Bachelors/Master thesis

System/Board level CDM (Charge Device Model) ESD (Electrostatic Discharge) Detection

Motivation

When we drop ear buds in the charging case, there is a possibility of a discharge between the ear bud's metal charging contacts and the charger. This event can lead to malfunction in the charging case. We are interested in developing a method to detect the occurrence of CDM ESD discharge due to tribo-electric charge at system and board level. The method should help us better quantify the failure in earlier stage. This will involve try to create repeated pulses from triboelectric charging using a robot, measure the pulses and, if possible create a model of the charge and discharge process.

Key Facts:

- Design a method for robotic drop and measure the charge on the unit.
- Dive into designing a software that analysis and flags secondary ESD events.
- Horne your skills with developing algorithms
- Collaborate closely with one of the world-leading mobile phone company through regular online meetings.
- To make a conceptual prototype.
- Tap into a wealth of experience and support from experts at the institute.

Your Profile

You are eager to learn. Prior experience in electronics and programming is needed. Knowledge in electromagnetic compatibility and signal processing is welcome.

Organizational matters

- Start: as soon as possible
- Workplace: at the institute
- You can get hired for 20h/week

Contact/Supervision

IFE: David Pommerenke - david.pommerenke@tugraz.at
IFE: Musab Hameed – Postdoc– musab.hameed@tugraz.at

TU Graz, Institute of Electronics, Inffeldgasse 12, 8010 Graz, info.ife@tugraz.at
► www.tugraz.at