

The purpose of my thesis project is to develop a measurement software, that is capable of reading real-time measured data from the memory of an applicable device, without significantly affecting the normal-mode operation of the device. This tool is intended to be applicable to software development in the automotive industry, where embedded systems with a JTAG interface are frequently used, but diagnostic tools for them are often inadequate, or simply non-existent.

In order to perform the measurement, as a first step, the application enables the user to provide the memory addresses, that they wish to measure, and the number of bytes to be measured from each of them. The program then proceeds to replace one of the repeating interrupt routines of the microcontroller with its own measurement function. This function calls the original routine first (so as not to disturb the intended function), then performs the measurement, and finally loads the measured data into the memory, where the PC application can access it. The application reads, and logs the measurements into a file of .csv format, which can then be used to evaluate the data (eg. by visualization).