DIRECT SOUND RECORDS

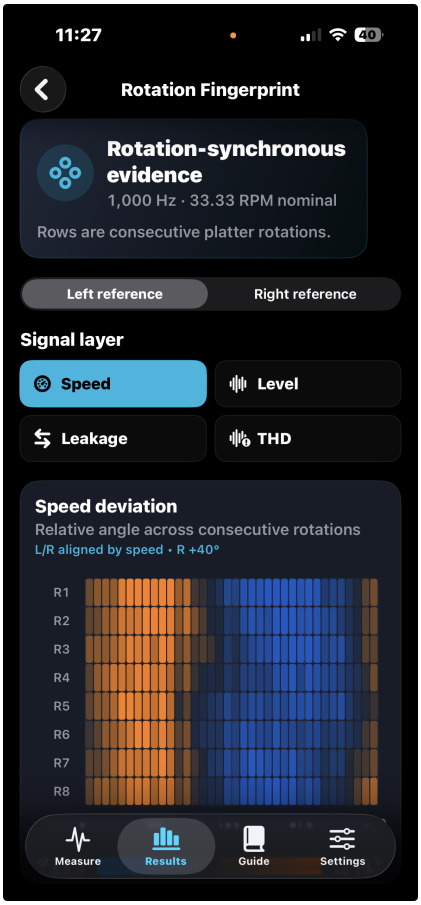
Groove Scope

Illustrated getting started guide

Groove Scope for phones

Connect your turntable, capture the 1 kHz references and learn to read the results. Keep this guide on screen or print a copy to use beside your playback system.

An illustrated walkthrough of the stereo 1 kHz measurement. This edition is not the Groove Scope Studio manual and does not describe every test available across different versions.



Review draft 0.2 | 31 October 2026

Find what you need

02 What to buy

03 Connect ART or EVO4

04 Check input and levels

05 Capture left and right

06 Read the summary

07 Interpret distortion and azimuth

08 Explore Rotation Fingerprint

09 Find and share measurements

10 Compare two adjustments

12 Solve common problems

13 Checklist and references

Original English screenshots published on the DSR website. Button names follow those images. The layout may change with app updates.

What you need to get started

You need Groove Scope, a compatible phone, a test record and a USB audio interface providing two simultaneous input channels. The signal arrives through a cable: the phone microphone does not replace the interface.

Feature	ART USB Phono Plus PS	Audient EVO4
Connection	Directly to a turntable with a compatible MM cartridge, or to a phono stage.	To the LINE output of a phono preamplifier.
Analogue inputs	Stereo RCA pair. Select PHONO or LINE.	Two 6.35 mm LINE inputs, one per channel.
Cables from a phono stage	A standard pair of RCA cables.	RCA to 6.35 mm jack leads for the TRS inputs, wired for an unbalanced source.
Main use	A practical solution focused on the turntable signal.	Also with Room Reference, DSR software for room analysis and loudspeaker positioning, using a measurement microphone.

Tested interfaces and compatibility

DSR has tested the ART USB Phono Plus PS and Audient EVO4. The software can work with any class-compliant USB audio interface recognised by the phone and providing two simultaneous inputs. Check connectors and power requirements.

Two alternative test records

Use either the Ortofon Test Record or The Ultimate Analogue Test LP by Analogue Productions. The separate L/R 1 kHz references are tracks 5 and 6, repeated as 7 and 8, on the Ortofon; side 1, tracks 2 and 3, on the Ultimate. Follow the pair requested by the app.

Other tracks with Groove Scope Studio

Groove Scope Studio also captures and analyses the other measurement tracks on the Ortofon Test Record and The Ultimate Analogue Test LP, through dedicated workflows for supported signals. This guide covers the stereo 1 kHz workflow in Groove Scope for phones.

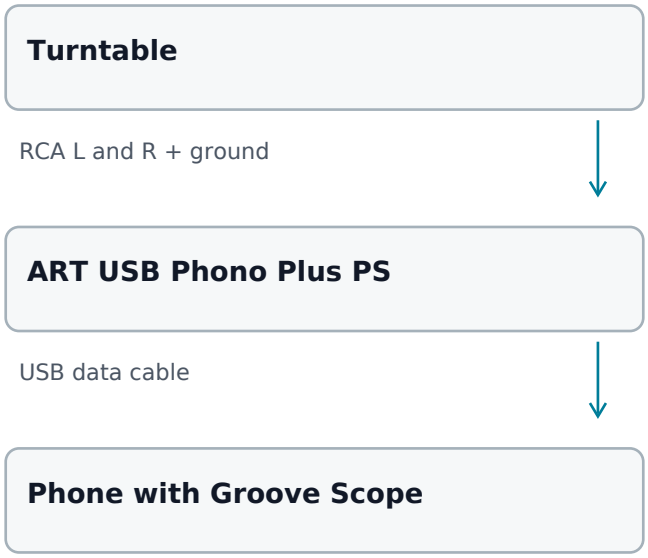
USB connection

Use a USB data cable and an adapter suitable for your phone. Lightning phones need a compatible adapter. If extra power is needed, use a powered hub or the power supply specified by the manufacturer.

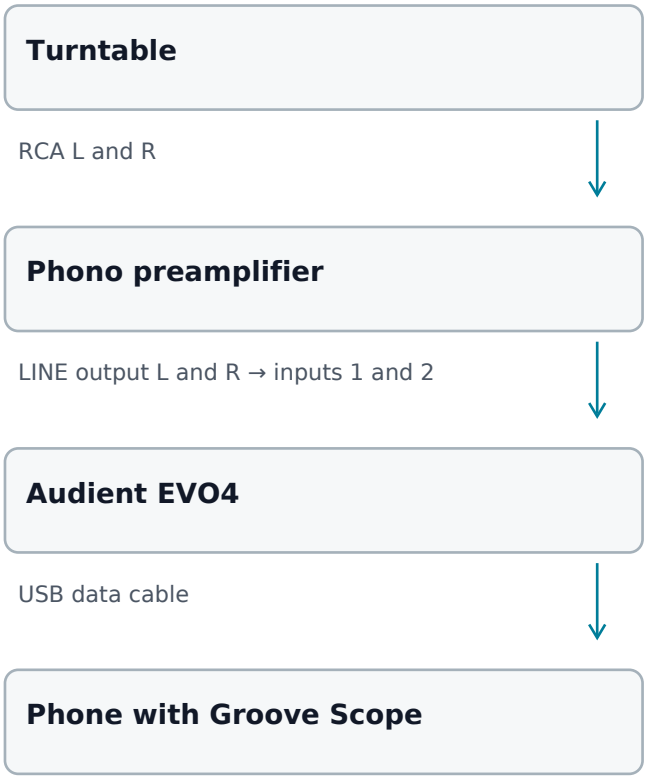
Two ways to connect your turntable

Connect the analogue audio first. Then connect the interface to the phone by USB. Keep the left channel on L or input 1 and the right channel on R or input 2.

A ART USB Phono Plus PS



B Audient EVO4



ART

For a compatible MM cartridge select PHONO and connect the ground wire, if fitted. From a separate phono stage select LINE, avoiding a second phono stage in the path. Low-output MC cartridges need a suitable phono stage.

EVO4

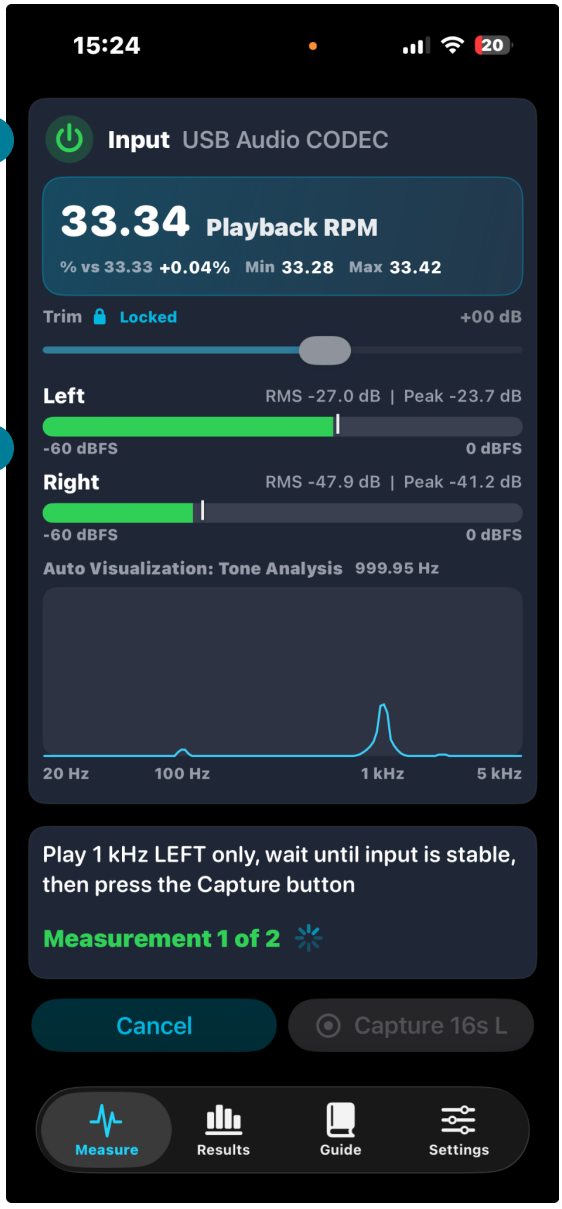
Feed the phono-stage signal into the rear LINE inputs. RCA outputs need two RCA-to-jack connections: each jack carries one mono channel, not the whole stereo signal. Do not use the front instrument input.

Final check

Use line-level outputs only, never loudspeaker terminals. Keep listening volume low during testing. Leave gain settings and cabling unchanged between the two reference captures.

Check input and levels

Before pressing Capture, confirm that the app receives the interface signal and that no stage in the signal path is overloaded.



1 Identify the input

Open Measure. The interface should appear at the top: the example shows USB Audio CODEC, the name used by the ART. If the phone microphone appears instead, check the USB connection first.

2 Check both channels

Play the requested track and watch Left and Right. On a left-only track, the right channel may show a residual signal; it need not be completely silent. Check that the channels are not swapped.

3 Set a clean level

Set interface gain before capturing the pair. Avoid clipping, peaks reaching 0 dBFS and very low signals. With EVO4, keep both input gains equal; avoid separate automatic gain adjustments on the L and R tracks.

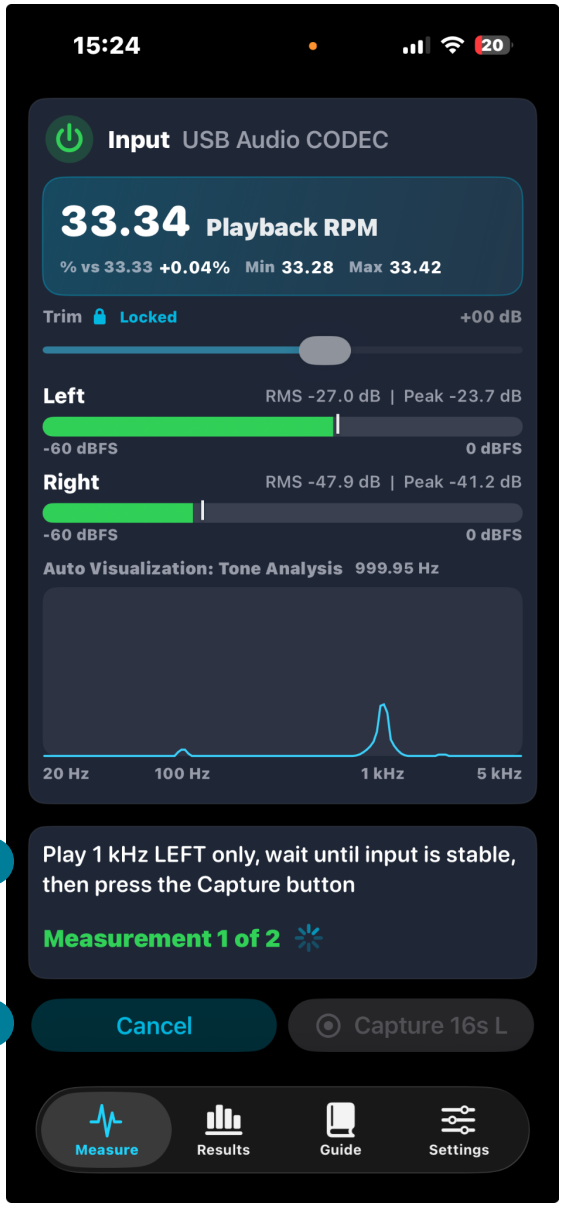
Allow audio access

Grant the audio or microphone permission requested by the operating system: this also enables capture from the USB interface. The screenshot is an example, not a numerical target to copy.

The measurement uses the electrical signal. Readings and button availability depend on the incoming signal and its stability.

Capture left then right

Follow the app’s order for the two 1 kHz tracks. Keep the connection stereo throughout: do not move or unplug the audio leads between tracks.



1 Play the left reference

Choose the 1 kHz reference workflow and the correct record where offered. Lower the stylus onto the left-only track requested by the app. Wait for a stable section, away from the beginning and end of the track.

2 Press Capture when available

The example button reads Capture 16s L: a 16-second capture of the left reference. During capture, leave gain unchanged, avoid touching the turntable and do not adjust a preamplifier volume control if you are using its variable output.

3 Move to the right reference

When prompted, place the stylus on the right-only track and capture again. Keep the interface settings unchanged and wait for the process to finish.

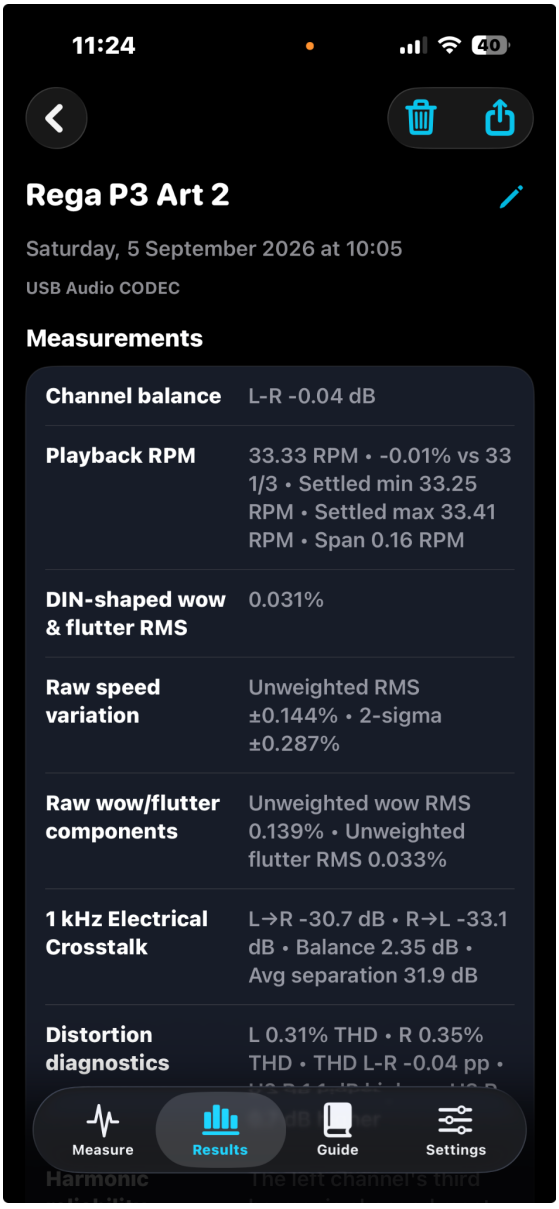
If Capture stays disabled

Check the input name, correct track, signal level and tone stability. The example screenshot shows a disabled button; it is not an instruction to force recording.

LEFT and RIGHT identify which record track to play, not which cable to disconnect.

Read the measurement summary

Open a saved result. Read capture quality, speed, balance, separation and distortion together before deciding on an adjustment.



Channel balance

This is the level difference between channels. A value near zero means similar levels. Where the label is L-R, a positive value means the left channel is louder; a negative value means the right is louder.

Playback RPM

Revolutions per minute are estimated from the reference tone. Read the percentage error against the selected nominal speed. The test record and acquisition can contribute to the result: repeat before adjusting speed.

Wow and flutter

These describe speed variations. DIN-shaped wow & flutter RMS and Raw speed variation use different processing. Compare only results obtained with the same method and conditions.

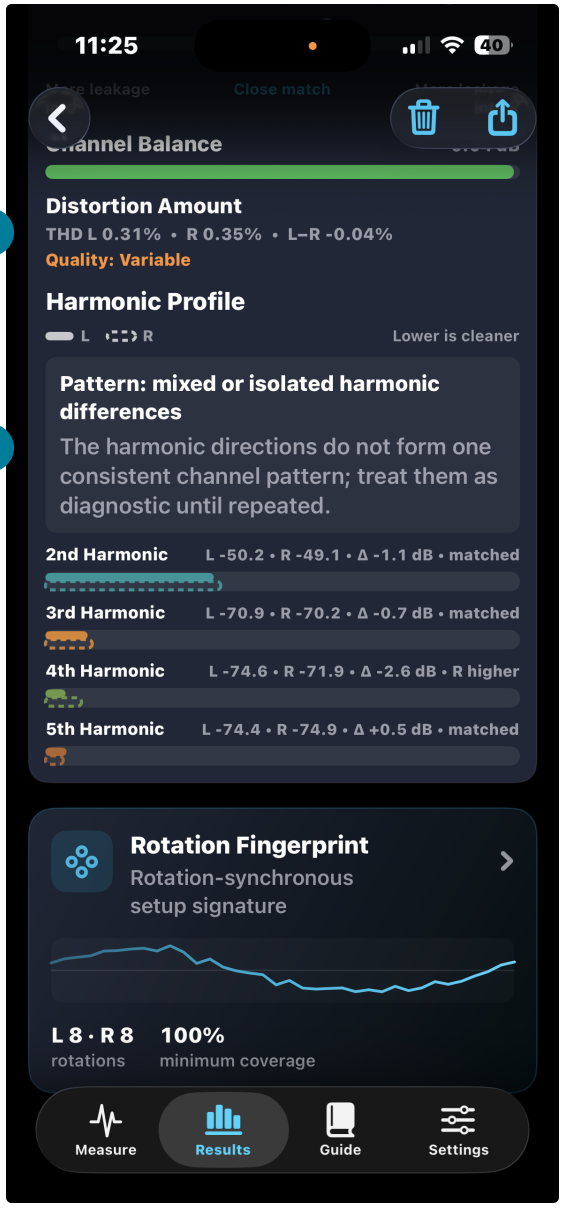
Electrical Crosstalk

This is signal entering the channel not intentionally recorded. Higher positive separation means less crosstalk; where leakage is shown in negative dB, a more negative value means less leakage. Consider both L→R and R→L directions.

The readings belong to the illustrated session. They are not universal thresholds or promised performance for other systems.

Interpret distortion and azimuth

A measured difference is a starting point. Linking it to a mechanical adjustment requires repeatable results and checks for other possible causes.



1 Distortion Amount and quality

THD is the total harmonic distortion in the captured signal. It includes contributions from the active playback and capture chain and the record, not the cartridge alone. Repeat when quality is Variable or uncertain.

2 Harmonic Profile

The second to fifth harmonics show how distortion is distributed. More negative values on the dB graph represent smaller components. An isolated difference does not prove a fault.

Before changing azimuth

Azimuth is the cartridge’s tilt when viewed from the front. Asymmetric crosstalk may also arise from the cartridge, record or acquisition chain; it does not automatically mean the cartridge body needs tilting.

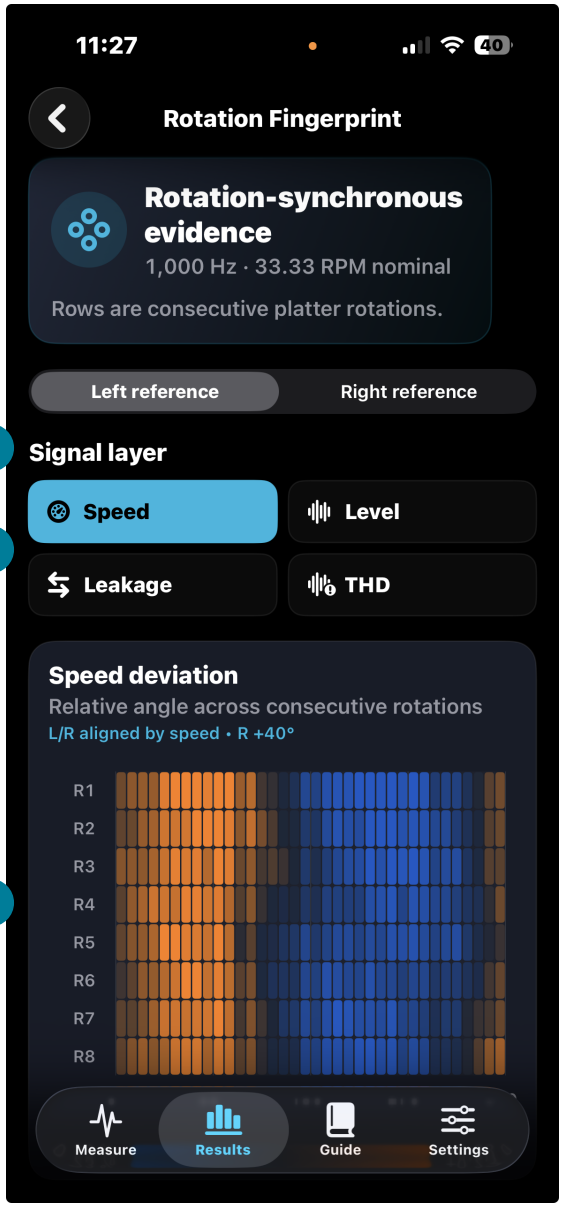
Make one adjustment at a time

Check cleanliness, tracking force and interface settings first. If your arm allows adjustment, lift the stylus, follow the manufacturer’s instructions and make small changes. Keep only repeatable improvements that do not worsen other indicators.

This example reports variable quality and mixed harmonic differences: repeat the test before considering a large correction.

Explore Rotation Fingerprint

The map shows how the signal changes during consecutive platter rotations. Use it to examine recurring features and compare sessions.



1 Choose the reference

Left reference and Right reference correspond to the two captured tracks. When comparing sessions, inspect the same reference.

2 Choose a layer

Speed shows speed variation; Level shows signal level; Leakage shows crosstalk; THD shows harmonic distortion. Inspect one layer at a time and read its displayed scale.

3 Read rows and columns

Each row represents a consecutive rotation. Columns follow relative angle within a rotation. A feature recurring across rows suggests periodic behaviour; an isolated feature needs checking.

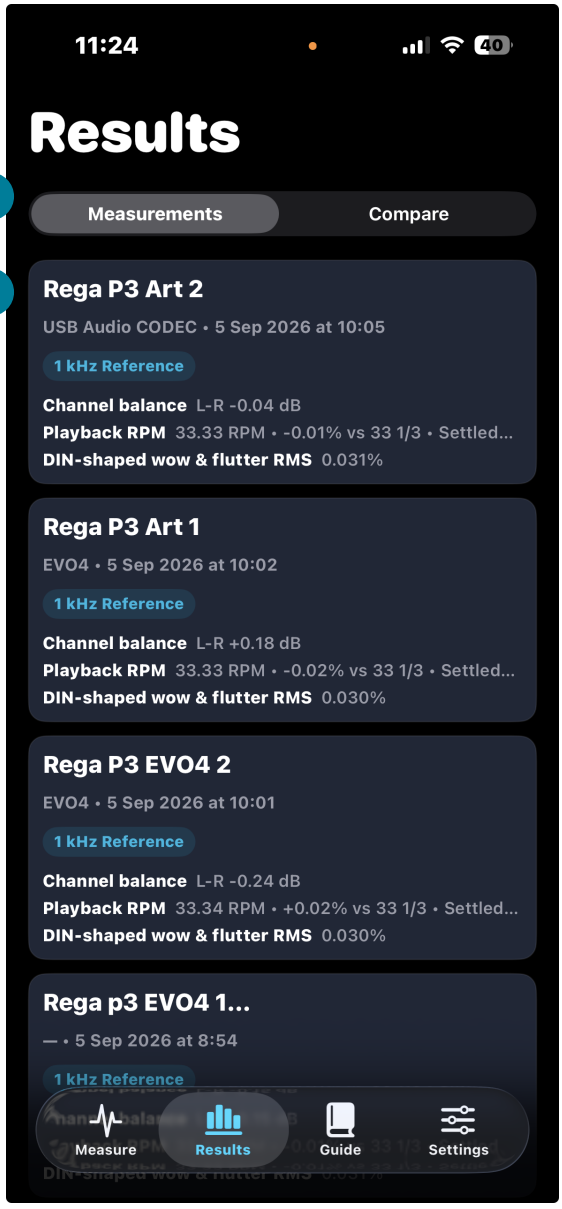
What the map can establish

The map describes the captured session. By itself it does not separate record effects from turntable effects or prove an audible change. Its angle is relative, not an absolute physical reference on the platter.

Do not interpret colour alone: its meaning depends on the layer, units and displayed scale.

Find and share your results

A result stays useful when you know the cartridge, record and connection used to obtain it. Choose names that describe your setup.



1 Open Results and Measurements

Results contains your measurements. The Measurements tab lists captures; Compare contains comparisons. Tap a measurement to open its detail.

2 Use recognisable names

In the detail view, use the name-editing control where available. For example: “P3 Bronze - baseline - 1.8 g”. Name the next capture separately and record the single adjustment you made.

Record the conditions

Keep the date, cartridge, arm, record and tracks, nominal speed, tracking force, anti-skating, phono stage, interface and gain settings. If the app has no dedicated field, use a notebook or an external note.

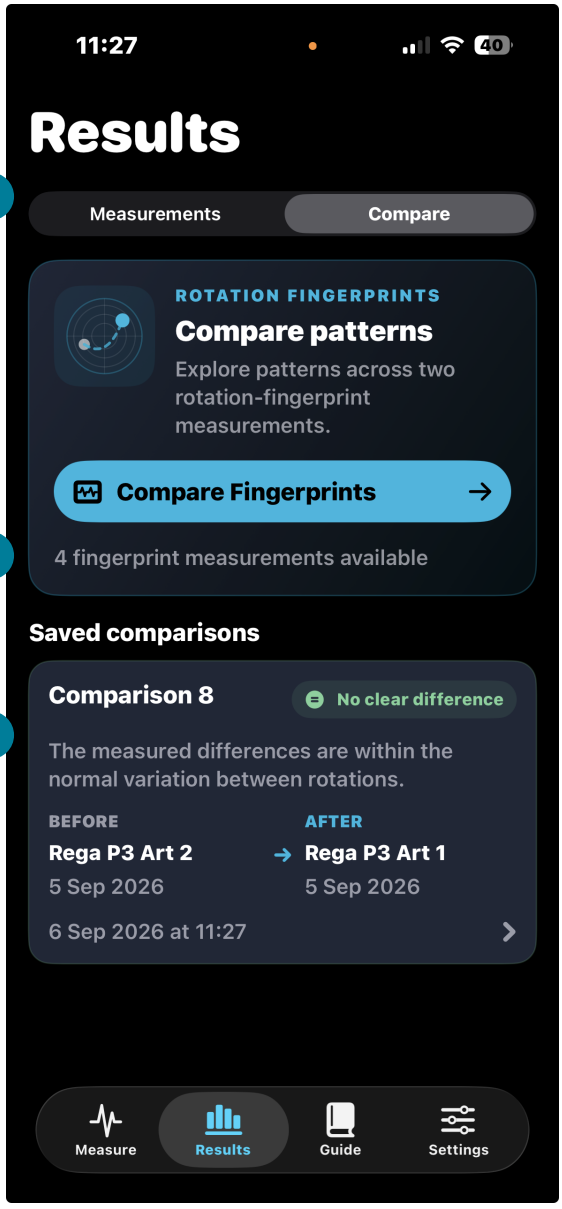
Share the report

In the measurement detail, the share icon at the top allows sharing or report export according to the installed version’s options. Keep a PDF copy in a folder you can find again.

Interface identity is part of the context: a different interface or gain setting can affect the results.

Compare two adjustments

First check how much your system varies without changes. Then adjust one parameter and capture again with the same record and gain settings.



1 Open the Compare tab

From Results, choose Compare. Compare Fingerprints starts a comparison between two measurements with Rotation Fingerprint data available.

2 Identify Before and After

Before is the measurement preceding the adjustment; After is the subsequent one. Select sessions captured under comparable conditions. Do not mistake a cabling change for an effect of the adjustment.

3 Read the outcome carefully

The example says No clear difference: no clear difference relative to the observed variation. This is not an app error and does not show that the two conditions are identical in every respect.

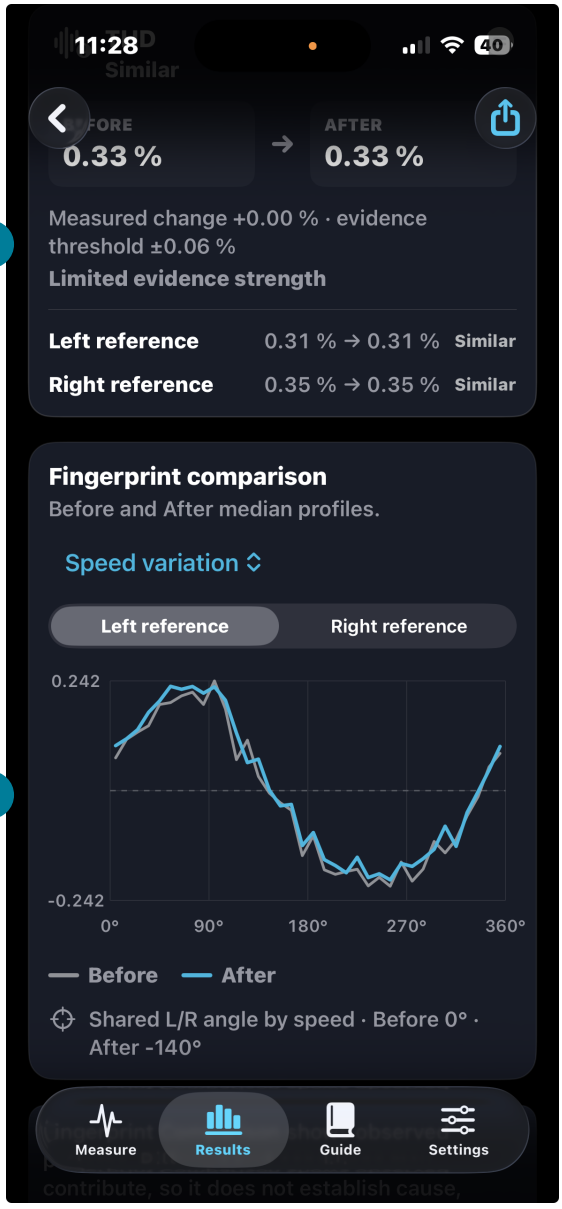
Keep a reliable baseline

Repeat at least one capture without changing anything. If the baseline itself varies substantially, resolve repeatability first. A small adjustment may be indistinguishable from normal test variation.

A useful comparison may conclude that the data do not support a clear difference.

Read the comparison detail

The curves and evidence strength help you judge whether the measured change can be distinguished from variation in the test.



1 Change and evidence

Measured change describes the observed change; evidence threshold is the threshold shown for that comparison. Limited evidence strength indicates limited support for a firm conclusion.

2 Compare the same layer

In Fingerprint comparison, choose the layer and the same L or R reference. The example legend identifies Before in grey and After in blue.

Do not chase every separation

Small gaps between curves may fall within variability. Read the overall outcome and repeat uncertain results. Angular alignment is relative and can be recalculated between sessions.

Use a simple decision rule

Keep an adjustment when the desired change repeats and other parameters remain acceptable. A different curve alone does not prove better sound: complete the check by listening.

Here the displayed mean THD is 0.33% in both sessions and evidence strength is limited. This is one example only.

If something does not work

Check connections, selected input, record track and levels, in that order. Change one thing at a time to make the cause easier to find.

The interface does not appear

Check that the USB cable carries data and that the adapter is compatible. Reconnect the interface and check whether extra power is needed. Then check the phone’s audio permissions.

The meters do not move

Check phono-stage power and source selection. On ART use PHONO for a suitable turntable connection or LINE for a phono-stage output. On EVO4 use both rear LINE inputs.

Capture remains disabled

Play the requested 1 kHz reference, wait for the stable section and check for missing or overloaded signal. Do not substitute music for the test tone.

One channel looks very different

On a left-only or right-only track the unrecorded channel should be lower. If the main signal appears on the wrong side, check track identity and cable order. Check equal EVO4 input gains.

Clipping or unexpected distortion appears

Reduce gain at the stage causing the overload. Software trim cannot repair clipping that already occurred in the interface or phono stage. Repeat the whole pair with the new levels.

Hum or large changes between repeats

Check turntable ground, connector seating and cable distance from power supplies. Note the ART Low Cut setting and keep it unchanged; do not engage it when characterising low frequencies. Repeat without touching the support or changing settings.

For support, prepare: phone model and app version, cartridge, record and tracks, audio interface, connection diagram and a screenshot or measurement report.

Keep this checklist beside your turntable

- [ ] Clean record and stylus; baseline setup recorded.
- [ ] L to channel 1, R to channel 2; correct PHONO or LINE.
- [ ] USB interface recognised; two simultaneous inputs.
- [ ] Correct stable tone; no overload.
- [ ] Equal gains, unchanged between left and right.
- [ ] L and R pair captured; result clearly identified.
- [ ] One unchanged repeat before comparing.
- [ ] One adjustment at a time; then repeat and listen.

This draft covers the stereo 1 kHz workflow and associated results. Before publication, verify the steps against the shipping iOS and Android builds. Screens can differ and do not certify all features across platforms.

Support and references

References consulted on 31 October 2026. Follow the links for complete product specifications and current instructions. Screenshot readings are session examples, not performance targets.

Groove Scope and original screenshots
https://directsoundrecords.com/groove-scope/

ART USB Phono Plus PS
https://artproaudio.com/phonopreamps/product/357989/usbphonoplusprojectseries

Audient EVO4 connections
https://docs.audient.com/evo4/hardware-connections/

Audient EVO4 gain controls
https://docs.audient.com/evo4/input-controls-smartgain/

Ortofon Test Record
https://ortofon.com/products/ortofon-test-record

The Ultimate Analogue Test LP
https://store.acousticsounds.com/d/35532/Analogue_Productions-The_Ultimate_Analogue_Test_LP-Turntable_Set_Up_Tools

Room Reference
https://directsoundrecords.com/room-reference/

DSR website
https://directsoundrecords.com/

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