

# Abstract

Testing has an important role in product development. With excluding it, there would be a chance for malfunction that could cause financial and life-threatening risks. Furthermore, continuous testing subserves the reduction of the setup and repair costs.

Testing of a complex product, like an electronic vehicle charger station must be done on different levels. First, the module level tests must be performed. Then the subsystem integration tests must be done. The system level tests are the next step after these, then the user level tests follow finally. My thesis' topic is a test system development that is capable of performing module level tests.

First, I introduce the existing test system. As a next step, I detail the structure of the developed test methods. Then I present the designed circuit, which is suitable for charge controller card tests. I describe the design considerations in detail. After this, I present both the processor and the PC-side test software's structure and operations, which makes it possible to execute semi-automatic tests. Then I continue my thesis with the comparison of manual and semi-automatic testing. Finally, I propose a solution for emulating an environment of the charger station. This includes I present my car simulator circuit design, which is suitable for carrying out subsystem integration tests.