

Abstract Submitted  
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**A cross-platform GUI to control instruments compliant with SCPI through VISA** ERIC ROACH, JING LIU, University of South Dakota — In nuclear physics experiments, it is necessary and important to control instruments from a PC, which automates many tasks that require human operations otherwise. Not only does this make long term measurements possible, but it also makes repetitive operations less error-prone. We created a graphical user interface (GUI) to control instruments connected to a PC through RS232, USB, LAN, etc. The GUI is developed using Qt Creator, a cross-platform integrated development environment, which makes it portable to various operating systems, including those commonly used in mobile devices. NI-VISA library is used in the back end so that the GUI can be used to control instruments connected through various I/O interfaces without any modification. Commonly used SCPI commands can be sent to different instruments using buttons, sliders, knobs, and other various widgets provided by Qt Creator. As an example, we demonstrate how we set and fetch parameters and how to retrieve and display data from an Agilent Digital Storage Oscilloscope X3034A with the GUI. Our GUI can be easily used for other instruments compliant with SCPI and VISA with little or no modification.

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