

# Testing of high-bandwidth accelerometers

## Description

The intention of this thesis is to perform research about a method to test the characteristics of high bandwidth accelerometers.

It concerns 3-axis SPM accelerometers which have a bandwidth of approx. 40kHz with a resonance at the high frequency roll-off part of its frequency response.

It is very hard to measure the frequency response of such a sensor because calibrated measurement equipment for such test setup can't be (economically) found.

The test results are also very dependent on the method the sensing element is integrated in its housing.

The thesis should evaluate if it is possible, based on modelling techniques, to come to a test setup that can be applied for engineering as well as for routine testing purposes.

Currently, there is a test setup based on an electro dynamic shaker and a setup based on an impulse excitation via a speaker cone. However, repeatability of test results and coverage of the high frequency performance are hard to obtain.

The aim of the thesis would be to define a test setup which demonstrates to solve the issues mentioned above.

If you are interested in this topic, please also register this on the Televic website at:

<https://www.televic.com/en/careers/internships-and-students> so we can confirm the topic is still available.

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## Contact

[C.Viaene@TELEVIC.com](mailto:C.Viaene@TELEVIC.com)

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**Nature of the work**

Level	Specialty	Type of work.	Location	Type of activities	Num of students
Master	Electronics / Hardware, Mechanical / Product design	Research: 30% Implem.: 40% Experim.: 30%	Televic, University	Experimenting, Implementation	1