

Master 2013

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Development of communication software for Neuron LON 5000

ABSTRACT - Masterthesis

The fan control unit FCU350 is replaced by a new design for the cost and procurement reasons with enhanced features. The FCU350 device consists of two microcontrollers, the LON-controller for network management and the second for motor management system. The digital signal communication between the two microcontrollers is replaced by a SPI interface in the new design. The LON-controller is the slave and the engine management controller is the master.

The aim of the master's thesis is to develop communication software for the network management controller (Neuron 5000). The thesis started with the investigation and study of Lonworks technology. The Lonworks technology and FCU350 device were evaluated by assembling the appropriate development tools and demo boards. The Neuron 3150 software was successfully ported to Neuron 5000. The FCU350 older software was analyzed to understand the logical structure and to identify the changes in the program.

Further, equipped the microcontrollers to communicate with each other by defining the data-structure to be transferred on the SPI bus. The digital signals were replaced with SPI interface by coding the LON program and the qualification tests were conducted.