The thesis deals with design and implementation of an automated system for measuring, storing and analyzing data gathered from external hardware. At first, various architectures of data measurement systems are compared, their advantages and typical areas
of application are described. Next, different types of measuring probes hardware and data analysis software solutions are compared. Various technologies usable in data measurement system implementation are discussed (in particular A/D converters, connecting the converter to the computer, comparing the software architectures and used technologies). Based on this discussion, technologies for implementation are chosen. The described implementation consists of two-channel probe equipped with 10-bit A/D converter and sample input modules for temperature and voltage. The probe is connected to the USB using the FTDI converter. Practically tested schematics for the probe hardware are included. The implemented software can be used in two configurations - base configuration for easy installation on one computer, hierarchical configuration for complex solutions running on several computers. The text of the thesis, executable files, the user documentation, documented source codes, and documentation of used electronic components can be found on the enclosed CD.