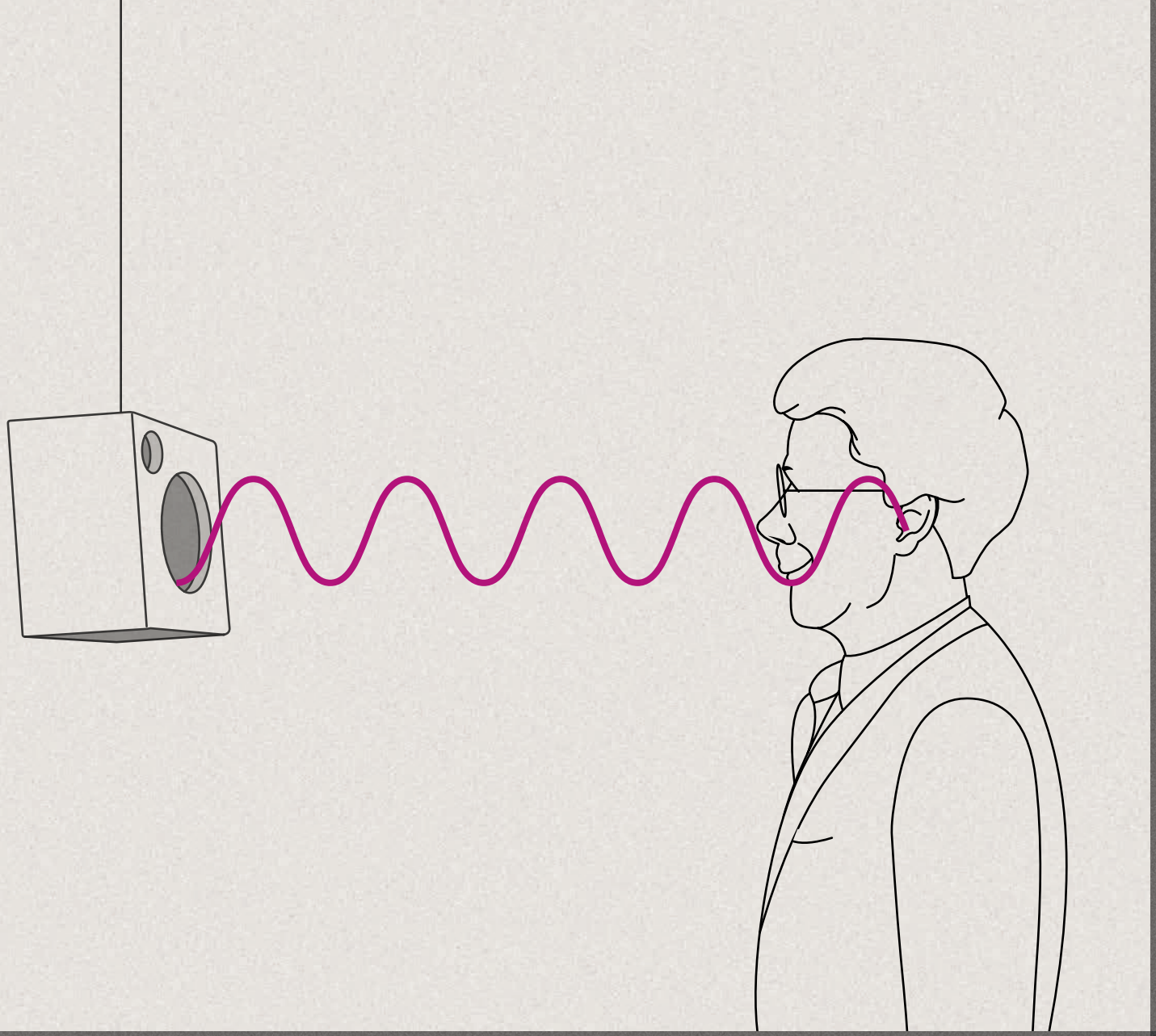

# REM AutoFit Quick Guide

**How to match REM targets in under 2 minutes**

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# REM AutoFit Quick Guide

How to match REM targets in under 2 minutes

**What is REM AutoFit?**

REM AutoFit is a tool in Genie and Genie 2 that allows you to match real ear targets automatically. This makes the real ear measurement (REM) process more efficient whilst ensuring that you maintain quality and control over the fitting. This gives the client a more comfortable fitting experience and it saves valuable time for you. In a new development, REM AutoFit now offers speech mapping as an alternative to the existing gain-based verification.

This guide provides step-by-step support through the REM AutoFit process to allow you to perform quick, efficient and accurate REMs.

**Why do audiologists perform real ear measurements?**

The main reason is to verify that speech sounds are audible for the client. Ensuring that targets for a chosen rationale are being met is a good starting point for a new fitting. Real ear measurements (REMs) must therefore be consistent, reliable, repeatable, and correct.

## Before using REM AutoFit


Before using REM AutoFit, ensure you have:

- Installed an IMC 2 compatible REM module (e.g. Interacoustics, MedRx or Otometrics). See www.himsa.com for IMC-compliant module versions.
- NOAH 4.5.1 or later
- Selected the appropriate IMC 2 compatible REM module and Measurement Protocol (insertion gain or speech mapping) in Preferences*
- Connected the hearing aid(s)
- Up-to-date hearing aid firmware. If necessary, use Firmware Updater (Genie 2 only)
- Connected and switched on your REM equipment. Close the REM software if it has already been opened.
- Selected the acoustics (venting, tubing, earpiece/dome) and power levels in Genie/Genie 2 which match those of the hearing aid. Note: It is recommended to use the dome or earmould prescribed by Genie. If the selected acoustics are too open, gain may be limited due to the risk of feedback. If this occurs, change to a less open option before launching REM AutoFit.
- Performed a feedback analysis (strongly recommended)
- Selected fitting rationale
- Set up program linking as desired. REM AutoFit sets the program to P1.

* in Preferences > Edit Preferences > Customise Software > Measurement Modules (these preference is saved for future fitting sessions)

## Hearing aid settings during measurement

The following controls are set automatically during REM AutoFit measurements and restored to their original states afterwards, except for Overall Loudness (Super Power instruments only) which stays on 0.

| | **Genie 2016.2 or later** | **Genie 2 \| 2016.2 or later** |
|---|---|---|
| Noise Management | Current setting in Automatics | Current setting in OpenSound Navigator |
| Feedback Manager | On | On |
| Adaptive Directionality | Off | Off |
| Adaptation Manager | 3 | 3 |
| Overall Loudness (Super Power Instruments only) | 0 | N/A |
| Speech Rescue | Off | Off |

## Step-by-step Guide

On the **Fitting** step in Genie/Genie 2, enter the **REM** tool from the **More Tools** menu in the left taskpane. Launch REM AutoFit from the bottom of the REM tool.

## Step 1: Calibrate

It is necessary to calibrate the probe tube before measurement.

a. Align the probe tube(s) with the reference microphone(s) and hold approximately 0.5 m from the loudspeaker. Check the REM system's guidance on acceptable distance.

b. Click **Start** on the relevant side to measure one side. To calibrate both sides, click **Both**. Depending on the REM system, binaural measurement may take place simultaneously or sequentially.

c. The system automatically turns off the signal when the calibration is complete. If you need to stop the calibration prior to completion, click **Stop**.

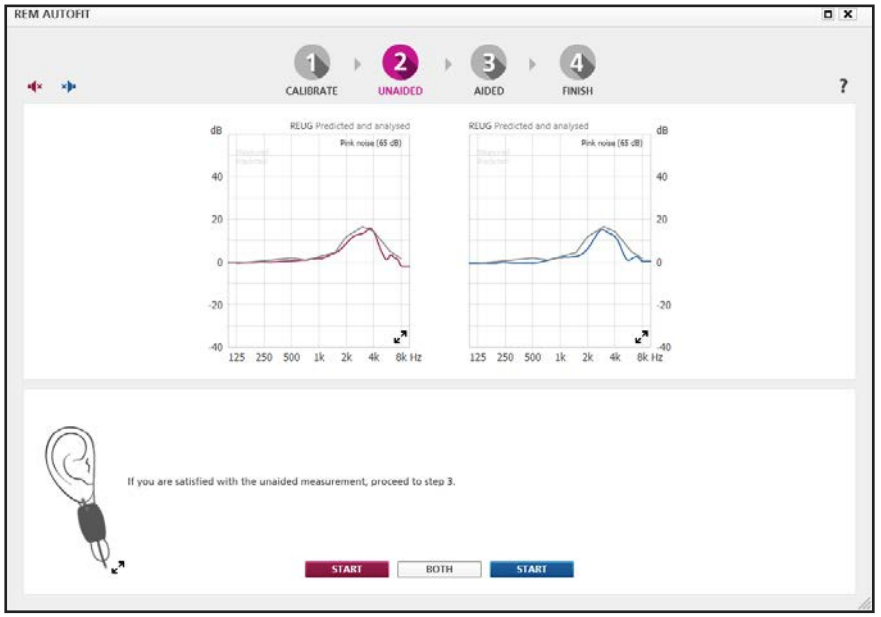
d. The result of the tube calibration is displayed on the graphs.

e. Repeat these steps for each new probe tube.

f. When you are satisfied with the calibration, proceed to **Step 2**: **Unaided**. If you are performing speech mapping, you can proceed to Step 2: Unaided or skip forward to **Step 3: Aided**.

## Step 2: Unaided

Perform an otoscopic examination of the ear canal prior to doing REM to ensure no excessive wax or other contraindications.




Note that **Step 2: Unaided** is mandatory if you have chosen insertion gain as the measurement protocol and it is optional if you have chosen speech mapping. This is because REUG is not required for aided response measurements. For speech mapping, this step can be used if you want to use REUG to check probe tube positioning.

a. Position the client in front of the loudspeaker at the distance recommended by the REM system (usually 0.5-1 m). Instruct the client to remain still during each sequence of measurements.

b. Place the probe tube in the client's ear canal. The recommended insertion depth of the probe tube is 5 mm from the tympanic membrane and a minimum of 5 mm beyond where the sound outlet of the instrument will be positioned for the aided measurements in **Step 3: Aided**.

c. Verify the probe tube placement in the ear canal by performing otoscopy.

d. Click **Start** on the relevant side to measure one side. To calibrate both sides, click **Both**. Depending on the REM system, binaural measurement may take place simultaneously or sequentially.

e. The system automatically turns off the signal when the measurements are complete. If you need to stop the measurement prior to completion, click **Stop**.

f. Ensure that the unaided gain at 6 kHz intersects the x-axis at approximately 0 dB (+/- 5), if possible. If it does not, reposition the probe tube. The grey curve that is already shown is a predicted REUG.

g. If you are satisfied with the unaided measurement, proceed to **Step 3: Aided**.

**Note**: if REM AutoFit (insertion gain) adjustments are subsequently applied to the fitting (in Step 4: Finish), the unaided measurement (REUG) is saved to the REUG tool and will overwrite any previous REUG. If REM AutoFit is discarded or exited prematurely, the unaided measurement is not saved.

## Step 3: Aided

REM AutoFit handles open fit calibration automatically. There are two ways of performing real ear aided measurement sequences: **Automatic** and **Manual**. This can be selected using the tabs below the right ear graph.

Insert the hearing aid carefully in the client's ear without moving the probe tube (mute the hearing aids during insertion if necessary).

## Automatic

When you run a measurement in the **Automatic** tab, the fitting software measures the current hearing aid gain/output, automatically adjusts it towards the prescribed target (whilst taking into account the limitations of the instrument and the acoustics) and then performs another measurement to confirm the target match.

a. The automatic measurement process is carried out at 65 dB by default and you can select additional levels (50 dB and 80 dB). Gain adjustments at all levels are based on the 65 dB measurement.

b. Instruct the client to face the loudspeaker and to remain still during each sequence of measurements.

c. Click **Start** on the relevant side to measure one side. To measure both sides, click **Both**. Depending on the REM system, binaural measurement may take place simultaneously or sequentially.

d. The system automatically turns off the signal when the measurements are complete. If you need to stop the measurement prior to completion, click **Stop**.

e. If you are satisfied with the measurements, proceed to **Step 4: Finish**.

f. If you want to make further fine-tuning or measure MPO, you can proceed to **Manual**.


Insertion gain on Step 3: Aided (Automatic)


Speech mapping on Step 3: Aided (Automatic)

## Manual


Insertion gain on Step 3: Aided (Manual)
– Manual is also available for Speech mapping

The manual process in REM AutoFit lets you fine-tune the hearing aid gain to get even closer to target or to personalise the fitting based on the client's own comments. This can be done after or instead of the automatic process.

a. Select the desired measurement input levels: 50, 65 or 80 dB.

b. If there is a previous measurement displayed from **Automatic** or **Manual**, use the fine-tuning controls to fine-tune the gain based on the measurement.

c. Instruct the client to face the loudspeaker and remain still during the measurement sequence.

d. Click **Start** on the relevant side to measure one side. Click **Both** to measure both sides. Depending on the REM system, binaural measurement may take place simultaneously or sequentially.

e. The system automatically turns off the signal when the measurements are complete. If you need to stop the measurement prior to completion, click **Stop**.

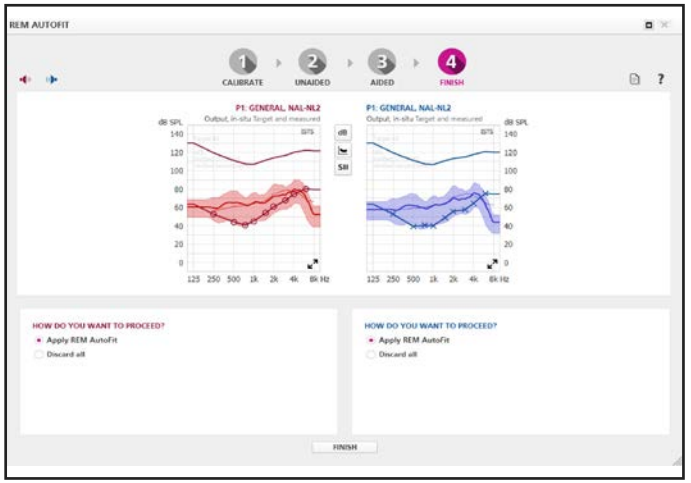
f. If you are satisfied with the aided measurements, proceed to **Step 4**: **Finish**.

g. To further fine-tune the gain, repeat points b-f.

## Step 4: Finish

The graph now displays the hearing aid gain measured in your client's ear, and you can apply the adjustments from **Step 3**: **Aided**. The graphs and the instruments update according to what you select, so you can demonstrate each option to the client.


Insertion gain on Step 4: Finish




Speech mapping on Step 4: Finish

Select **Apply REM AutoFit** to apply automatic adjustments. REM AutoFit data measured in previous fittings will be overwritten.

Select **Discard All** to discard REM AutoFit adjustments. The data in use before you entered REM AutoFit is then restored.

## Removing measured real ear data

If you no longer want to use REM AutoFit adjustments based on insertion gain and want to use the predicted data instead, do as follows:

1. Leave the **REM** tool if it is open.
2. Go to the **Hearing Instrument** menu on the menu bar and select **Remove REM AutoFit Results**. This option is only available if REM AutoFit corrections based on insertion gain are in use.

If you no longer want to use REM AutoFit adjustments based on speech mapping and want to use predicted data instead, go to the Hearing Instrument menu on the menu bar and select **Represcribe** settings...
If you also want to remove Unaided measurement data, do as follows:

1. Open the **REUG** tool in the **Selection** step.
2. Change REUG to predicted or delete REUG data.

## Print

In **Step 4**: **Finish**, you can print the measurements according to your current on-screen selection. To print after you have closed the REM AutoFit tool, you can go to the Genie/Genie 2 top menu and click **Print**.

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