

**Mobile Studio's Wireless Expansion: a low-cost, wireless toolset for  
expanding Mobile Studio's instrumentation suite**

By

Mathew Philip Wilson

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Approved:

Dr. Don Millard  
Thesis Advisor

Rensselaer Polytechnic Institute  
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## **Abstract**

The Mobile Studio Project and the Wireless Expansion are tools designed to provide affordable, simple, and powerful teaching aids to lab courses. Although it was originally designed to provide cost-effective access to expensive test instrumentation, the Mobile Studio hardware and pedagogy has spread into advanced engineering courses as well as other disciplines. While the original hardware for Mobile Studio has already been used in multiple settings, the Wireless Expansion allows for new types of environments to be created under the same philosophy: “Let the students play.”

Originally conceived in 1999, the Mobile Studio vision was founded on the observation that incoming students’ intuitive understanding of how circuits and electrical systems worked was declining year after year. The Mobile Studio rekindles the ability to tinker and provides the opportunity for every day to become an experiment day. The Wireless Expansion system continues in these themes and allows immediate study of phenomena as well as the ability to test and construct experiments and projects to satisfy one’s curiosity/needs; without requiring a physically wired connection to the monitoring/controlling computer. This document contains information relating to the design, development, fabrication, operation, and functionality of the Mobile Studio’s Wireless Expansion system.