

Abstract

The scope of my undergraduate thesis is the function extension of the field-bus gateway – developed by ThyssenKrupp Presta Hungary Kft. – with handling CAN partial networks. This development is fully integrated in the existing gateway module, both in hardware and software “levels”.

First, I describe the aims of the development for CAN partial networks, their operation, and the CAN protocol used for them.

Then I present the field-bus gateway to be developed, and describe its utilization and operation.

Next, the implementation of the project is described step by step, starting with the hardware. In this chapter I am describing the steps of the hardware realization from the design requirements to its manufacturing.

Hardware description is followed by the introduction of the software tasks. First, the operation and development principle of the software are described, followed the main parts of the developed software. These main software modules are the embedded software written in C language to be run on the gateway and the software written in Java language to be run on a personal computer controlling the gateway. These main software modules are described in separate chapters.

The CAN Partial network handling is fully integrated by the developed hardware and software elements into the existing test environment of the Company. It gives opportunity to extend the finished or presently running projects with the functions of CAN partial networks.