Physics 536 Spring 2008 Project - Due April 25th

Instructions: Pick a particular electronic component, device or small system, and prepare a 2-3 page report describing applications, operating principles, design considerations and examples.

For example, if you selected lock-in amplifiers you would describe how they are used for making very low-noise current and voltage measurements on devices that are maintained at very low temperatures.

You can use a variety of resources for picking a topic. Some suggestions are

Physics Today
Keithley http://www.keithely.com Look at the advertisements
Analog Devices http://www.analog.com Measurement devices
Dallas/Maxim Semiconductors http://www.maxim-ic.com Analog/Digital integrated circuits
ATMEL http://www.atmel.com/products/CCD Integrated circuits
Fairchild Semiconductor http://www.fairchildsemi.com CCD image sensors
ON Semiconductor http://www.onsemi.com All kinds of stuff
Vishay http://www.vishay.com All kinds of stuff
Texas Instruments http://www.ti.com Active discrete components
AVX Corp. http://www.avxcorp.com Capacitors

Examples of devices or instruments you might want to describe include

• Lock-in amplifiers
• Instrumentation amplifiers
• Different types of capacitors
• Component packaging
• Designing with ECL logic
• CCD image sensors
• Overview of VME bus protocols
• Fiber optics drivers/receivers

Check with me if you need help picking a topic or want to discuss the scope of your topic.