

Notes to the Future: Modulated LED

- A. Any suppliers that should be listed for next year's students
You should be able to find everything at Radio Shack even the radio and speaker.
The solar cell that we got from Radio Shack was fine.
- B. Any unexpected difficulties encountered in construction or operation of your exhibit
Do not screw the screws in too tightly or the wires will break.
Although the materials list does not say this, you will need a drill and screw driver to put in the screws in the circuit.
If the solar cell does not have wire leads already attached you will have to solder your own leads to the solar cell which is difficult.
- C. Suggestions for improving your exhibit
Use a focus shield to focus the light onto the solar cell. This also cancels some of the noise from the lights around you. You can just make it out of a strong piece of paper such as a manila folder.
To get a louder sound, get a Jumbo LED or 10mm Red LED. It is very powerful. It fits easily into an electrical circuit and has a clear lens. One 5mm Red LED or two 5mm Red LED's does not work as well as this. This LED is essential to a louder sound.
- D. Tips for dealing with
If someone brings a camera, tell them that they can "see" the infrared light from the remote with their camera and they can take a picture of it.
If someone is waiting to look at your exhibit, it is good to have a poster with some principles and cool pictures that can engage them.
Even though the noise during Exploratorio is very loud, just have them lean in to hear the speaker.
- i. Little kids
To interest the kids more, have them put their hand in between the solar cell and the light. This stops the sound and does not allow the light to hit the solar cell. Also, bring a remote and camera. You can show them that when you point the remote toward the solar cell and press buttons on the remote, you hear sounds. Make sure, though, that when you are showing that the solar cell can detect sound, you have them block the light from the LED that is hitting the solar cell. Show them that the camera can "see" the infrared light, but we, humans, cannot. You can use the modern example of someone standing in your way when you are trying to change the channel of the television.
 - ii. Parents at your exhibit
To interest the parents, you can have them do the same stuff that you had the kids do. The example with a television really helps.
- E. All the good advice in the N2tF by previous exhibitors
Buy the items early and build early. Do not procrastinate! You may find that some materials are faulty and need to find better materials. You will have to try many things to get a loud sound.

- F. Anything else you wish you had been told before Exploratorio
Try to find a good radio station with a clear signal before hand.
Bring an extra battery and Velcro to the day of Exploratorio. You can attach the extra battery if the other one stops working on top of the original battery with Velcro. Always be prepared with extra supplies.