

Full Wireless Communication Device

Project documentation.

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1 Introduction

1.1 Goals

The main objective is to send a **500kB** file from a 100 m open-air gap with the battery powered device.

[2]

[1]

[3]

2 Schematics

2.1 Sub Schematics

3 Printed Circuit Board

3.1 Sub PCB

4 Firmware

```
1  #include <iostream>
2
3  #include <Arduino.h>
4
5  void setup() {
6      Serial.begin(9600);
7      pinMode(LED_BUILTIN, OUTPUT);
8  }
9
10 void loop() {
11     digitalWrite(LED_BUILTIN, HIGH);
12     delay(500);
13     digitalWrite(LED_BUILTIN, LOW);
14     delay(500);
15 }
```

4.1 Sub Firmware

References

- [1] Gene F. Franklin, Abbas Emami-Naeini, and David Powel. *Sistemas de Controle para Engenharia*. 6th ed. Porto Alegre, Brasil: bookman, 2013.
- [2] Roger Penrose. *Is Math Invented or Discovered? - Closer To Truth*. Youtube. 2020. URL: <https://www.youtube.com/watch?v=ujvS2K06dg4>.
- [3] Luca Schenato. “To Zero or to Hold Control Inputs With Lossy Links?” In: *IEEE Transactions on Automatic Control* 54.5 (May 2009), pp. 1093–1099.