

MEMS Mirror Sensing Interface

Micro-Electro-Mechanical-System (MEMS) mirrors build the foundation for future LiDAR (Light Detection and Ranging) and augmented reality applications (such as head-up displays). Such applications typically project laser light into the scenery by using two MEMS mirrors: a fast-moving resonant MEMS mirror (x-axis) and a slow-moving quasi-static MEMS mirror (y-axis).

In this Diploma- or PhD-Thesis, an analog sensing interface shall be researched and developed that will be used to convert a quasi-static MEMS mirror's capacitance (which represents the current mirror's position / angle) into a digital value: first, a concept for such a capacitance-to-digital converter shall be developed that fulfills the requirements of future augmented reality applications. Based on this concept, a feasibility study shall be realized that uses discrete components (such as discrete amplifiers, ADCs, etc.). Finally, in case of a PhD thesis, the sensing concept shall be realized in an ASIC test-chip and its performance shall be characterized.

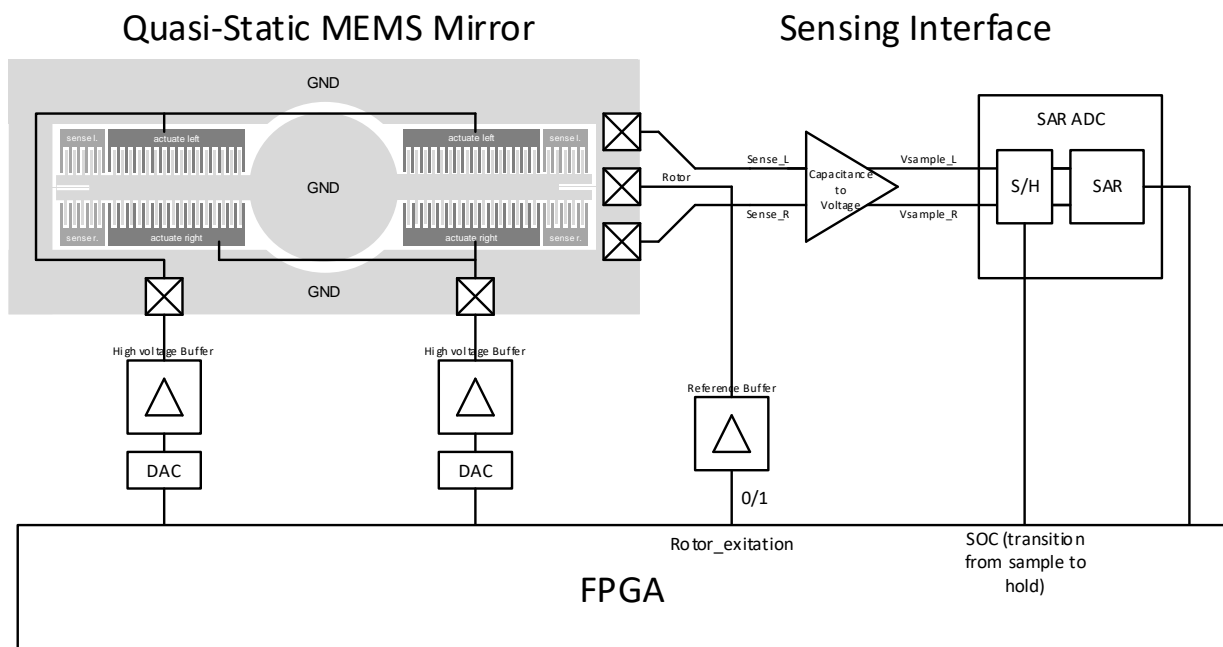


Figure 1: Quasi-Static MEMS mirror and its sensing interface which shall be realized

Infineon Technologies Austria and Graz University of Technology offer a paid diploma / PhD thesis in this innovative field of research.

If you are interested in participating in this exciting field of research, please contact us. We are very looking forward to hear from you!

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University and institute can be selected according to the student's needs, one possibility:
 Univ.-Prof. Dipl.-Ing. Dr.techn. Bend Deutschmann
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 Graz University of Technology

