

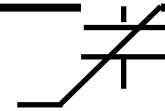
Radiant Packaged Ferroelectric Capacitor Tester

Joe T. Evans, Jr.

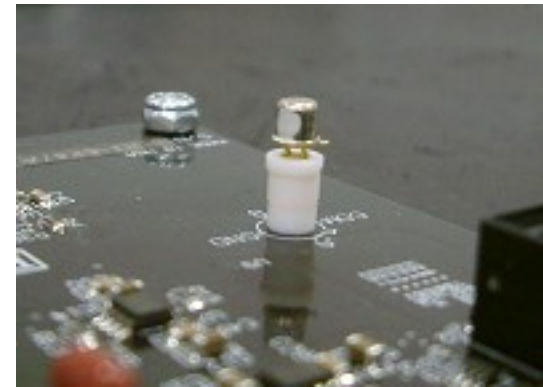
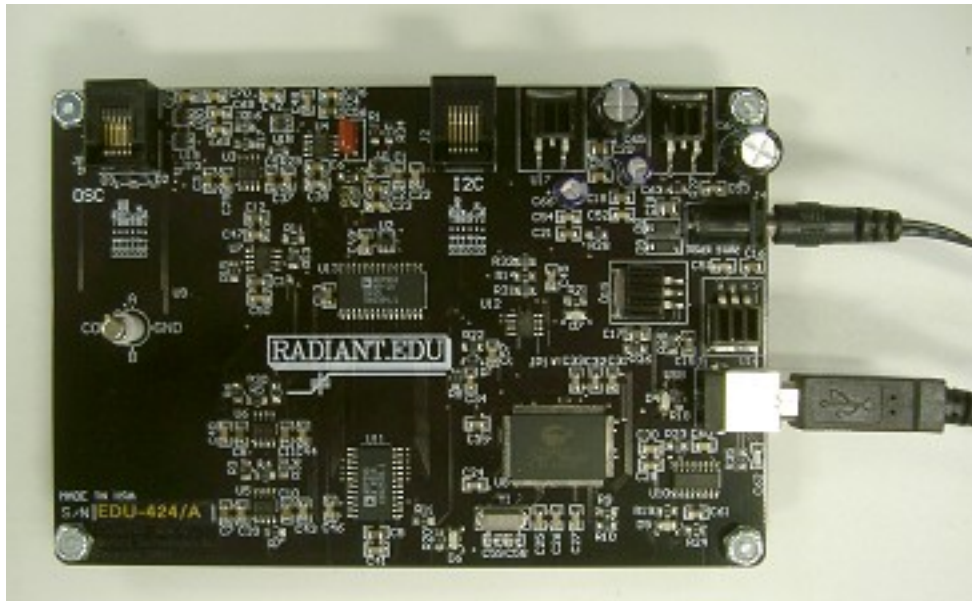
Radiant Technologies, Inc.

April 3, 2013

Radiant EDU



The Radiant EDU is a full function non-linear capacitor tester designed to work with packaged Type AB and Type AD capacitors.



The EDU will measure ferroelectric capacitors having areas of 10,000 square microns (AD103) down to 100 square microns (AD101).

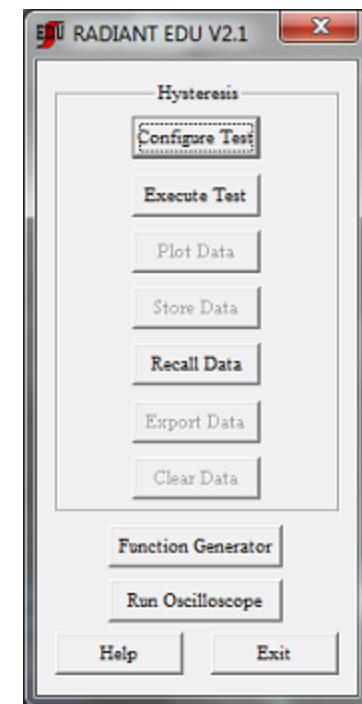
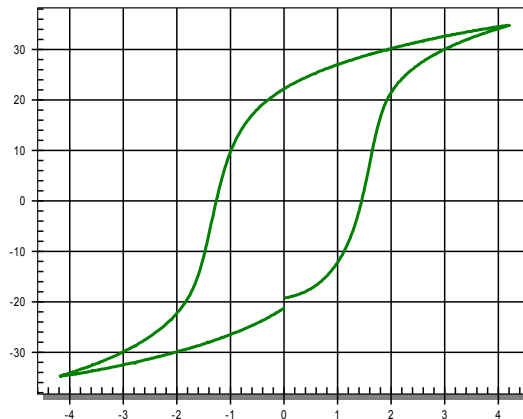
The tester is accurate to $\pm 1\%$ with a frequency range from 100Hz to 1Hz. It comes with a complete set of tutorials detailing 1) its operations and controls, 2) the theory of ferroelectric materials, and 3) experiments to explore the different properties of capacitors and non-linear materials.

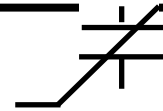
Ferroelectric Properties

The EDU uses the same architecture as Radiant's popular Precision family of research testers. It includes a fully programmable AWFG output and a sensitive, high speed electrometer with a virtual ground input. The virtual ground input ensures that the voltage assigned to the AWFG is the voltage falling across the ferroelectric capacitor at all times, eliminating the voltage ambiguity inherent to Sawyer-Tower circuits.

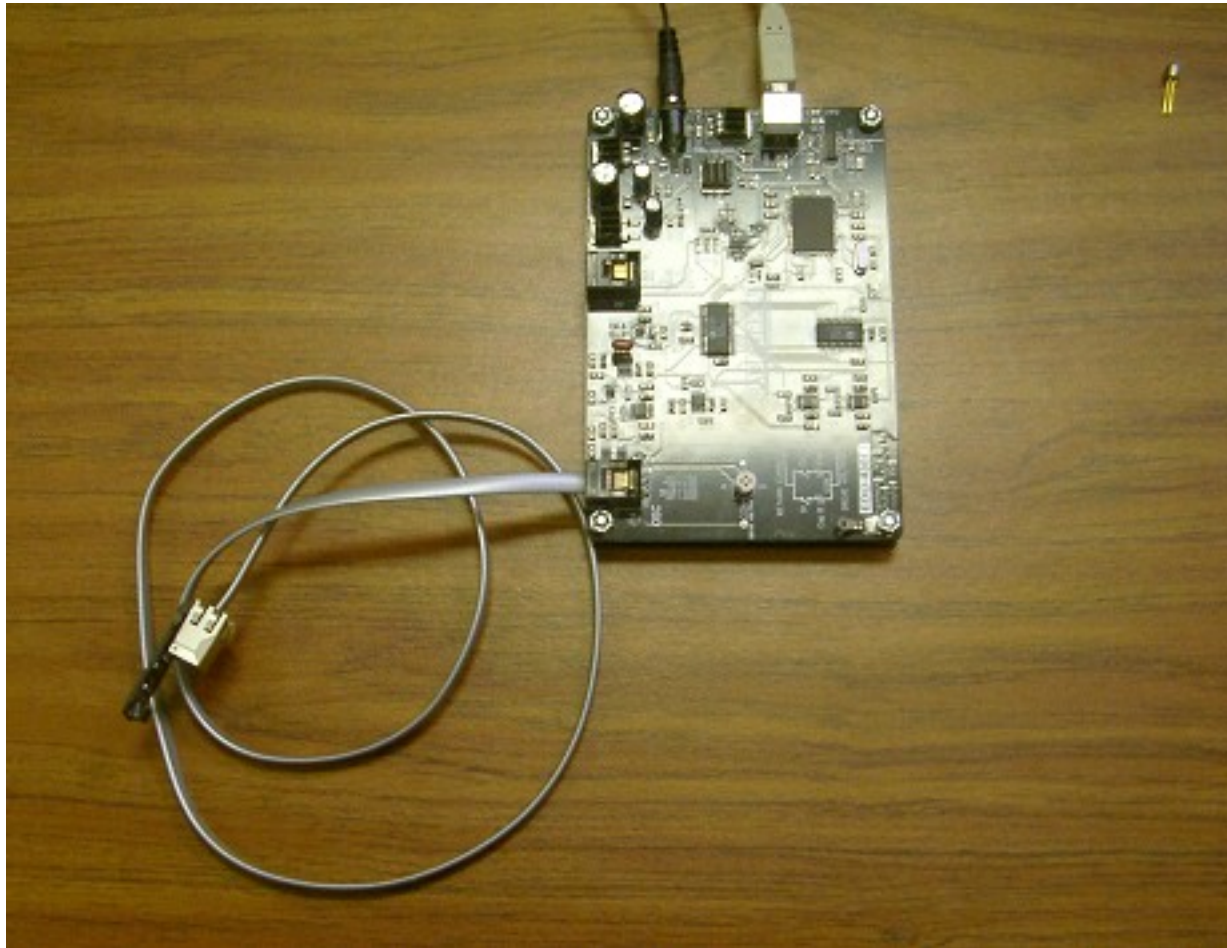
The EDU makes it possible to study all aspects of ferroelectric material properties:

- 1) Hysteresis vs frequency
- 2) Hysteresis vs voltage
- 3) Retention
- 4) Fatigue
- 5) Imprint





Real Time Oscilloscope



The EDU includes external ports for custom projects: an I²C port and an Oscilloscope port. The OSC port allows the user to build sensors or external memory boards and control them from the EDU. An API for the EDU is available from Radiant for the adventurous.