



Internet Research on Switching Power Supplies

Acknowledgements: Developed by Palmerino Mazzucco and Roger Harlow, members of electronics faculty of Mesa Community College, Mesa Arizona

Special Note: The Drill Down Activity: Disassembly and Analysis of Switching Power Supplies should be completed before starting this one.

Time Required: 1-2 Hours

Equipment and Tools: Computer with Internet connection

Learning Objectives

1. Collect data and relevant information on the purpose, function, types, and/or applications of switching power supplies using the Internet.
2. Complete a concise report on the findings.
3. Provide a summary of the findings to other students to contribute to their knowledge and understanding of SMPS.

Individual Activity: This activity is to be completed individually.

Performance and Task Procedures

1. Use a suitable search engine such as Google.com or Yahoo.com to research switching power supplies. Start the search by entering “switching power supply” as the term to search on (do not include quotes).
2. Choose a particular topic on power supplies by reading the description of SMPS provided by the WRE module, or find a topic by searching through the various web sites that are related to the topics discussed. Use your report, components list, and other parts of the report from the Drill Down Activity: Disassembly and Analysis of Switching Power Supplies to guide your Internet research.
3. Locate information about several of the components by using keywords that relate to the questions you want to answer about the different aspects of the target SMPS disassembled. Some keywords to consider are: filter, charge pump, rectifier, transformer, buck, switching regulator, inverter, flyback converter, DC-DC converter, regulator, current limit, zener, or the actual part numbers of your components.



4. Identify at least two power supply manufacturing company sites. Download data sheets on power supplies, product lists, or a white paper on the switching supplies they manufacture. Save and print graphics that can help with product descriptions.

Deliverables: Final Report

The deliverables include a written report and a 2 minute oral presentation that includes the following:

1. The purpose and operational specifications of at least three of your identified SMPS components including important specifications that might exist such as
 - a. Maximum voltages
 - b. Currents
 - c. Power ratings
2. A description of the advantages and disadvantages of the particular type of SMPS
3. A comparison of the application of this SMPS with a linear power supply if it was used for the same purpose including advantages or disadvantages of choosing using the linear power supply or the SMPS
4. Conclusions about switching power supplies

Scoring or Grading Criteria

It is the instructor's decision whether to grade this activity or not.

Reports should exhibit the following characteristics:

- Concise, to the point, and easily understood by other students
- Well written and presented with proper sentence structure and no grammar errors