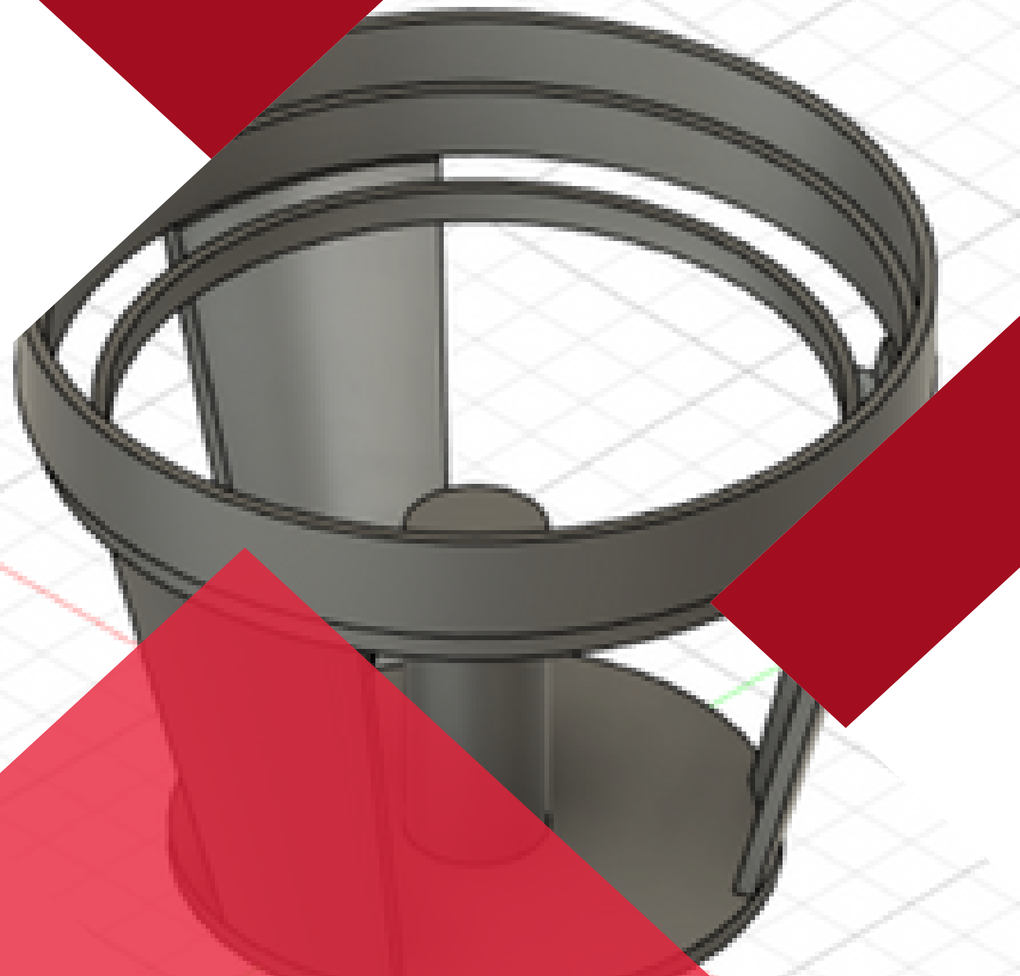
JOSEPHOOD / MARVIN

Group No.2

Weightlifting speaker

The birth of the greatest speaker in this class



2023/06/01.

Materials

Our design strategy & conclusion

Suspension

strong resilience
uniformly stretched

Diaphram

thin cardboard
weighted

Coil

3D printing technology
plastic flake

Coil design

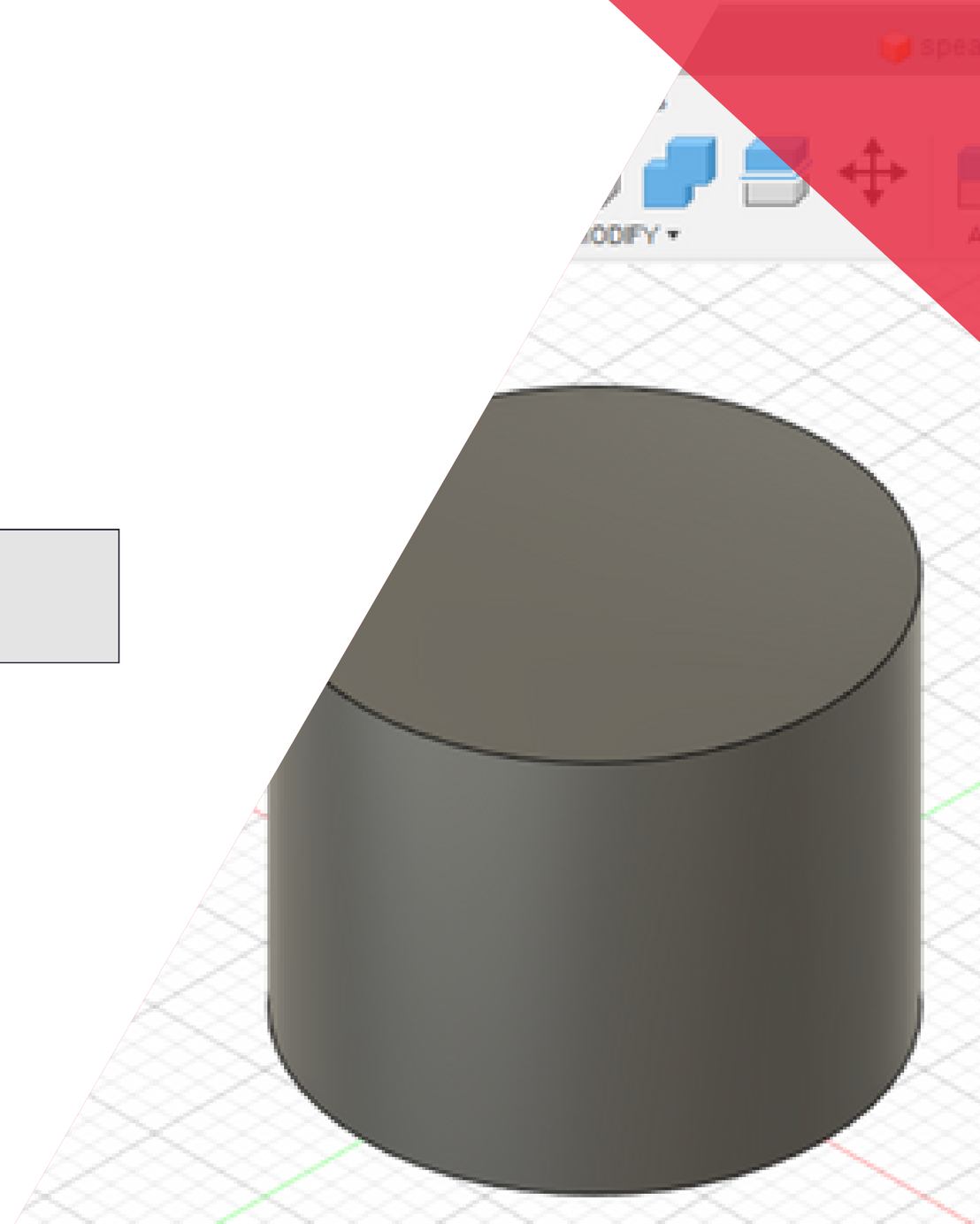
3D printing technology

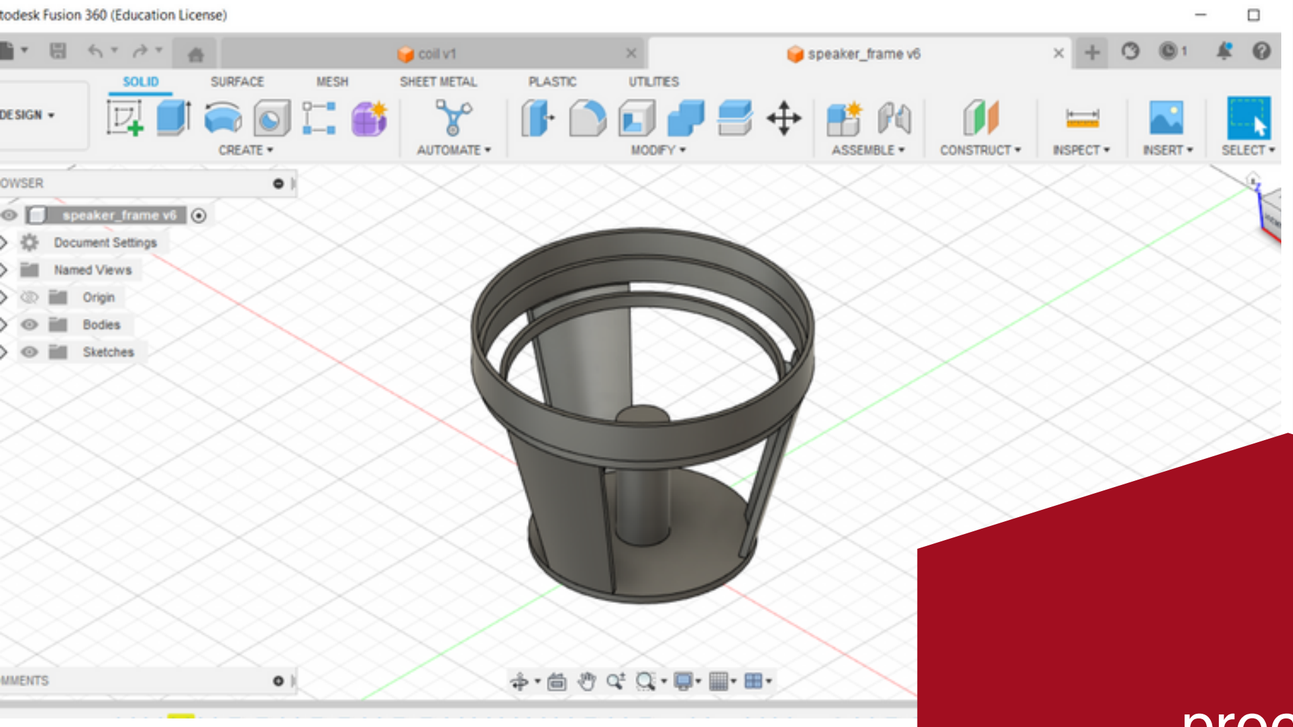
Coil

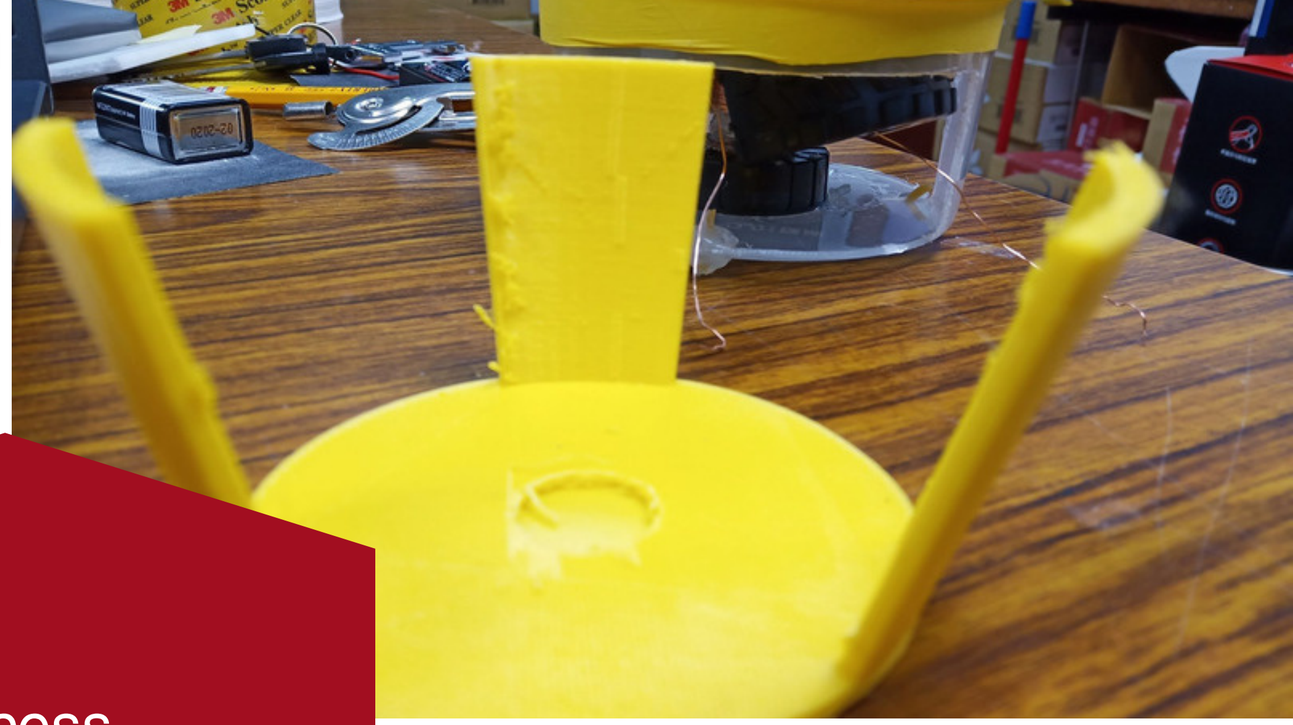
2 loops for symmetry
Half the height of the former

Former

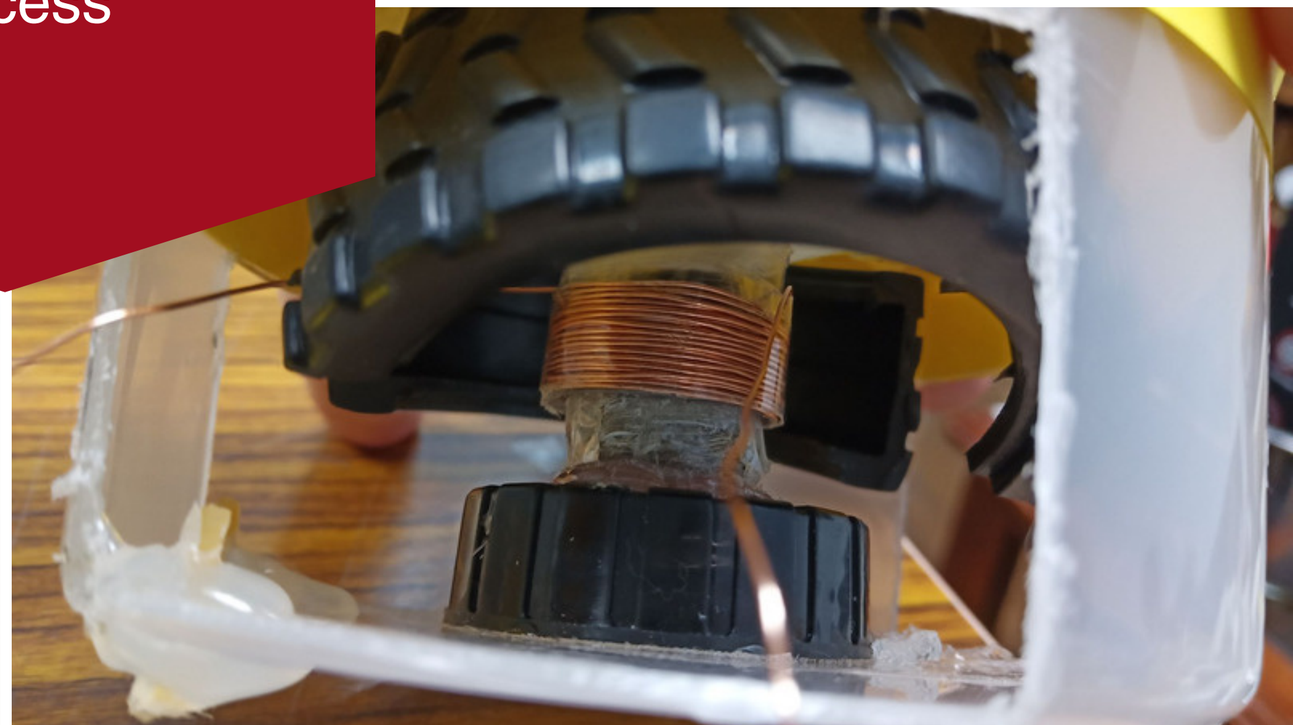
Thin plastic flake




todesk Fusion 360 (Education License)
coil v1
speaker_frame v6
SOLID
SURFACE
MESH
SHEET METAL
PLASTIC
UTILITIES
DESIGN
CREATE
AUTOMATE
MODIFY
ASSEMBLE
CONSTRUCT
INSPECT
INSERT
SELECT
OWSER
speaker_frame v6
Document Settings
Named Views
Origin
Bodies
Sketches
MMENTS

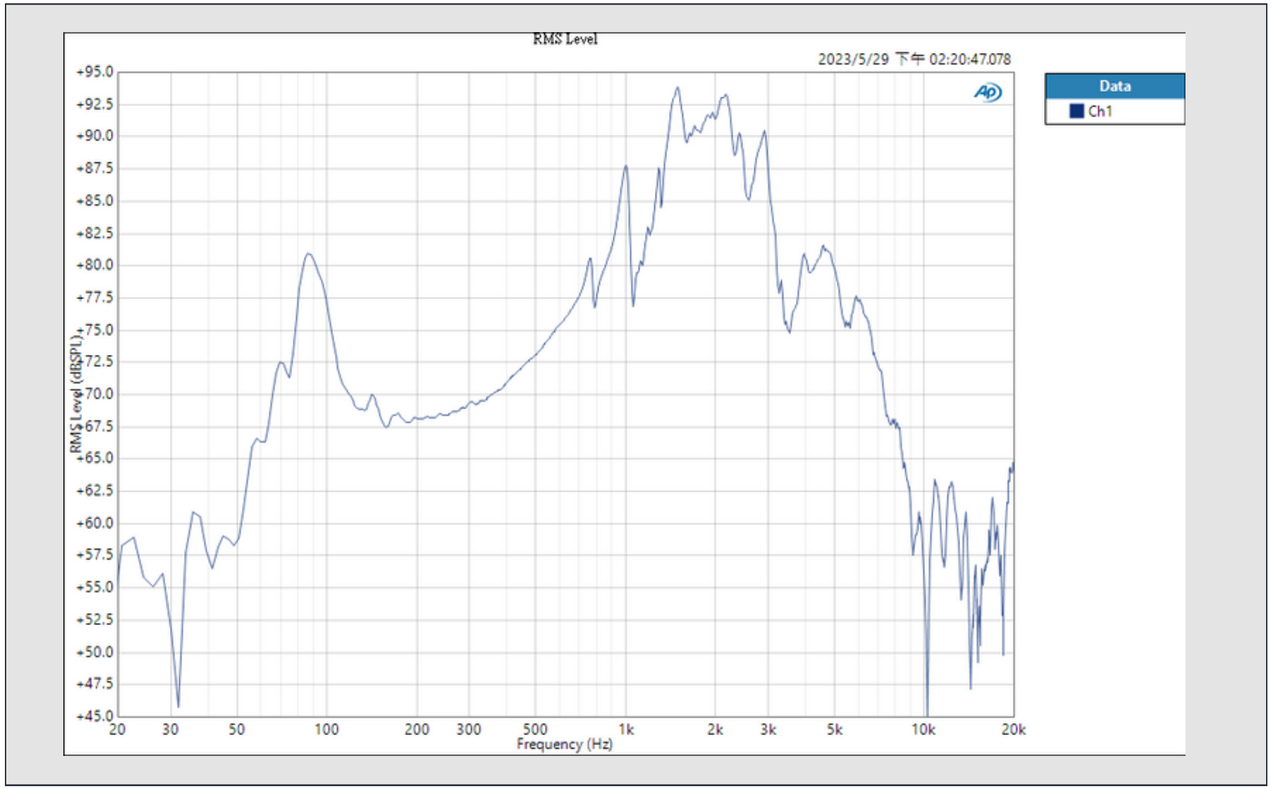


process



Magnitude Frequency Response

Acoustic Panel



Good:

1kHz ~ 5kHz

Bad:

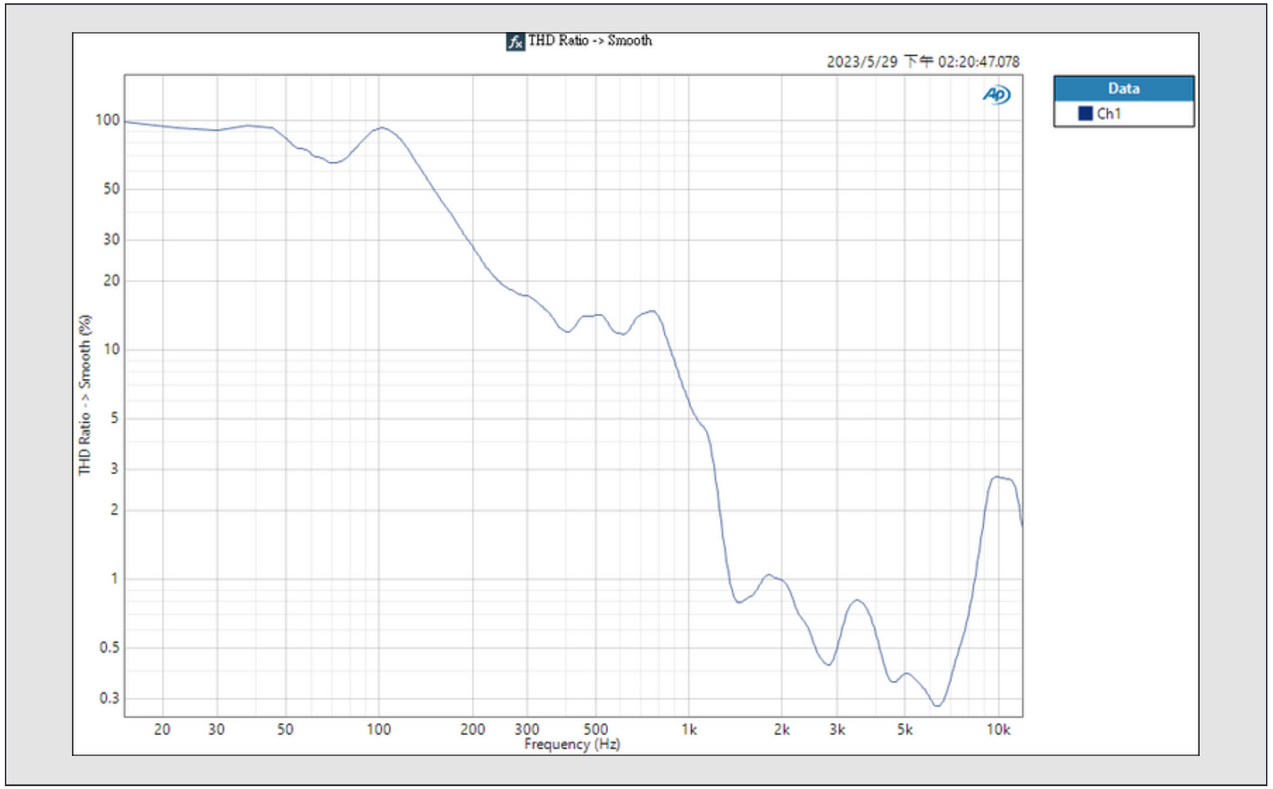
200Hz ~ 300Hz

Cause:

Collision between coil and base

Total Harmonic Distortion

Acoustic Panel



Good:

1kHz ~ 8kHz

Bad:

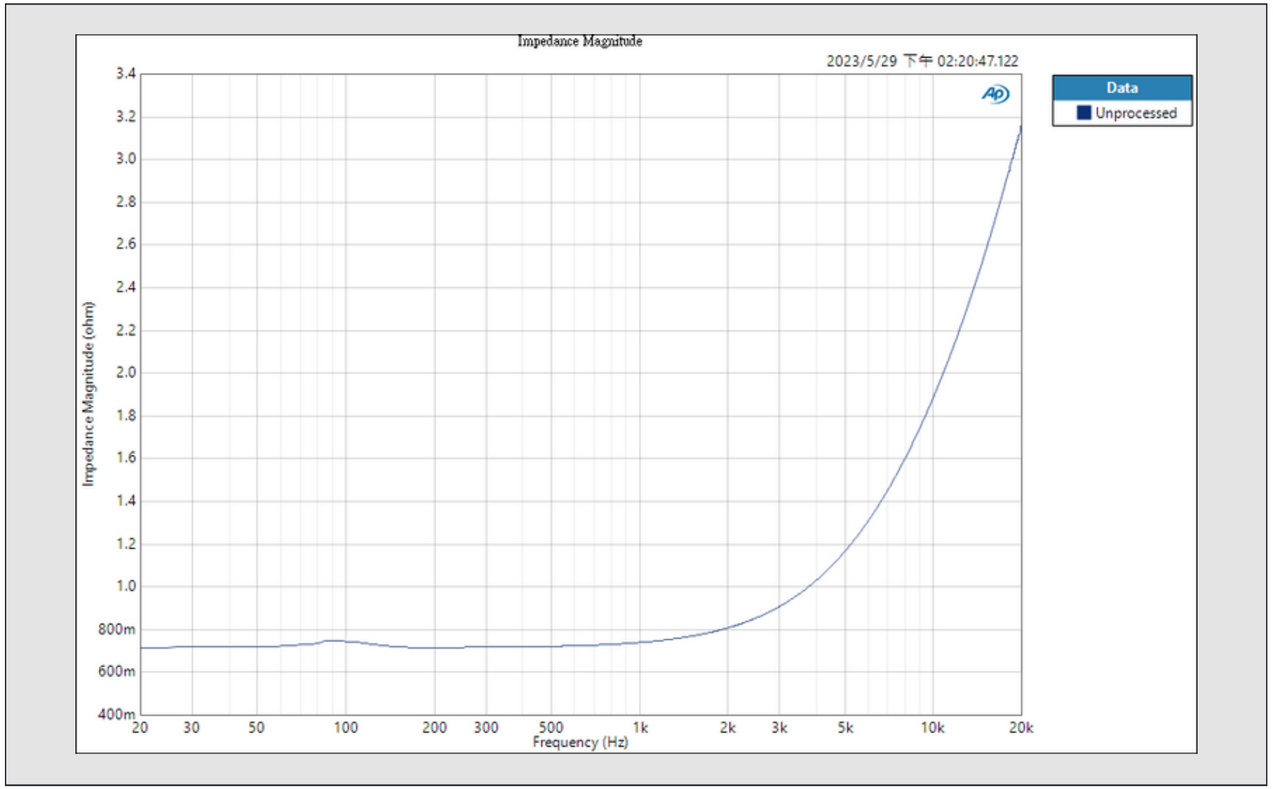
200Hz ~ 700Hz

Cause:

lightweight diaphragm oscillations

Impedence Magnitude

Acoustic Panel



Good:

-

Bad:

-

Cause:

unknown

TS Parameter

This design can be seen as both an open-ended tube and an infinitely long tube. Thus, both Re and Le are measured.

Fs	90.23 Hz
Qms	6.58
Qes	291.92
Qts	6.44
Re	0.73 Ω
Le	0.03 mH

Thank you

group No.2