

# TI India Analog Design Contest 2011

[www.uniti.in/analog-design-contest](http://www.uniti.in/analog-design-contest)

Organized by Texas Instruments, India [www.ti.com](http://www.ti.com)

Partner: element14 <http://in.element14.com>

*The contest will be conducted in three phases - Phase 1A, Phase 1B, and Phase 2. In this document, we have summarized the rules of Phase 1A. Please read carefully and make sure that you have understood all the rules and have sent the necessary information.*

*Please note: We would like all teams to identify a student team leader. Only the team leaders must send e-mails to us, with a copy to all team members and faculty mentor. We will not respond to e-mails that do not observe this rule. Please ensure that you complete the tasks in the stipulated time. Extensions will not be granted.*

## Phase 1A – Analog System Design Challenge

1. In Phase 1A of the contest, we will provide one “Analog System Lab Kit” free to each of the participating colleges. Expect this to reach the mentor of **Team A** by **July 20, 2011**.
  - a. We request the mentor of Team A to ensure that the kit and the associated manual are kept in a lab that is accessible to all teams.
  - b. The team leader of Team A must send the following information to us before **July 5, 2011** for sending the Analog System Lab Starter Kit in the following format (all fields are mandatory):
    - i. Name of the Mentor for Team A:
    - ii. Designation:
    - iii. Complete *Official* Address:
    - iv. City:
    - v. Pin:
    - vi. Mobile Number:
2. We have shortlisted 3+ teams from each college. We have named these teams Team A, Team B, Team C, etc. To find out the name of your team, refer to our website [www.uniti.in/analog-design-contest](http://www.uniti.in/analog-design-contest) . This information will be available on the website by **July 4, 2011**.
3. Each team is expected to perform one experiment assigned to the team (details will be available on the website by July 8, 2011).
  - a. This experiment will have a simulation component and a hands-on component on the Analog System Lab Kit.
  - b. Four Problem Statements will be uploaded on the website [www.uniti.in/analog-design-contest](http://www.uniti.in/analog-design-contest) by **July 8, 2011**
  - c. You must submit the solution on CMT website and send us the hardcopy of the solution by **August 30, 2011**
  - d. Phase 1A has 20% weightage in the final evaluation.
  - e. It is expected that teams will work independently on the solution. If we find evidence of malpractice, we will disqualify the team.

### Phase 1A - Analog Design Challenge: Solution Format

1. Each experiment will need you to perform a design task, simulate your design and conduct a hands-on experiment on the Analog System Lab Kit.
2. For performing the simulation part, you can get started immediately and need not wait for the kit to reach your college. You will need a simulator such as TINA, SPICE, or Microcap for the simulation of the design. For example, you can download TINA-TI from the following website <http://www.designsoftware.com/home/English>
3. Simulate your design and obtain the necessary plots.
4. Build your circuit using ASLKv2010 Starter Kit and verify that it works as expected. Apply the inputs using signal generator and obtain the output results on the CRO.
5. Take a picture of the circuit setup in the lab.
6. Capture the output of the CRO.
7. Take the required readings and tabulate it.
8. Write a report in the following format.
  - a. Brief theory about the experiment (not more than one page)
  - b. Explain how you designed the circuit (values of passive components, etc.)
  - c. Explain your simulation results and show the plots.
  - d. Explain the results obtain using the actual circuit and show the CRO output.
  - e. Summarize your learning.

### Important Dates

We must receive the information about Mentor of Team A by **July 5, 2011**. Your college will receive the ASLKv2010 Starter Kit by **July 20, 2011** and you must submit the solution to us on CMT as well as send the hardcopy no later than **August 30, 2011**.

### About the Analog System Lab Kit

The Kit comes with an "Analog System Lab Manual" written by Dr. K.R.K Rao and Dr. C.P. Ravikumar – TI India. The manual describes 10 experiments related to Analog System Design which are suitable for UG/PG students of Electrical Sciences. Also there are video lectures on each of the experiment by Dr. K.R.K Rao which can help in better understanding of the experiment. You can download the manual and video lectures from [www.uniti.in](http://www.uniti.in) (see "Teaching Materials")