THESIS REVIEWER'S REPORT

I. IDENTIFICATION DATA

Thesis title:	**Stimulus-frequency otoacoustic emissions measured using synchronized swept sines**
Author's name:	**Yiming Peng**
Type of thesis :	bachelor
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Departement of Radio Electronics
Thesis reviewer:	Ondřej Klimeš
Reviewer's department:	Departement of Radio Electronics

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment **challenging**

How demanding was the assigned project?

I found the work to be challenging, primarily due to the highly specific nature of the topic, which made it difficult for newcomers to fully understand the entire inner ear and OAEs.

Fulfilment of assignment **fulfilled**

How well does the thesis fulfil the assigned task? Have the primary goals been achieved? Which assigned tasks have been incompletely covered, and which parts of the thesis are overextended? Justify your answer.

The task was fulfilled.

Methodology **correct**

Comment on the correctness of the approach and/or the solution methods.

The student's approach and methods used were satisfactory. The results are presented in a clear way. The number of subjects measured is appropriate for the scope of this bachelor's thesis.

Technical level **B - very good.**

Is the thesis technically sound? How well did the student employ expertise in the field of his/her field of study? Does the student explain clearly what he/she has done?

Formal and language level, scope of thesis **C - good.**

Are formalisms and notations used properly? Is the thesis organized in a logical way? Is the thesis sufficiently extensive? Is the thesis well-presented? Is the language clear and understandable? Is the English satisfactory?

The thesis fulfills the formal requirements. The extent is adequate (exceeding the minimum requirements), approximately 37 pages including the title page and references. The language level of the thesis is overall adequate however the writing style lacks coherence. For instance, the *1. Introduction* section and the beginning of section *2. Stimulus frequency otoacoustic emissions* use clear and simple technical language, while in section *2.1* and *3.*, the student adopts a more sensationalized style. From my point of view, the strong terms as e. g. *pivotal, crucial, meticulously developed, intricacies, rigorously evaluate* etc. shall be avoid in the used context as well as the unmeaning and potentially confusing sentences as e. g. *…sound card, selected for its exemplary audio fidelity, which serves as the cornerstone of our auditory signal processing,* etc.).

Selection of sources, citation correctness **A - excellent.**

Does the thesis make adequate reference to earlier work on the topic? Was the selection of sources adequate? Is the student's original work clearly distinguished from earlier work in the field? Do the bibliographic citations meet the standards?

The thesis contains 14 sources (12 papers). The selection of these sources was appropriate to cover the studied issue. Based on the review of the bachelor's thesis, I believe that the student has familiarized with the cited literature to an appropriate depth.

Additional commentary and evaluation (optional)
Comment on the overall quality of the thesis, its novelty and its impact on the field, its strengths and weaknesses, the utility of the solution that is presented, the theoretical/formal level, the student's skillfulness, etc.

III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

Summarize your opinion on the thesis and explain your final grading. Pose questions that should be answered during the presentation and defense of the student's work.

The aim of this thesis was to implement an approach for measuring stimulus-frequency otoacoustic emissions (SFOAEs) by using synchronized swept sines and verify the developed approach experimentally using SFOAEs measured in human ears. In the thesis, the student discussed all of above-mentioned objectives. The student was able to get oriented in measurement technique and successfully prepare and conduct experiments on three subjects. The student also dealt well with the post processing and evaluation of the dataset.
However, the student should have clearly indicated in the text which part of implementation were his own and which were adopted. He should have also paid better attention to the formal and linguistic aspects of the thesis.
Overall, I evaluate the thesis as a B - very good.

Questions:

1. **In what clinical or research scenarios is the measurements of SFOAE using SSS particulary advantageous?**
2. **Are there some external factors or conditions that may affect accuracy of SFOAE measurements?**
3. **In the section 5.1. subsection SFOAEs in the time domain you discuss the experimental results. You mention the possibility of activation of middle ear muscle reflex. How middle ear muscle reflex can affect the measured OAE in general?**
4. **How do the time requirements for measurement decrease with increasing sweep rate, considering the necessity for more repetitions? In other words, if I double the sweep rate, do I need to perform 2 times more repetitions to achieve an equally reliable OAE response?**

The grade that I award for the thesis is **B - very good.**

Date: **26.1.2024** Signature: