**T12**

**E3V Board**

**New Experiments**

**Requirements**

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# Revision History

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| --- | --- | --- | --- |
| Rev # | Reviser | Date | Comments |
| 1.0 | Kris, Brandon, Louis, Travis | 2/21/15 | Document created |
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# Functionality

* Must have experiments on new board that will not interface with the original E3V board.
* Must be able to demonstrate new experiment objectives.
* Must have test ports on the board.
* Should be clear for upper division students and industry professionals to understand using lab manual exclusively.

# Performance

* Must be able to demonstrate experiment objective using oscilloscopes that are available to every PSU student.
* Must have ability to interface the board with a microcontroller development board or other lab equipment such as signal generator.

# Economic

* Must cost less than $100 for parts and board manufacture.

# Energy

* Must be powered by USB.

# Health and Safety

* Must have approved power tolerances on all components.
* Must be safe to leave on for long periods of time.
* Must be made form non-toxic materials.

# Environmental

* Must be made with non-toxic and non-hazardous materials that would require proper disposal.

# Maintainability

* Must provide open source schematics for user transparency.
* Must provide ability for user modification of experiments.
* Must use commercially available components for user interchangeable parts.

# Manufacturability

* Must be a 2-layer board.

# Documentation

* Must have lab manual for user.
* Should have lab manual for instructor.
* May have website that provides instructions for lab.

# Usability

* Must have experiments that are understandable for upper division ECE students.