Reinvented Radio

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## Introduction

We live in a world where cultural exploration and personal preference is easier than ever to explore, one of the leading industries in which this happens; is the music industry. Never have there been such a broad selection of music genres. Some are niche, some are mainstream. There is a genre for everyone.

Almost hand in hand with the revolutionary rise of the music industry, are the devices on which to listen to this music. Starting out with the big and bulky stereo receivers, all the way to the present day, where more artistic designs of speakers are becoming mainstream.

However, buried in all these new, artistic and creative music devices; another, far bigger, genre of audio devices is slowly rising. Retro stereo systems.

Audiophiles, name for audio-enthusiasts, have been hoarding old radios, stereos, record players, walkman’s and every other pre 1985 audio device known to man. Not only for their arguably pretty exteriors, but supposedly their guts are of sublime quality.

I had to see for myself, and I decided to give it a try; I dug up an old stereo receiver of my grandpa and have been listening to some music for the last month.

While the music is especially great and sounds very “full”. There usually is a plethora of knobs and buttons which can be used to further tune the output audio a bit.

Nothing really screams: “I am an old piece of hardware, and I am outdated”, except for getting an input signal.

## Problem

While being great, old audio hardware usually is very limited when it comes to audio input. You always have some sort of wired audio input, aux, 3.5mm, 2.5mm; some even use coax.

Our phones, if relatively new, usually don’t support wired audio output anymore. We have Bluetooth. This means we cannot connect our phone to our amazing audio system.

## Solution

Integrate a small, embedded device which adds a wireless functionality to older audio hardware. This functionality must be compatible with (my) phones.

## Planning

22 dec: first prototype with Bluetooth connection working; check if hardware is still needed in the same way; maybe buy extra?

29 dec: revise prototype, integrate possible new hardware

5 jan: finish testing prototype, especially connectivity etc; take a look at possible equalizer configurations with potentiometers (preprocessing signal on receiver side)

13 jan: Integrate preprocessing with prototype

20 jan: finished product.

## Progress

This chapter contains the progress to the solution presented at the start of this document in a chronological order.

### First thoughts

When starting a project, naturally most people have already thought about how to go to their end goal. Usually this thought pattern is either somewhat right; or downright wrong. Though we will see how that works for us.

Firstly, hardware. What are we going to use, why; and most importantly: where do we get it?

Very generally, we need two pieces of hardware:

* A means of receiving and outputting a wireless audio signal (Some integrated circuit board)
* An already working audio system.

Secondly, phasing. How is this project going to be divided? Naturally, a solution isn’t found on day one; and the road towards the solution isn’t linear. Therefore I would like to introduce small testing/prototyping/POC phases before calling it quits.

The phasing would consist of the following phases:

1. Hardware Research
2. Small scale POC
3. Integrating the small POC into a bigger POC
4. Validating the utility of the second POC
5. Conclusion
6. Reflection

I will adhere to these phases as individual chapters in the rest of this document, this keeps its tidy and very clear.