup, so you can use ARC 3 without any issue.

ARC 3 will also adjust the level of the LF range matching it perfectly with the main speakers.

Is the quality of the audio interface and mic preamp used for the room analysis important for the results accuracy?

Generally speaking, yes. Anything wrong that might happen during the room analysis process will translate to the response of the final system. The interface used for analysis should at least have a flat frequency response (+/-0.5dB) up to 20 kHz and down to 20Hz and be able to operate at 48 kHz. Clean preamplifiers are preferred for this process. If possible, try avoiding using tube preamps for the measurement mic, vintage ones or ones that adds to much harmonics/coloration to the sound as this will affect the accuracy of the results.

6.2 – Processing Plug-in

How should I use the correction plug-in in my DAW?

The correction plug-in should be inserted on the stereo master bus of your project or, when this is available, on the monitoring bus of the DAW. Unless your DAW allows for inserting the plug-in on a monitoring bus, remember to ALWAYS switch-off the ARC 3 plug-in before exporting / bouncing / rendering the program from the DAW. The ARC 3 plug-in should always be the last plug-in in the chain on your master bus. If you use master-bus processing like EQ, compression, limiting and so on, make sure the ARC 3 plug-in always comes after those.

How much latency is the ARC 3 plug-in adding to the system?

The ARC 3 correction plug-in can work in two phase modes: NATURAL and LINEAR. NATURAL has a latency of 64 samples, LINEAR has a higher latency of 2100 samples.

Chapter 7 – Troubleshooting

Where can I find my IK product Serial Number?

The Serial Number is written on the Registration Card (included with your IK product) or in the email you received from DigitalDelivery@ikmultimedia.com (if you purchased the product as 'Downloadable only version').

IMPORTANT: the number zero can easily be identified in your Serial Number because it is crossed by a line.

Why is the Authorization Manager rejecting my Serial Number?

Probably because of a typo, here are some common errors:

- Typing a 0 ("zero" number) instead of an O ("o" letter).
- Typing 1 ("one" number) instead of an I ("i" letter).
- Typing 2 ("two" number) instead of a Z ("z" letter).
- Typing 5 ("five" number) instead of an S ("s" letter).
- Typing 8 ("eight" number) instead of a B ("b" letter).
- Typing a "." (point) instead of a "-" (minus).

Suggestions:

- If possible, please copy and paste the information.
- Cut off all the leading and trailing spaces.
- Please type all codes in UPPERCASE during the installation and registration process.
- Check that the Serial Number that you are entering is in correlation with the product installed.

How can I authorize my product on another computer?

To authorize your product on another computer just follow these instructions:

- Install the product and the Authorization Manager on that computer
- Run the Authorization Manager

I need to log in into the User Area but I forgot my User Name and Password. What should I do?

You can retrieve your User Area login details in two different ways:

- Run the Authorization Manager and follow the steps until you reach the login page. Here you just have to click on the 'Forgot password?' button and submit your email address. Your login details will be sent to your email account. In case you have checked the 'Remember me' checkbox before and are not able to access the login page, just click on the LOGOUT button.
- Go to www.ikmultimedia.com, click on 'I forgot my username and/or password' and submit your email address. Your login details will be sent to your email account.

I just bought an IK Multimedia software. What should I do to register and authorize my new product?

Just run the Authorization Manager and follow the instructions.

In case you don't have the Authorization Manager, you can download it for free from the Products page of our website at:

www.ikmultimedia.com/am

While analyzing the room, I get error messages from the ARC 3 Analysis application related to the low signal and high background noise. As a result, I can't complete the analysis process. What should I do?

Quiet down the room as much as possible or increase the test tones playback level during the analysis process. Also, check the microphone level again and repeat the capture.

While analyzing the room, I get "phase" errors from the ARC 3 Analysis application.

Please check your speakers wiring. If the speakers are passive, check the polarity of the leads going from the amps to the speakers. If the speakers are active, check the XLR or TRS cables connections and polarities.

When I open the measurements set on my ARC 3 Plug-In and turn the Correction ON, the resulting sound and the displayed response is strange and incorrect, making the monitors sound worse than when ARC 3 Plug-In is not enabled. Do you have any suggestions?

Be sure that your audio interface is set to 48 kHz when running the ARC 3 Analysis application. Also, check your audio interface buffer size settings. For a proper analysis, it should be set from the minimum supported from the hardware (best option) to 2048 samples.

I am trying to set the microphone levels on the ARC 3 Analysis application. However, even if the test signal is being played back from the speakers, I cannot see any level. What should I do?

Please check which audio input has been selected on the ARC 3 Analysis Application Audio Setup page, if the +48V phantom power is ON, and if the XLR cable is properly connected, (eventually, check if the cable is in good condition).

When I open the measurements set on my ARC 3 Plug-In and turn the Correction ON, the resulting sound is not optimal, and I don't feel it is correct for my monitors and for my room.

Please read carefully the ARC System 3 User Manual (Chapters 3 & 4), and repeat the analysis process.

When I open the measurements set on my ARC 3 Plug-In and turn the correction ON, the resulting sound and the displayed response is strange and incorrect, making the monitors sound worse than when ARC 3 Plug-In is not enabled. Do you have any suggestions?

Please check if the measurement microphone is working, by connecting the microphone to a +48V phantom microphone preamp and listening to it through headphones. The microphone should exhibit a neutral, clean sound. If the microphone is not working, producing loud noises, or having a very weak output signal, please contact IK Multimedia Technical Support.

Chapter 8 – Support

For any questions you may have, please refer to the FAQ webpage at: **www.ikmultimedia.com/faq**
Here you will find answers to the most commonly asked questions.

To submit a Technical Support Form, go to: **www.ikmultimedia.com/support**

For other requests such as Product, Sales, or Web info, please go to: **www.ikmultimedia.com/contact-us**

8.1 – User Area

The User Area is a special section of our website specifically designed for our users.
Here you can easily edit your personal data, manage your product authorizations and licenses, and download the latest IK products updates.

Access your User Area to be able to:

- Edit your Personal data.
- View and download the latest product updates, free content, and Sound Libraries.
- Access any current Promotions.
- View exclusive offers and pricing.
- Manage your earned JamPoints.
- View your Orders.
- Download firmware and hardware drivers.
- Access the IK Forum and more.

To access the User Area go to:
www.ikmultimedia.com/userarea

To access your User Area, please login with your User Name and Password created upon registration and emailed to your registered email address. If you need to update your Password, you may do so at the User Area login.

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