

**Mobile Studio: a low-cost, highly portable, PC-based electronic
instrumentation suite**

By

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ABSTRACT

The Rensselaer Mobile Studio project was created to bring a low-cost, easy-to-use set of test equipment/instrumentation to students studying electrical engineering and related fields. The entire system, consisting of a modern PC, custom software, and a USB hardware device, is able to achieve this goal by combining the latest in low-cost analog converters, high-speed USB controllers, and software into one platform. Three versions of the hardware have been released; namely the “RED1” IOBoard, “BLUE1” IOBoard, and “RED2” IOBoard. The RED1 and RED2 IOBoards are targeted at the lower-performance, lower-price market, while the Blue IOBoard is a higher-performance model. All use USB 2.0 to communicate with the user’s PC, as well as for powering the hardware. On the PC, a custom software application, Mobile Studio Desktop, mimics the interface of several common laboratory instruments, while also adding new features and interfaces not found in traditional instrumentation.