

Abstract

In today's cars the electronic control units are playing a key role not only in engine control and vehicle dynamics, but also in comfort functions used by the passengers. In my thesis I introduce some necessary design steps of the control unit one of these comfort functions, the electronically adjustable steering column.

Firstly, I design a software to test the equipment. The software is able to define variables and show the most important ones to the user. In the testing software I create a user command, which is able to start the initialization mode of the tested device, and then to feedback its success status.

In the next chapter I introduce the design and sizing steps of two different hardware peripherals of the microcontroller. To verify the right functionality of the circuits I am using the results of a simulation program's analysis.

In the end I show you the steps of defining the control transistors' thermal model in the microcontroller unit. I verify the right identification with a thermographic measurement.