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EPICS Independent Test Suite for PCI-based controls devices using PythonQT

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In this paper we present the generic solution for testing PCI-based hardware devices on Linux. For simple device manipulation, EPICS provides additional layer of complexity, which is usually not desired by the people who are just interested that device works on its own. The paper presents four software modules that were developed to ease the testing of such hardware devices remotely, without the usage of EPICS. The complete solution provides a server that exposes device data on the network, client Python API to modify the data remotely, and PythonQt GUIs that enable the user to change the data easily as well as run automated Python tests and generate their reports. Implemented software package was successfully used for testing EMCOR controller at SLAC National Accelerator Laboratory. Since it has been made with reusability in mind, it can be used for any other PCI-based hardware device without additional effort.

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