

Aviator Design Document

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Figure 0.0.1: [Caption]

Contents

1	Introduction	9
1.1	Executive Description	9
1.2	User Stories	9
2	Design Requirements	10
2.1	Requirements	10
2.2	Factors Influencing Requirements	11
2.2.1	Public Health, Safety, and Welfare	11
2.2.2	Cultural Factors	11
2.2.3	Social Factors	11
2.2.4	Environmental Factors	11
2.2.5	Economic Factors	11
3	System Overview	12
3.1	System Block Diagram	12
3.2	System Activity Diagram	14
3.3	System Mechanical Design (Extra Credit)	16
3.4	Integration Approach	18
3.5	System Photographs	19
4	Subsystems	21
4.1	Subsystem 1: [Subsystem Name]	22
4.1.1	Subsystem Diagrams	22
4.1.2	Specifications	22
4.1.3	Subsystem Interactions	22
4.1.4	Core ECE Design Tasks	22
4.1.5	Schematics	22
4.1.6	Parts	22
4.1.7	Algorithm	22
4.1.8	Theory of Operation	22
4.1.9	Specifications Measurement	22
4.1.10	Standards	23
4.2	Subsystem 2: [Subsystem Name]	26
4.2.1	Subsystem Diagrams	26
4.2.2	Specifications	26
4.2.3	Subsystem Interactions	26
4.2.4	Core ECE Design Tasks	26
4.2.5	Schematics	26
4.2.6	Parts	26

4.2.7	Algorithm	26
4.2.8	Theory of Operation	26
4.2.9	Specifications Measurement	26
4.2.10	Standards	27
4.3	Subsystem 3: [Subsystem Name]	30
4.3.1	Subsystem Diagrams	30
4.3.2	Specifications	30
4.3.3	Subsystem Interactions	30
4.3.4	Core ECE Design Tasks	30
4.3.5	Schematics	30
4.3.6	Parts	30
4.3.7	Algorithm	30
4.3.8	Theory of Operation	30
4.3.9	Specifications Measurement	30
4.3.10	Standards	31
4.4	Subsystem 4: [Subsystem Name]	34
4.4.1	Subsystem Diagrams	34
4.4.2	Specifications	34
4.4.3	Subsystem Interactions	34
4.4.4	Core ECE Design Tasks	34
4.4.5	Schematics	34
4.4.6	Parts	34
4.4.7	Algorithm	34
4.4.8	Theory of Operation	34
4.4.9	Specifications Measurement	34
4.4.10	Standards	35
5	Bibliography	38
6	Appendices	39

List of Figures

0.0.1 [Caption]	2
3.1.1 System Block Diagram	13
3.2.1 System Activity Diagram	15
3.3.1 System Mechanical Design	17
3.5.1 [Photo Name]	20
4.1.1 Subsystem Block Diagram	24
4.1.2 [Schematic Name]	25
4.2.1 Subsystem Block Diagram	28
4.2.2 [Schematic Name]	29
4.3.1 Subsystem Block Diagram	32
4.3.2 [Schematic Name]	33
4.4.1 Subsystem Block Diagram	36
4.4.2 [Schematic Name]	37

List of Tables

1 Revision Log 7

Revision Log

Date	Revision	Changes
5/3/2024	v0.1	Initial Release
[Copy]	[and]	[Replace]

Table 1: Revision Log

Glossary

- **3D audio technology** Simulation that creates the illusion of sound sources placed anywhere in 3 dimensional space, including behind, above or below the listener.
- **API** Application Programming Interface.
-

1 Introduction

1.1 Executive Description

Retro nearby flight information display.

1.2 User Stories

2 Design Requirements

2.1 Requirements

1. [Type here **DD1**+]
2. [Type here **DD1**+]

2.2 Factors Influencing Requirements

2.2.1 Public Health, Safety, and Welfare

1. The display must not interfere with user's well-being by, for example, displaying at excessive luminosity or updating rapidly in a distracting manner.
2. The device must not infringe on any person's reasonable expectation of privacy.

2.2.2 Cultural Factors

1. The device must be language-agnostic wherever possible.
2. The design must be culturally neutral cannot presuppose exposure to similar technology.

2.2.3 Social Factors

1. The physical device should be easily replicated with widely available parts.
2. The code for the device must be open-source and well-documented.

2.2.4 Environmental Factors

1. The device should be as durable and environmentally friendly as possible so as not to contribute to e-waste.
2. The device must not contribute to noise or visual pollution of any space.
3. The device must be energy-efficient.

2.2.5 Economic Factors

1. The device must minimize construction and recurring costs.
2. The device must not infringe on right to repair.

3 System Overview

3.1 System Block Diagram

[DD1+]



Figure 3.1.1: System Block Diagram

3.2 System Activity Diagram

[DD1+]



Figure 3.2.1: System Activity Diagram

3.3 System Mechanical Design (Extra Credit)

[DD3+]



Figure 3.3.1: System Mechanical Design

3.4 Integration Approach

[**DD3+**] [Theory behind the system design, with reference to subsystem integration within your system – i.e., explain how it is supposed to work, but not whether it did actually work]
[Type here]

3.5 System Photographs

[**DD3+**] [Photograph of assembled system, intended to highlight user interaction / controls. If system is split into multiple parts, show a composite of more than one photograph with all key user interactions / controls.]



Figure 3.5.1: [Photo Name]

4 Subsystems

4.1 Subsystem 1: [Subsystem Name]

4.1.1 Subsystem Diagrams

[DD1+]

4.1.2 Specifications

1. [Type here DD1+]

4.1.3 Subsystem Interactions

[Type here DD1+]

4.1.4 Core ECE Design Tasks

[DD1+ Write tasks and course that helps accomplish that task]

- **ECE xxxxx:** [Type the relationship here.]

4.1.5 Schematics

[Type here DD2+]

4.1.6 Parts

- [Type here DD1+]

4.1.7 Algorithm

[Type here DD1+]

4.1.8 Theory of Operation

[Type here DD2+]

4.1.9 Specifications Measurement

[DD3+ Every specification here should match the specification above.]

1. [Copy specification here.]
[Explain the specification here. Add photoes if necessary.]

4.1.10 Standards

[DD1+]

- [Standard Name]: [Describe the standards and explain the connection]



Figure 4.1.1: Subsystem Block Diagram



Figure 4.1.2: [Schematic Name]

4.2 Subsystem 2: [Subsystem Name]

4.2.1 Subsystem Diagrams

[DD1+]

4.2.2 Specifications

1. [Type here DD1+]

4.2.3 Subsystem Interactions

[Type here DD1+]

4.2.4 Core ECE Design Tasks

[DD1+ Write tasks and course that helps accomplish that task]

- **ECE xxxxx:** [Type the relationship here.]

4.2.5 Schematics

[Type here DD2+]

4.2.6 Parts

- [Type here DD1+]

4.2.7 Algorithm

[Type here DD1+]

4.2.8 Theory of Operation

[Type here DD2+]

4.2.9 Specifications Measurement

[DD3+ Every specification here should match the specification above.]

1. [Copy specification here.]
[Explain the specification here. Add photoes if necessary.]

4.2.10 Standards

[DD1+]

- [Standard Name]: [Describe the standards and explain the connection]



Figure 4.2.1: Subsystem Block Diagram



Figure 4.2.2: [Schematic Name]

4.3 Subsystem 3: [Subsystem Name]

4.3.1 Subsystem Diagrams

[DD1+]

4.3.2 Specifications

1. [Type here DD1+]

4.3.3 Subsystem Interactions

[Type here DD1+]

4.3.4 Core ECE Design Tasks

[DD1+ Write tasks and course that helps accomplish that task]

- **ECE xxxxx:** [Type the relationship here.]

4.3.5 Schematics

[Type here DD2+]

4.3.6 Parts

- [Type here DD1+]

4.3.7 Algorithm

[Type here DD1+]

4.3.8 Theory of Operation

[Type here DD2+]

4.3.9 Specifications Measurement

[DD3+ Every specification here should match the specification above.]

1. [Copy specification here.]
[Explain the specification here. Add photoes if necessary.]

4.3.10 Standards

[DD1+]

- [Standard Name]: [Describe the standards and explain the connection]



Figure 4.3.1: Subsystem Block Diagram



Figure 4.3.2: [Schematic Name]

4.4 Subsystem 4: [Subsystem Name]

4.4.1 Subsystem Diagrams

[DD1+]

4.4.2 Specifications

1. [Type here DD1+]

4.4.3 Subsystem Interactions

[Type here DD1+]

4.4.4 Core ECE Design Tasks

[DD1+ Write tasks and course that helps accomplish that task]

- **ECE xxxxx:** [Type the relationship here.]

4.4.5 Schematics

[Type here DD2+]

4.4.6 Parts

- [Type here DD1+]

4.4.7 Algorithm

[Type here DD1+]

4.4.8 Theory of Operation

[Type here DD2+]

4.4.9 Specifications Measurement

[DD3+ Every specification here should match the specification above.]

1. [Copy specification here.]
[Explain the specification here. Add photoes if necessary.]

4.4.10 Standards

[DD1+]

- [Standard Name]: [Describe the standards and explain the connection]



Figure 4.4.1: Subsystem Block Diagram



Figure 4.4.2: [Schematic Name]

5 Bibliography

[Here are some examples. IEEE format can be found on [Purdue OWL](#).]

References

- [1] “Data Platform - Open Power System data,” Apr. 15, 2020. https://data.open-power-system-data.org/household_data/
- [2] Author, ”Title,” *Journal*, volume, number, page range, month year, DOI.
- [3] Author. ”Page.”Website. URL(accessed month day,year)

6 Appendices

[This section is mainly designed for code. You can directly generate a somewhat decent display of your code file or psuedo code by using the template provided below. You can have as many appendix as you want. In the document, you can refer to the code posted here instead of pasting the whole code in the body.]