

Design Document Format

1. Introduction.

This section describes the device in general terms so that the reader knows what is being designed.

2. Scope

This section specifies the scope of the *document*. The scope tells the reader what the document covers, and more important, what it doesn't cover.

3. Design Overview

This section should include the following:

2.1. Requirements.

In this section, enumerate the requirements of the *design*. Most of this information will be provided to you by your client (the person asking you to do the design).

2.2. Dependencies.

In this section, enumerate the things that your design depends on, for example a 5 volt power source.

2.3. Theory of operation.

In this section, give a high-level overview of the design. Briefly describe each functional block and how they work together.

2.4. Design Alternatives (if applicable).

Briefly describe other approaches to the design and for each explain why that approach was not taken.

4. Design Details

This section addresses the design in detail, both what it is and why. Enough information should be given so that someone with an engineering background could implement the design. For example, timing analysis, schematics and code snippets are an appropriate level of detail. Data sheets or software listings are not. That would be too much detail. Still, expect over half of your document (not counting the appendices) to be design details, so use subsections for clarity.

5. Testing

This section has two main purposes. First to describe the tests that are used to verify the design meets the requirements, and second, to document the results of those tests for your implementation. State for each test: (a) the test procedure, (b) the observations to verify, (c) your observations, and (d) which requirements are applicable. Be sure each requirement is covered by at least one test.

6. Conclusion

This section summarizes test results makes observations about the performance and functionality (or lack thereof) of the design. Also, not every design is optimal. It is likely that you have acquired some insight along the way that will improve the design for next time. This section is a good place to put that kind of information.

Appendices

This is the appropriate place to put items for reference only, such as software listings.