**Test Plan**

**Software Defined Radio**

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**Test Plan Revision History**:

*The revision block documents major revisions to the test plan as the project progresses. Major updates might include adding or removing a test, adding a limitation to all tests, reassigning tests to different members, etc. Spelling mistakes and other minor adjustments do not need to be summarized in this block. Add versions to the block as necessary (there may be more than 2).*

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Revision Date | Description | Author |
| 0.1 | 11/19/18 | Parts assigned | James Bell |
|  |  |  |  |

*Once you have completed the required information for each section, you must update the table of contents. It is linked to the section headers so DO NOT DO THIS MANUALLY. Right click anywhere on the table of contents > Left click “Update Field” > Make sure “Update page numbers only” is selected > Left click “okay”.*

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# Overview

In this Project the end goal is an operational software defined radio for educational

purposes. It will be a half-duplex device operating in the North American High

Frequency Range as allocated by the North American International Telecommunications

Union.

# Features to be tested/not to be tested

## Features to be tested

The following are the major functionalities of the application that need to be tested in the testing process:

### Radio able to turn On and Off without unplugging from power source

*List the features you will test. Include at least all of the features listed in the Functional Spec. Each of these will become a Test Case in Section 4. It is less frustrating to test and make sure chunks of a system work before testing the whole system and having to work backwards to identify the problem.*

### <Second Feature>

## Features not to be tested

*List specifically the features you will NOT be testing, and WHY. As an example, you will not test a feature because*

* *It is guaranteed by design*
* *It is an off-the-shelf component*
* *The equipment (or time) does not exist to test the feature*
* *and so on*

### <First Feature>

### <Second Feature>

# Testing Approach

|  |  |
| --- | --- |
| *Feature Name 2.1.1* |  |
| Approach | *Summarize how you will perform the tests. Include the relevant level of detail, such as if the test must be performed at night or underwater. Will others be performing the test for you? Where will it be performed? Be specific.* |
| Pass/Fail Criteria | *Describe the Pass/Fail criteria you will use, and what constitutes success in each case. All criteria must be objective and measurable. For example, “all icons centered” is objective and measurable; “all icons look nice” is not.* |
| Verification Method | *Describe how you will be measuring your criteria. Essentially, how do you know if you succeeded? Will you be checking alignment with your eyes, or with a ruler? Discuss any important limitations of your measuring technique. Your criteria can only be as accurate as your measuring device.* |

|  |  |
| --- | --- |
| *Feature Name 2.1.2* |  |
| Approach |  |
| Pass/Fail Criteria |  |
| Verification Method |  |

# Test Cases

*This section is the most important - it is where you list each test specifically, how it will be done, and what will be measured or examined.* ***You must have a test case for each feature listed in the Functional Specification.***

*A test might cover multiple features. You may have multiple test cases if a listed feature is broad (e.g. environmentally resistant). A test case might require multiple tests if the feature is a statistic (e.g. 95% success over 100 trials).*

*“Tested By” lists the people responsible for conducting the test. This will usually be team members, unless someone else is required.*

*Make the Name of each test clear so that it can be understood why it matters to the larger project.*

*The Description is a summary and needs to match description in the Testing Approach section.*

*List the components of your project that you are testing in the “Items to be Tested” box.*

*For the input and output, consider what the test is doing and the expected outcome.*

*List the resources (materials, consumables, equipment, etc.) required to perform all necessary testing. All resources should be accounted for, even if they use the same resources as another test case. You do not need to list the components of your project in this space.*

*For the procedural steps, make the Description more concrete. Describe the steps in a relevant level of detail. Think of it like a recipe from a cookbook. If the way a step is performed is critical to the test, it may require more detail. Add more steps as necessary.*

*This form is an example and is one size fits all.*

# Test Case #1: <Brief Description and/or Name>

|  |  |  |  |
| --- | --- | --- | --- |
| **Tested By:** | |  | |
| **Test Case Number** | | 1 | |
| **Test Case Name** | |  | |
| **Test Case Description** | |  | |
| **Item(s) to be tested** | | | |
| 1 |  | | |
| 2 |  | | |
| 3 |  | | |
| 4 |  | | |
| **Specifications** | | | |
| **Input** | | | **Expected**  **Output/Result** |
|  | | |  |
| **Resources Required** | | | |
| 1 |  | | |
| 2 |  | | |
| 3 |  | | |
| **Procedural Steps** | | | |
| 1 |  | | |
| 2 |  | | |
| 3 |  | | |

# Test Case #2: <Brief Description and/or Name>

|  |  |  |  |
| --- | --- | --- | --- |
| **Tested By:** | |  | |
| **Test Case Number** | | 2 | |
| **Test Case Name** | |  | |
| **Test Case Description** | |  | |
| **Item(s) to be tested** | | | |
| 1 |  | | |
| 2 |  | | |
| 3 |  | | |
| 4 |  | | |
| **Specifications** | | | |
| **Input** | | | **Expected**  **Output/Result** |
|  | | |  |
| **Resources Required** | | | |
| 1 |  | | |
| 2 |  | | |
| 3 |  | | |
| **Procedural Steps** | | | |
| 1 |  | | |
| 2 |  | | |
| 3 |  | | |

# Testing Schedule

*The testing schedule is a guideline to help you think about the order you will be testing features. If one feature depends on a different feature, tool, part, or person, make sure that they are planned accordingly. If a test case requires multiple tests, the test date may be a range of dates. Early testing helps you to gauge your progress and identify areas that need work.*

|  |  |  |  |
| --- | --- | --- | --- |
| Test Dates | Test Case Number | Test Name | Responsible Engineers |
|  | #1 |  |  |
|  | #2 |  |  |