Pond/Alex

An user experience exploration of the CD-format
Tim Andersson

Pond/Alex

An user experience exploration of the CD-format
Tim Andersson

Abstract

Since around 2015 there has been a huge vinyl revival going on world wide. The group which is responsible for this resurgence is mainly generation-z. When you ask someone of this generation what they associate with this format you will often hear the word "nostalgic".

This "nostalgic" revival comes, however, with consequences. The material vinyl record is made of is an highly unstable material called PVC which deteriorates when it comes in contact with oxygen and creates toxic fumes. This makes the lifecycle of the format short and non-recyclable due it also contains lead

The most sustainable physical music format would be none at all, this is however not a realistic expectation. There is however a format which does not deteriorate on its own like vinyl and cassette tapes which also provides a much better sound quality, the compact disc, also known as the CD

When people hear the word CD they usually associate it with broken cases lying in the car and weird records such as "Hits for kids" which you could buy at your local gas station. This is mainly due to the fact that we have not had the time to romanticize the CD like other formats. A factor which also makes the CD hard to love is that there is currently no generation which is old enough to buy record that did not grow up with CD as a necessity, just as generation-z did not grow up with the vinyl as a necessity

This all boils down to a prediction that a CD revival will take place in 5-10 years. This is when we have a new generation of adults which has not experienced the necessity of the format, which will make it easier to enjoy the format. In this project I explore what the current experience around the format is and what it could be in order to aid this future revival.

Table of content

Introduction

Vinyl, maybe it is time we had an intervention

The journey for my bachelor project began unexpectedly one evening in December of 2020 when I came across a youtube video called "Vinyl: Maybe it is time we had an intervention" by Ben Jordan. This video was a constructive critique to the ongoing vinyl revival and made a very strong case on why we should not aid it.

The first problem brought up was the material the records are made of which is called PVC. This plastic material is highly unstable and deteriorates over time by just coming in contact with air, creating toxic fumes. The material also contains heavy metals such as Led which makes it non-recyclable and are therefore burned upon disposal, which in turn releases additional toxic gases such as dioxin.

Another problem Ben brings up in the video is the argument of audio quality. There are many audiophiles who swear on their life that a vinyl record sounds better than the digital counterpart. This is something which gets debunked quickly in the video where Ben references a study made by Texas University where they made blind tests comparing digital and analogue source sound. The results showed that an overwhelming majority preferred the digital format. They even went to the extent of comparing vinyl records to digital recordings of vinyl records where the latter was preferred.

This video broke my heart a little bit and got me thinking. No matter how much I loved the vinyl format, it was now hard to justify continuing this hobby. There are many reasons why people like myself like this format which will be discussed further, but this finding really got me thinking and became the starting point for my bachelor project.

Crisis

Being a music enthusiast and vinyl collector myself I had my view on a format I loved shattered in front of me after seeing this video. There were so many things I enjoyed with the format such as the big sleeves which could be used as art pieces, the ceremonial-like process of putting on a record and the hunt of finding rare and exciting records.

I could however no longer justify this hobby and I knew I had to give up. This made me think of if I could replace this music-hobby with something similar in terms of collect-ability, while being sustainable and having an interesting interactive "ceremony". This led me down into a rabbit hole of formats artists have released music on before. This ranged from the common digital download, CD and vinyl, but also to the cassette which is making a comeback. It did however turn very interesting when it came to smaller artists which were not afraid of doing something different and released their music on things like usb sticks, floppy discs and even on custom made game boy cartridges.

The artists who went the extra mile of doing something different might not have a very large fan base, but a very loyal one which resulted in all of the different records being sold out in no time.

King Gizzard and The Lizzard Wizard live in Sydney

King Gizzard and The Lizzard Wizard Polygonwanaland floppy disc

Digital Brain, Analogue heart

Finding out about the indie-music-communities music releases on weird formats made me inspired to move in the direction of creating an alternative music format. Taking previous findings into account I made the conclusion that if this were the case that it would need to be a digital format which was very tactile or had some interesting interaction.

Guitar pedal manufacturer company "Chase Bliss Audio" has the slogan "Digital Brain, Analogue heart" which is amazing. This works very well in the world of audio where you in general want the warmth and characteristic sound of analogue hardware, but still want the ease of use and performance of digital technology.

The idea of utilising the strengths of analogue and digital technology is something which really set the tone for my project as a whole and is something I worked very heavily with.

Initial brief

The initial brief for this project became:

"Design an interactive physical music format and player which utilises the performance of digital technology".

Being inspired by the very unusual formats used by smaller artists, I decided to make this project about creating a music format with many of the good qualities of a vinyl record, having digital performance, but also being easily accessible for smaller artists to print their music on. This was however very early in the process and the brief did change quite drastically later down the line.

"Design an interactive physical music format and player which utilises the performance of digital technology"

Chase bliss guitar pedal "Mood"

Schedule

This was the initial schedule put up for this project. However, the design process is not very linear and being the first time setting up a hard schedule for a project led to it eventually getting obliterated. My guess is that it followed the schedule about 50% which is still a win in my book, especially under the circumstances that the project took place during a pandemic lock-down.

Activity	Time	Week	
Research/planning	32h	4	< First presentation
Research/planning	20h	5	
Interviews	24h	6	
Ideation	20h	7	
Sketching	20h	8	
Rough prototype	28h	9	
User test	16h	10	
Sketching #2	12h	11	< Kick off!
CAD	16h	12	
Visualisation	24h	13	
Documentation	16h	14	< First hand in
Final prepara-	40h	15	
Buffer	24h	16	< Final presentation

The rough overview of the schedule

Time					
8:00-12:00	Planning explo	Book	Ritual/Habits book		Users
13:00-17:00	Personas docu	Book	Prep		Users

Week 5 (Feb)	monday	tuesday	wensday	thursday	friday
Time					
8:00-12:00				9:00 Anna crit	
13:00-17:00				fabian, elias	salim

Week 6 (Feb)	monday	tuesday	wensday	thursday	friday
Time					
8:00-12:00		Target group			Conclude
13:00-17:00		Target group	Interview	Interview	Conclude

Week 7 (Feb)	monday	tuesday	wensday	thursday	friday
Time					
8:00-12:00		Bussines mc	Bussines mc		Sketch
13:00-17:00		Bussines mc			Sketch

A little piece of the Google spread sheet i used during the project as a schedule and weekly planer. Not very pretty, but was very handy

Research

What kind of research?

The research I conducted for this project can be divided into
3 categories.
-Literature
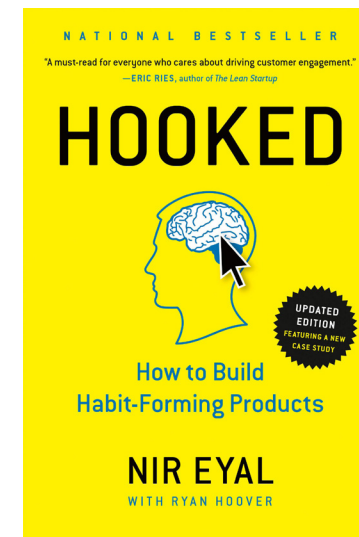-Interviews
-Exploratory

Literature

The Green Imperative by Victor Papanek

This is a book which I read in another course going parallel with
the exam project which had a big influence on the final result.
The book covers many topics, but the overall theme and message
is sustainable design and goes through Papaneks thoughts and
visions of what a sustainable future society should look like.

Hooked by Nir Eyal

This book was recommended to me by a friend for this pro-
ject and gave an incredible amount of insight into how peo-
ple act and why. It is presented as a book which teaches you
how to design "habit forming products", but to be honest it is
just about how to design addiction.

The focus of the book is mainly in the digital realm such as
social media apps and games, this is however very helpful to
understand people in general due it explains the psychology
behind the decision we make and how primal instincts play a
role in it.

The easiest way to save resources and energy and to reduce waste is to use less. This means consuming less, buying less, being Green, making do with what we have already—establishing an Imperative to rid ourselves of all the unnecessary gadgets and duplications that so hideously clutter up our lives.
Victor Papanek
Thames &Hudson

NATIONAL BESTSELLER

"A must-read for everyone who cares about driving customer engagement."
—ERIC RIES, author of *The Lean Startup*

HOOKED

UPDATED EDITION FEATURING A NEW CASE STUDY

How to Build
Habit-Forming Products

NIR EYAL
WITH RYAN HOOVER

Important things I learned from Hooked:

Internal/external triggers:

Triggers are something which leads to some kind of action. When it comes to a digital app we get notification on the regular which lets us know if we have received a message, a friend has tagged you in a photo or if it is time to collect your daily reward in a mobile game. What these notifications are is a reminder that the app exists and what kind of action they want you to take. All of this are external triggers and is an attempt to get you to use their product.

The interesting part however is that the behaviour of using these apps on the regular can create internal triggers over time where the notification is more or less no longer needed. Instead you start to associate a feeling you have with a solution. An example of this would be that when you are bored you automatically start to scroll instagram to entertain yourself, the feeling boredom has now become a trigger for you to scroll Instagram.

Reward systems:

I also learnt from the book that one of the most addicting things is the variable reward. This really stimulates our minds and is the reason why things like gambling and video games can be really addicting. The process to a variable reward can be broken down into 3 different processes.

The tribe:

This is often some kind of validation from the community you engage in. It could be in the form of likes from a post on facebook or in the end screen of a video game that you were the top performer in the game.

The hunt:

There is never a 100% chance that you will succeed in a hunt, this is why it is exciting to go to events like flea markets to see if you can manage to "hunt" a rare item or to make a good deal. This is also the mechanism behind gambling.

The self:

The completion of a puzzle, game or a book does not give you the thrill of the hunt or the validation of the tribe, but it does bring closure and a sense of accomplishment of something you have made progress on for a time.
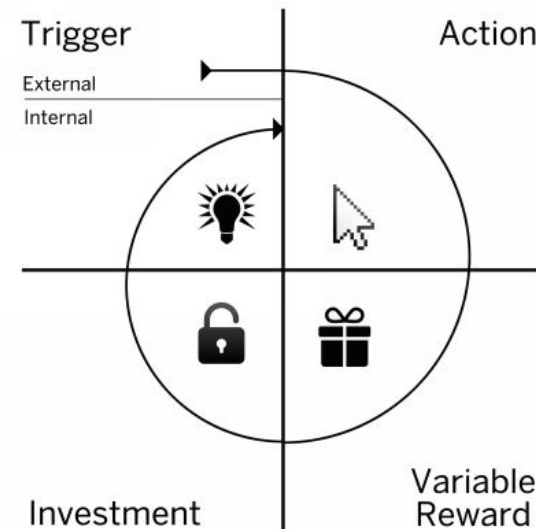
The "Hook" model

Interviews

I did a set of 4 interviews of the age group 22-27 of people who own and listen to vinyl records. The interview was mainly structured and was conducted in order to understand how the user of analogue formats buys, listens, and stores their records.

What setting do people usually listen to vinyl in?
Usually alone when they want to relax or with a friend where it becomes more of a music sharing event.

How often do people listen to vinyl?
From a few times a week to a few times every half year.

How often do people purchase a vinyl record?
1-5 records a year.

Where do you usually purchase your records?
This varied a lot, some people did it during a "hunt" visiting their stores. Some other people purchased it online after investing a lot of time on their own listening to the specific record on spotify. Some people also did it when they got notified by the artist via instagram etc and had a bit of fear of missing out if they did not act now and then.

Do you own any unique vinyl such as limited edition or first pressings?
Everyone in the interviews had some kind of unique record whether it was signed, limited edition, first pressing and the list goes on.

Do you display your vinyl in your home?
Everyone in my interviews displayed their records in their home, some people only one or two and other bigger parts on their collection. This varied a bit on how big a collection they had and what their living situation was.

Exploratory

This was research which was always ongoing, whether it was a quick google search or information I snapped up by a friend or a youtube video. This was not planned or goal driven research, but did nonetheless add value to the project.

A great example would be the first video I saw which started the whole project which was not planned, but gave me the direction for this project. It is however very hard to quantify this information, but is worth mentioning.
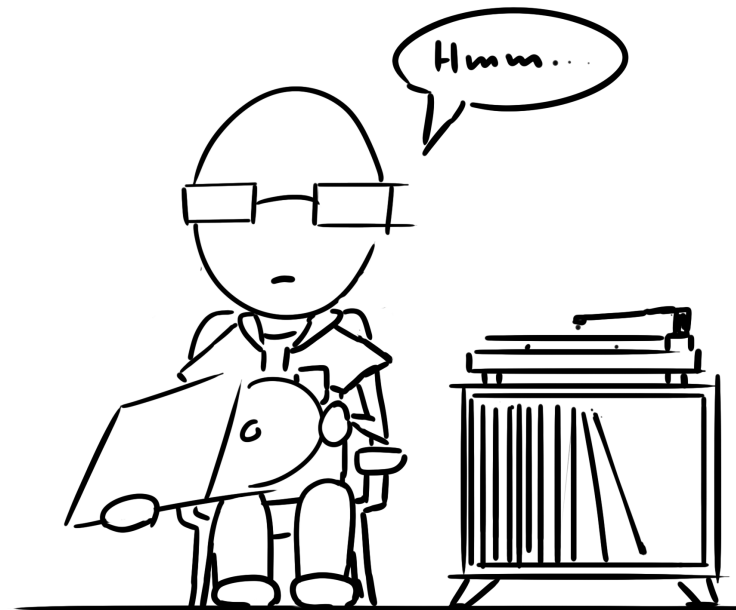
Takeaways

This were the key takeaways of the research conducted up to this point:

1. This were the key takeaways of the research conducted up to this point:

2. People justify time spent on listening to a record by buying a physical copy, this is a reward of the self mentioned earlier.

3. People buy more impulsively when coming across a temporary offer such as a limited edition version or a good deal in a record store when out buying. This is a reward of the hunt mentioned earlier.

4. Being a part of a community, wherever it is your friend group or an online forum can also alter your purchases decisions in order to receive validation. This would be a reward of the tribe mentioned earlier.

5. The movement of a vinyl and cassette player are slow, steady and gives in combination with the music a "mesmerising" experience.

6. The huge format of the vinyl record takes enough real estate to also function as an artwork in your home.

7. People do not listen to vinyl's primarily, it is only occasional and acts as a complementary experience to your everyday music streaming.

8. People focus more on the "quality" rather than quantity of their collection by getting limited edition, first pressing, signed records and etcetera.

Conclusion

After all the research up to this point I realised that there was really no way to justify creating another standard format. It is one thing if the individual artist creates a small batch of something like a floppy disc, due scarcity will make it valuable and make the community to cherish those records.

However, to do it on an industrial scale would create the same loop and destiny as other music formats has before.

Crafting the brief

Finding the CD

At this point in the process I came to a realisation, there had been a format in front of me all the time which I had disregarded from the start, the CD. This format had everything I was looking for, it was an analogue format with digital information on it. This was also the industry standard when it came to music listening for about 20 years, meaning that the technology was very mature and an endless amount of CDs was already in rotation just waiting for being picked up second hand.

It also has some decent margins for independent artists to release their own music on in order to generate some income, compared to the vinyl which smaller artists barely break even on.

K pop and fukasawa

Going further down this rabbit hole I also found out that the CD already has made a comeback, it is however almost only in the genre K-pop. It is very usual for these music groups to release their music on CD. This is however usually a part of a bigger experience sold where it is a complementary product to a book with photos of the group.

Following this thread I also found that there was a very popular product which people referred to as "the K-pop CD player" which had quite the coverage on social platforms. This "K-pop CD-player" is however designed by Fukisawa for Muji in the year 1999 and could almost be considered a modern classic. This is a very unique CD-player which is wall mounted like a clock and the switch to turn it on/off is by pulling the cord.

Finding this information made me more sure about the direction of this project but also gave me some interesting insight of how a movement can adopt different resources and make it theirs.

Muji CD-player designed by Naoto Fukasawa

Reconstructing the brief

The CD format is no longer the most advanced or even a necessary format. This is something important to have in mind when crafting a new brief due to a lot of the advanced functions people may have wanted before such as multiple CD-storage is probably not the way we want to experience the format in 2025.

The question then became, how do we want to experience the CD format in 2025? Is it with complementary motions, unique interactions, visuals or just a revised interface? The possibilities are endless but everything I came up with was to create a different experience and led me to the brief. "Create a different experience around the CD-format for a future revival around 2025-2030"

"Create a different experience around the CD-format for a future revival around 2025-2030"

Developing Pond

Exploration of interaction and movement

One of the key points which made the vinyl player very unique which I discovered during the research stage was its slow and steady movement. A lot of the users brought up how they like to stare at the record spinning and described how it was almost mesmerising and how they could look at it forever. The CD does also have mechanical movement, this is however much faster about 500 RPM, compared to the vinyl's 33-45 RPM and are therefore not creating the same soothing experience.

This sparked the idea of exploring movement and if it would be possible to either make it possible to perceive the faster movement in a different way or to make some kind of external movement which complement the movement of the CD.

Early concepts

After some early ideation I came up with 3 different concepts revolving around both interaction and movement.

To this point I choose to work solely in 2D. This is partly due to the fact that it is quicker than giving objects complex volume and shape, but also that I think things need to look aesthetically good in 2D, otherwise it won't translate very well to 3D later on.

Braun clock/toaster

The first concept I came up with was a concept revolving around buttons inspired toasters and clocks. The idea is to use buttons and its interaction we are used to such as the toaster slider and use it in a new area. In this case you would press a slider down like a toaster which then starts the music for a certain amount of time depending how far down you pressed the slider.

The slider then slowly moves upwards and when it reaches the top again it turns off the device. This initial action could potentially have the same ritualistic sensation as when you drop the needle on a vinyl record or rewind a cassette tape. Having the CD player visible compared to in a closed case will also give you visual feedback when pulling down the slider due you will be able to see how the speed of the record ramps up.

The format of the player itself would be in a compact format which could be placed where you want in your home, comparable to how you use a blue-tooth speaker but a little bit more stationary.

The aesthetics I have worked with are quite Braun like, there really is no specific reason to this other than I think it is an aesthetic which comes quite naturally when you work in 2d with mainly squares and circles.

IKEA FREKVENS speaker
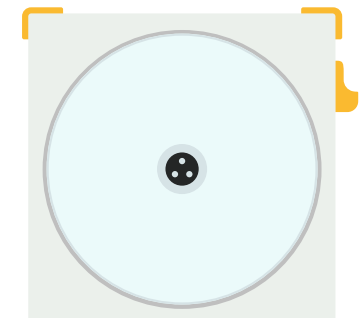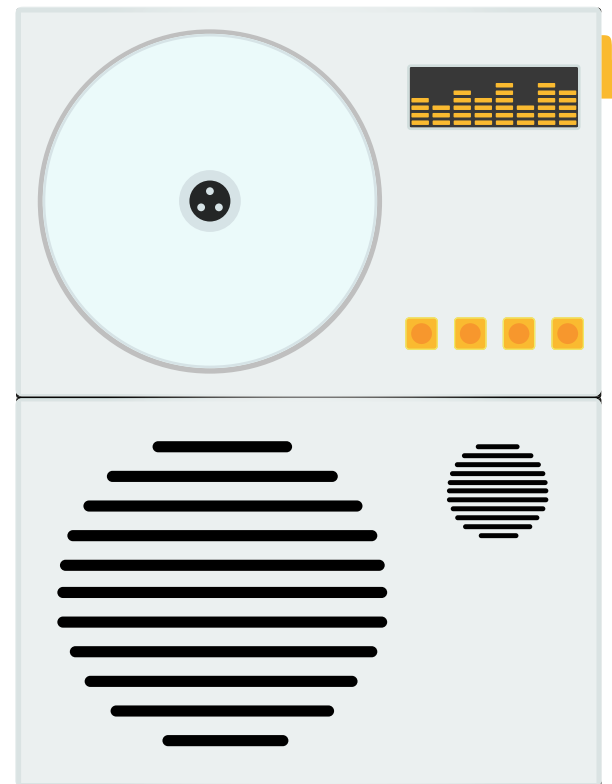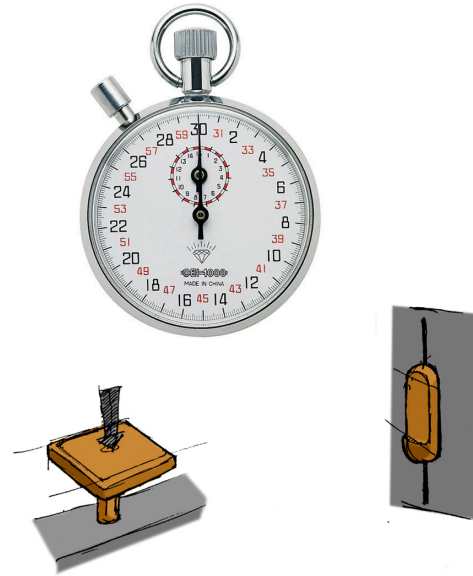
Braun RT 20 radio

Pond

This is a very experimental concept that has its focus on magnetic balls which would circulate with slow speed in grooves. The idea is that this would create a complementary motion which would be slow and steady much like the mesmerising movement of a vinyl record.

The metal balls would also be an interactive part of the interface which would turn on or off the device by either putting down the ball in the groove or removing it. This would be an interaction which would be very similar to putting down a needle on a vinyl record.

I had 2 different layout of this concept in mind:

Pond #1:
The balls are placed in a groove beside the CD and are mainly used as an interactive element. You start to roll the ball in the groove to get the machine to start playing, stop it when you want to pause and maybe even reverse it if you would like to play it backwards.

Pond # 2:
In this concept you don't interact with the balls directly. Instead a button makes the balls rolling in their groove and orbits around the CD which is in the centre. There would be 2 balls and beside creating motion they would also give visual information which would, based on their location tell you your progress on the track you are and your progress on the album you are.
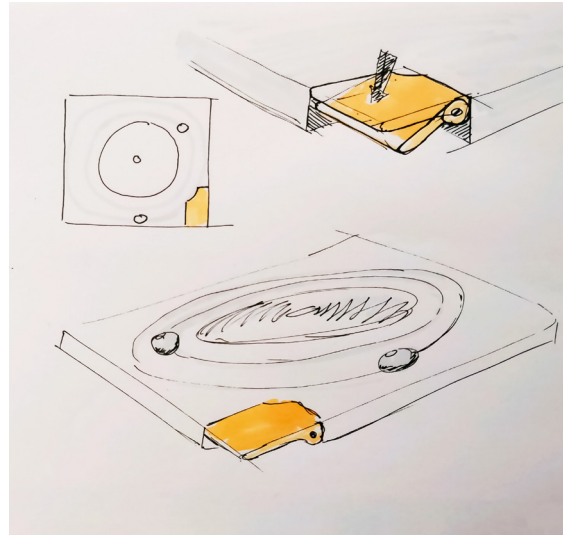
*Wall clock with levitating magnetic balls*

Magnetic galaxy clock
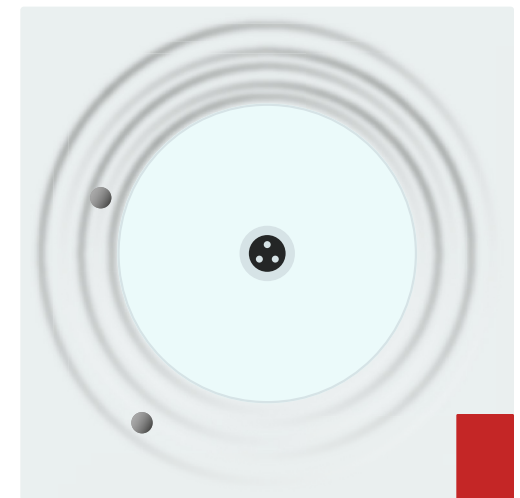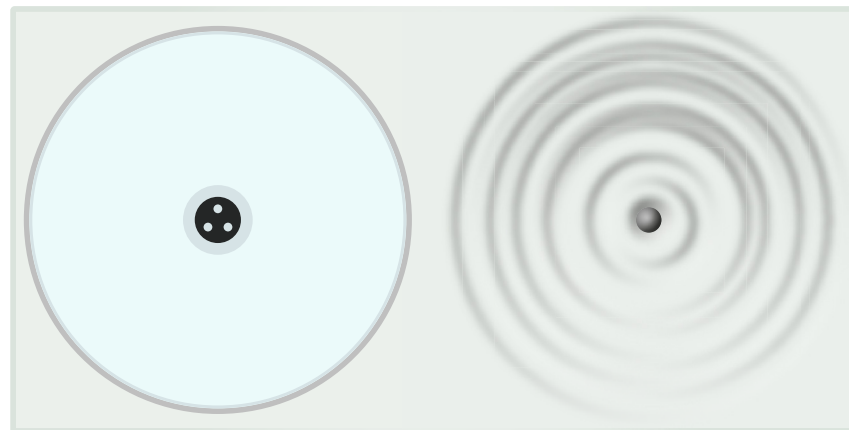
Frekvens

This last concept was heavily inspired by the collaboration between IKEA and Teenage engineering called "FREKVENS". The idea here would be to create movement with lights in order to emphasise the rhythm and energy of the music. This is something which is used in many live shows and would be a more energetic and responsive approach to the movement.

The format of this would be like the Braun TG 60 reel-to-reel recorder, which is wall mounted and quite big. There would also be other accessories to accompany the player like speakers and other lightning modules.

I did however abandon this concept quite early due to that I found the two other concepts were much stronger, but thought I would at least give it an honourable mention.

IKEA FREKVENS

Braun TG 60
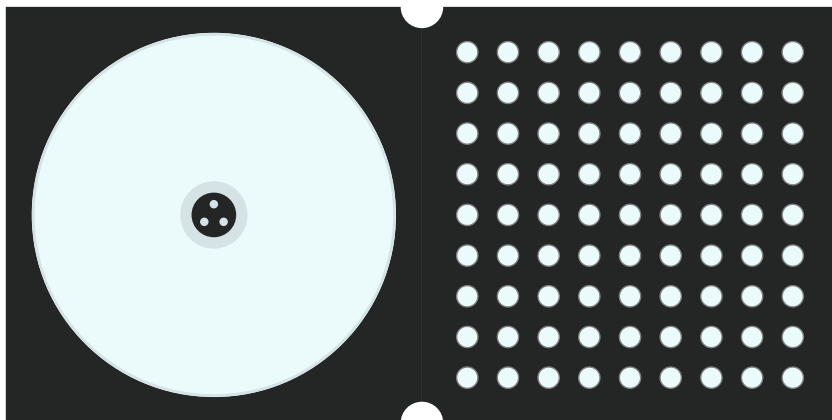
Going forward with Pond

Out of the three concepts generated I thought that Pond was the most interesting project. This was partly due to that it was very exploratory and almost a little bit of a "blue sky project", while at the same time having a sense of being tangible due to the technology that exists today.

Rapid prototyping the interface of Pond

There were 2 layouts I wanted to test of the early interface layout I came up with, one where the balls orbited around the CD and that gave you visual information and one where the grooves were beside the disc acting as an interactive part, like a needle for a vinyl player.

I did an interface in car modelling clay for easy adjustments. I also did some basic user tests on friends and family to see if the interface was understandable. The idea was that I would alter the interface depending on feedback I received but discovered that this would be hard to do. This is mainly because we analyse how an interface works based on our history with similar products prior. The benefit of prior knowledge is however of much less use if we encounter something vastly different. This experience could be compared to when your grandparents are trying to use a smart-phone. It doesn't really matter how well thought out the mobile interface is on the screen when the user is used to analogue knobs and buttons.

Another hindrance was the lo fi prototype which has no proper response after you made an action, instead I stood beside and explained verbally what happened after each action. A more Hi-Fi prototype would give you immediate response after each action making it possible to figure out the interface like a puzzle.

It was however a very valuable experience which helped me to decide to go forward with the orbital version which had information based movement.

Further development

The next stage was to bring this early interface into a volume with all the features it would need. After a long period going back and forth I decided to only add one additional main function besides the start/stop/pause, which would be skip track. I decided that this was a very valuable function due it was an innovation which really set apart the CD from the vinyl which really showcases the digital performance. The reason why I was being really conservative with the amount of buttons was in order to set the experience apart from the older high end players which usually had 1 button per function, with something like 20 buttons in total

At this point I sketched a lot of variation in order to work the different components and layout. I also built a foam box to try out the different buttons I sketched. This would not give me things like resistance, sound and feel, but it still gave me a good sense of things like volume, proportions and ergonomics.

The result of this process became a skip track button which was in level with the panel of the player. This button was not a part of the foam box I made, but the evaluation of the box narrowed down my options and got me on the right track. I also came up with the idea that the pause function would be activated when you pressed down the power button partially. Just like how a camera works when you press the button halfway down and it makes a noise, before you press it all the way down to take the shot.
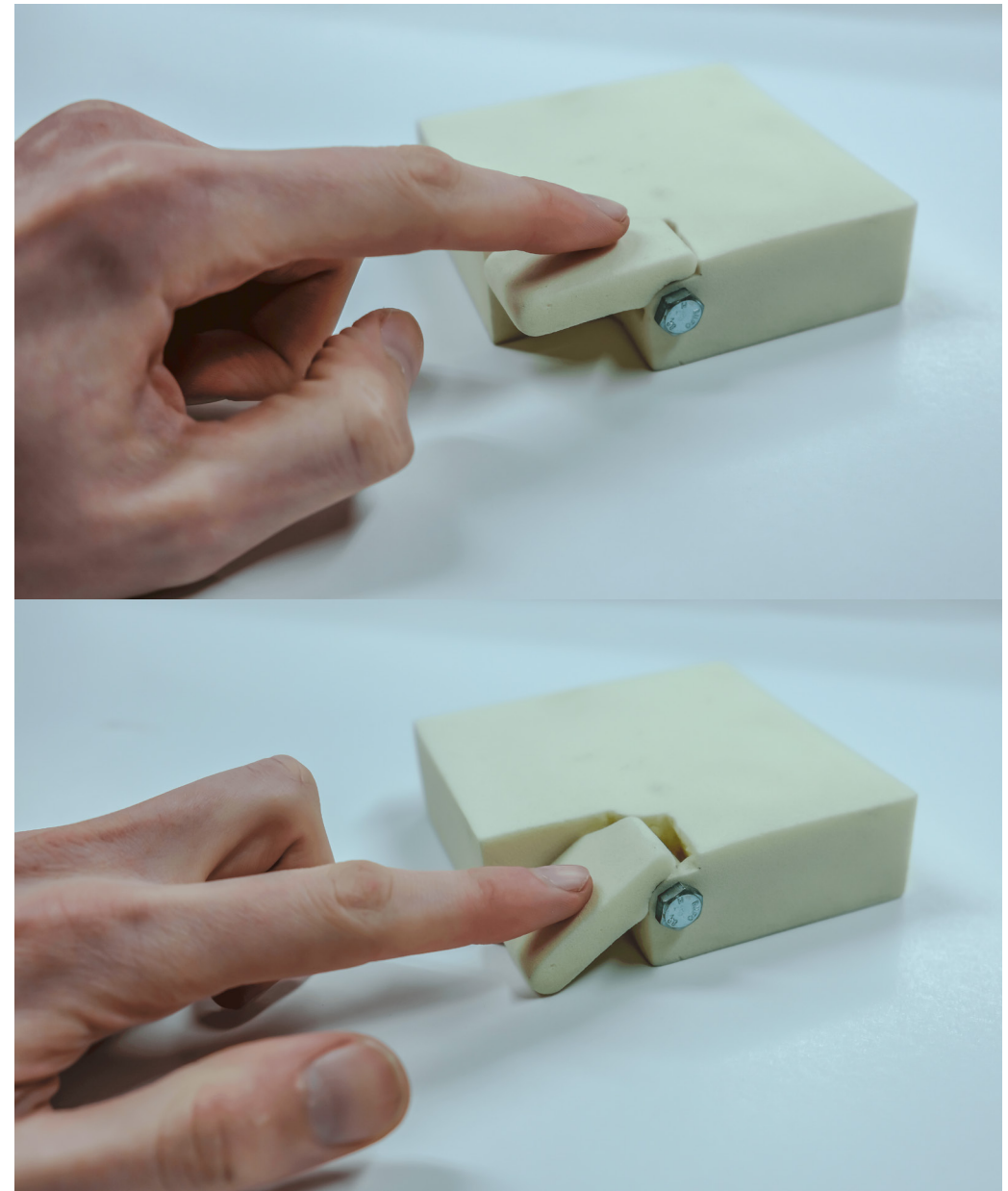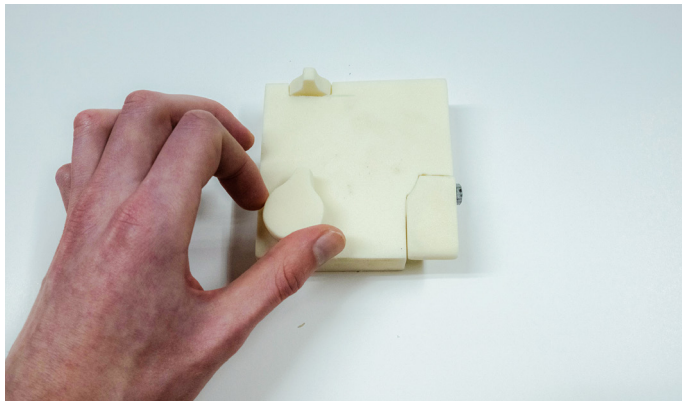
Rough CMF (colour, material, finish) exploration

I did some very brief exploration of material and colour. I tried plastic, aluminium and some very experimental ones in marble. I did however quite quickly decide for the aluminium one which would be milled and then would be anodized in the colour red. This was something which I had been having back in my mind through the whole process, but I thought that I would at least be open and give it a try to use another CMF.
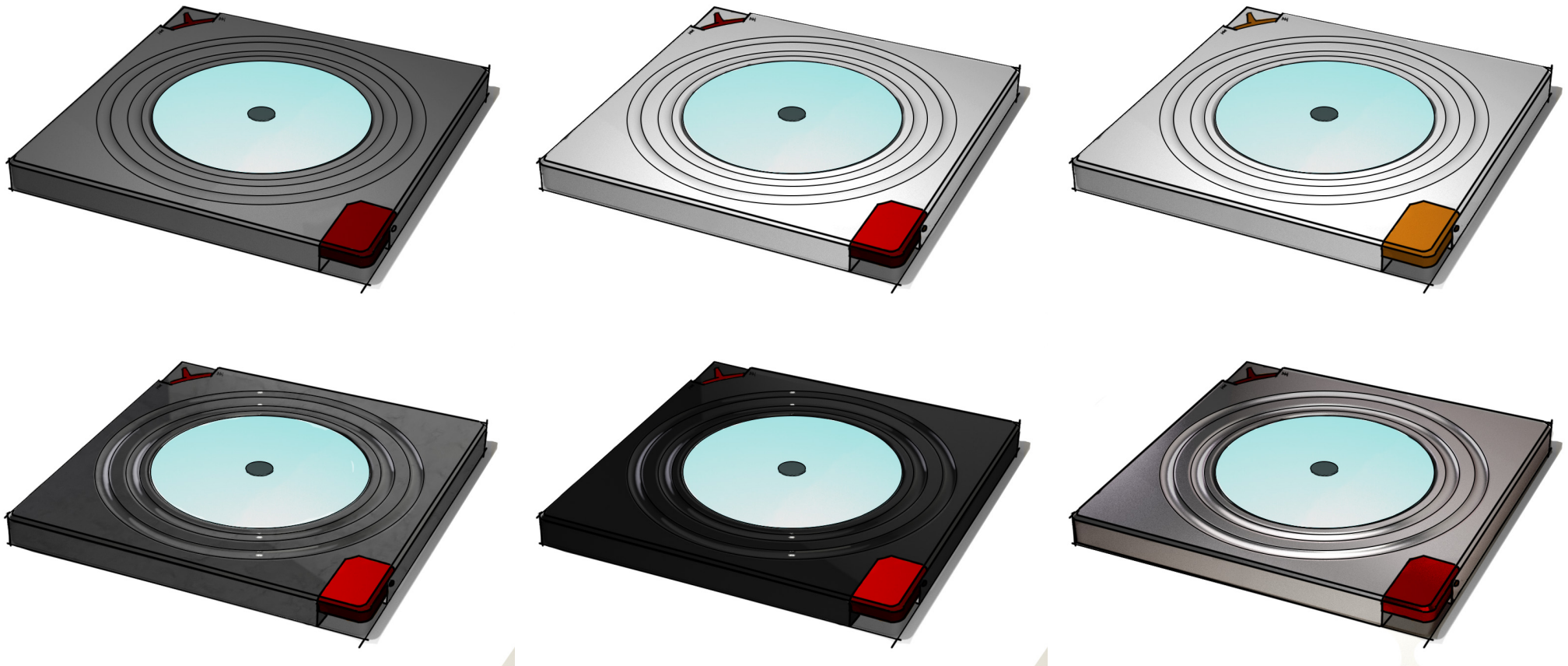
Results of Pond

The result of this process became Pond, a CD-player with a very unique and experimental user experience. Its interface consists of 2 buttons, 1 toggle switch to switch track and one big chunky button which acts like an on, off and pause button.

Pond is meant to be mounted on the wall in order to showcase its movement for the whole room. When the device is turned on by pressing down the red anodized aluminium button the balls are set in motion.

You can get an estimate on your progress on the record by looking at the position of the magnetic balls, the outer one shows you where you are on the album length and the inner one shows you where you are on the track, at 12 o'clock the album and/or the current song is finished.

The movement of Pond is built up with the centre spinning the fastest (the CD), the second fastest movement in the middle (The track length ball) and the slowest movement on the outside (the album length ball). This creates a quite natural hierarchy of descending speed.

When the device is paused the magnetic balls stop in its location, and when it is turned off they move their way back to 12 O clock. Skipping a track will make the balls roll with accelerated speed to their new destined location in their groove.
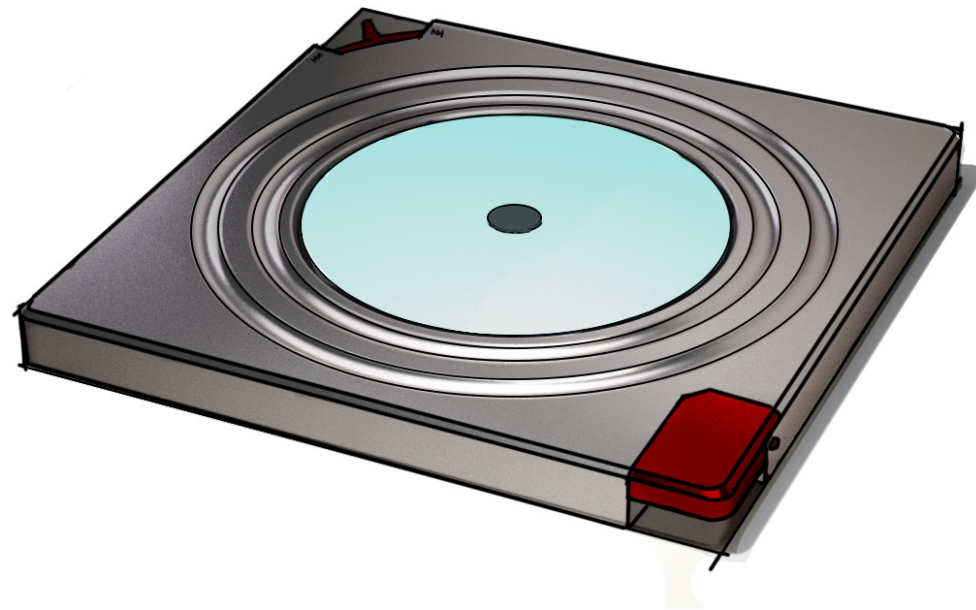
Reflection

Reflection and the road forward

At this point I was very happy with my progress and was now standing in front of a choice. I could either continue developing Pond and dedicate the rest of my time on making high quality render/prototypes, presentation material and figure out all the details of how it would technologically work, or I could leave it as an experimental concept and continue experiment and discover in the world I now had created

Even if Pond would not be impossible to create as a physical product it would be very expensive and take a lot of research and development to figure out the use of the technology. This got me to start thinking about what I would do if I would apply everything I've learnt so far but to a product that would be possible to release within 5 years.

This sets the boundaries to make the project much more realistic and will make the end result feel more tangible. In summary, Pond is a big part of my exam project but I decided to leave it as a concept and continue my journey to create another more tangible product.
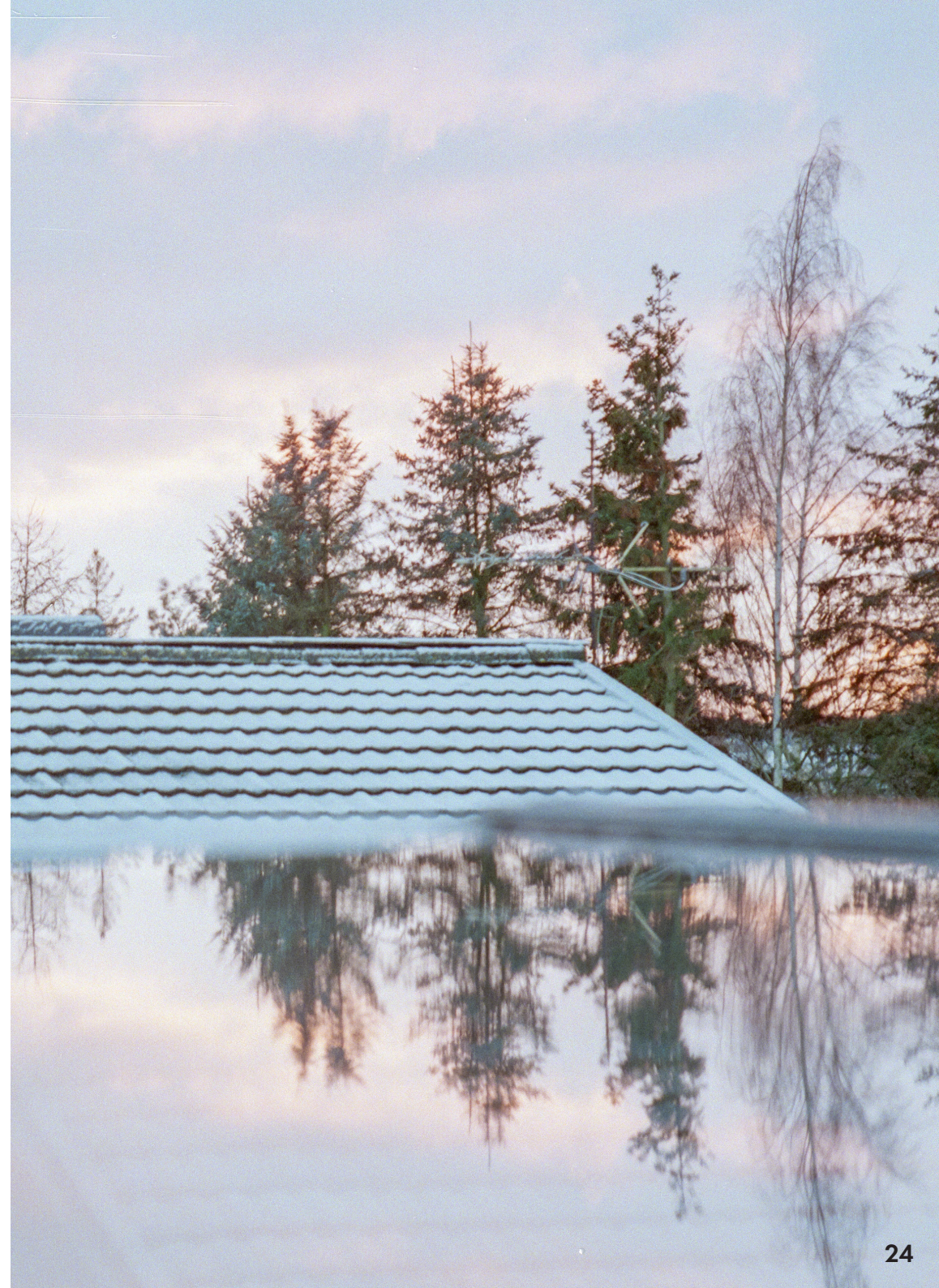
Developing Alex

Constraints for the second concept

The original brief "Design a CD-player with a different user experience" now changes to:

"Design a CD-player with a different user experience, that also could realistically be released to market within 5 years"

It is quite a long brief, but it really sets some boundaries to the technological parts used due most of the theme must be readily available. The target group I chose for this project were music enthusiasts with an audio system at home. This is because most music playing devices, amplifiers and other audio gear is just a box today. I wanted to see if I could push this a little bit while still maintaining the same target group as other audio gear.

"Design a CD-player with a different user experience, that could realistically be released to market within 5 years"

Mood-board

I did not have very long time to complete this project so settled with a single mood-board that I felt was aesthetically suitable for the scenario. The area of audio gear is quite stable due everything is more or less boxes, some with more user friendly interfaces then others.

The board I came up with however does not differentiate from traditional gear too much while still having its own character with some nice fillet to highlight the interactive parts.

Sony Discman concept

Bang and Olufsen Essence controller


Olivetti Divisumma

Functions and user interface

A realisation I came to during a feedback session is that functions like shuffle, loop and loop one are innovations that came with the CD. Unlike Pond I decided to include all of this function in order to stay true to the traditional CD-experience and focus on innovation in how the functions were presented instead.

My first attempt at creating the interface I tried to pack all the functions which are, on, off, pause, loop, loop 1, shuffle, skip track forward, skip track backwards into one button. After trying a lot of different alternatives I came up with a rotary switch which also could be tilted sideways like a joystick in order to change track.

This was however a way too functionality dense interface and compromised the user experience. I did however like the rotary switch due it eliminated unnecessary buttons like individual mode buttons when you really only have one activated at the time. This led me to have a separate button which determined on/off, play/pause and mode while having a separate button for track selection.

The track selection button was inspired by IKEA's product TRÅDFRI which has a shallow v shaped groove which invites you to tilt it either way. In conjunction with the button I also added a smaller led matrix which would show what track you are on and also perhaps play time on the track.
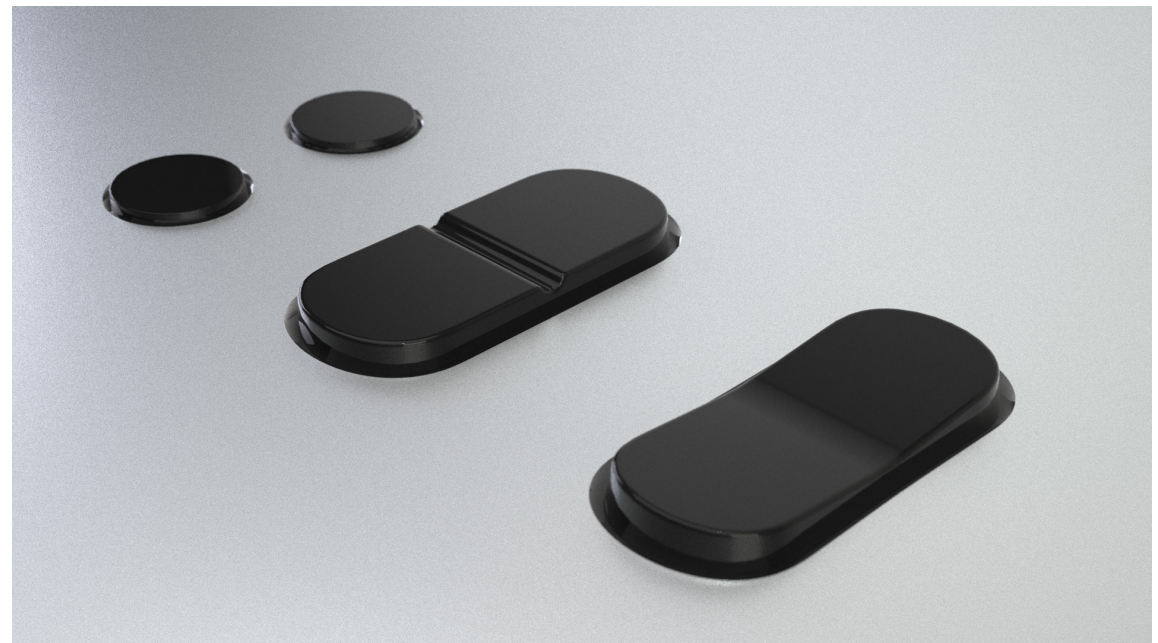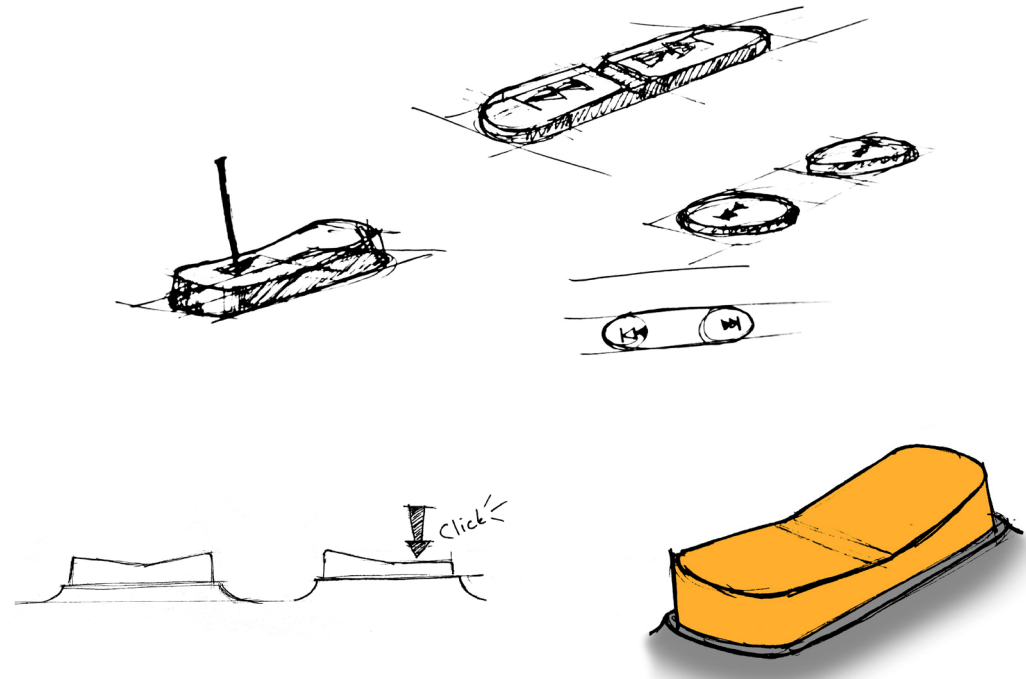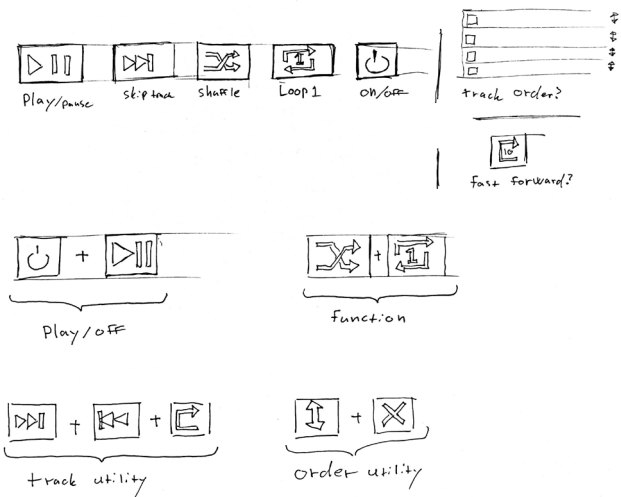
Form

As mentioned earlier the focus on the shape was to make an elegant design while still not venturing too far off from the traditional boxes audio equipment revolves around. The starting point for the proportion came from the golden ratio in order to have something to work from. When it came to the edges of the player I tried out a couple different high quality surfaces but settled on rounded corners with a chamfer following it.

When it comes to the top surface I got inspired by Olivettis Divsumma where the buttons are highlighted by poking out by being higher from the interface, while they are at the same time a part of the surface due the heavy fillets which join the 2 parts together.

During early tests I also added 2 notches to the CD-tray in order to easily mount and remove records. My test on the regulator through this project constantly gave me new insight in order to alter the form to follow the functions of the player.

Rapid prototyping

After having worked out the shape I wanted to bring it into 3D. This is in order to evaluate the size of the product, but also in order to evaluate the graphic layout around the essential function button.

First up was a quicker one on paper to get a rough idea, this was then followed up by a 3D printed one where I also printed out a couple of different buttons to try. I also had extracted the CD player mechanism from an old portable CD player I bought on Tradera to see if it would be reasonable for everything to fit into the slim format.

This is not as good as doing a technical layout of all the components but is far better then not having any component layout in mind.

Final renderings

This whole project took place during lock-down 2021 which resulted in us not having great access to the school or its resources. For this reason making a physical prototype would be very hard to achieve due I would need to outsource the work.
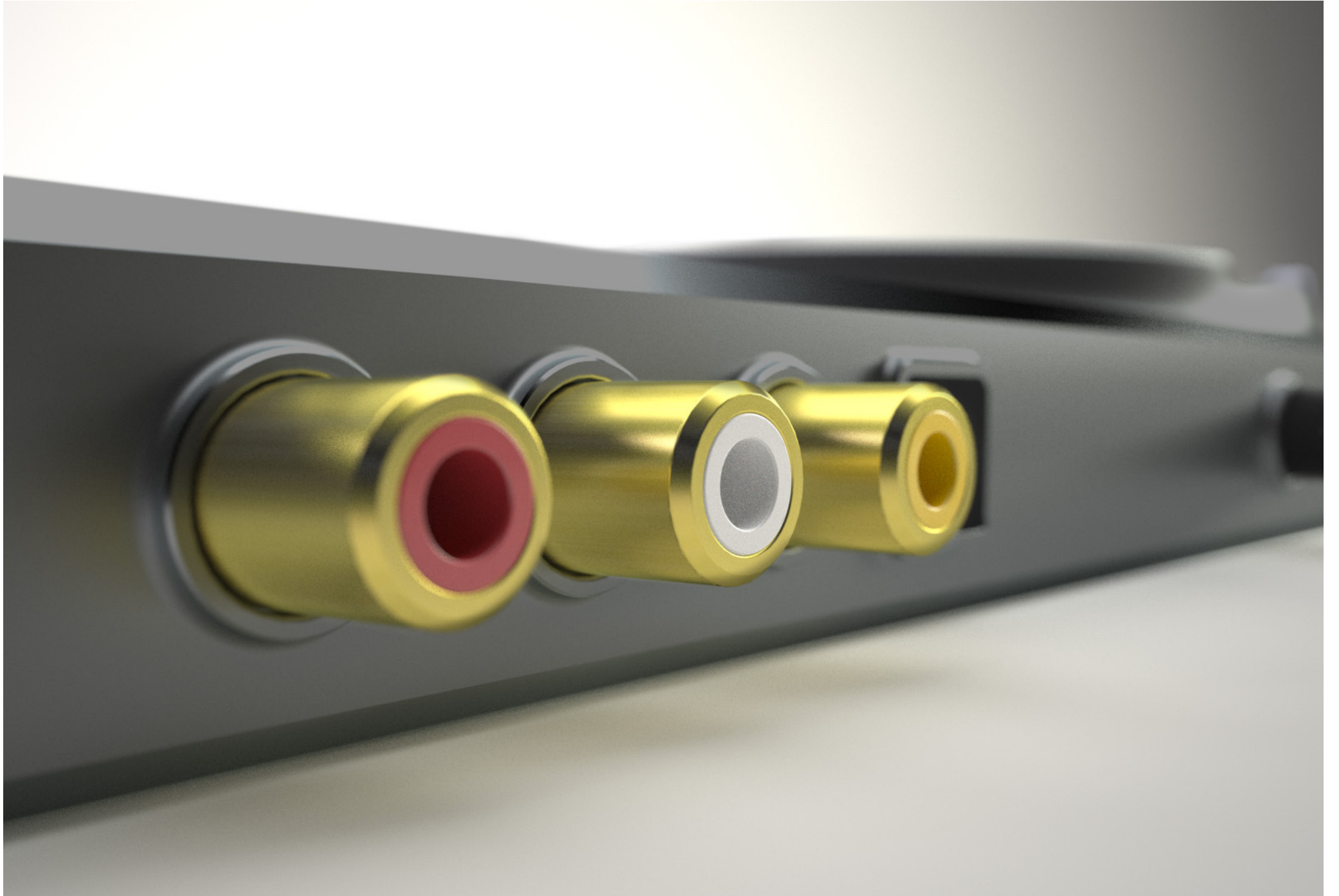
I made the decision to instead of a high end physical prototype to spend my time making nice renderings using Maxwell render. These pictures would be accompanied with some lo-fi mock-ups in order for people to be able to translate the product to a physical volume.
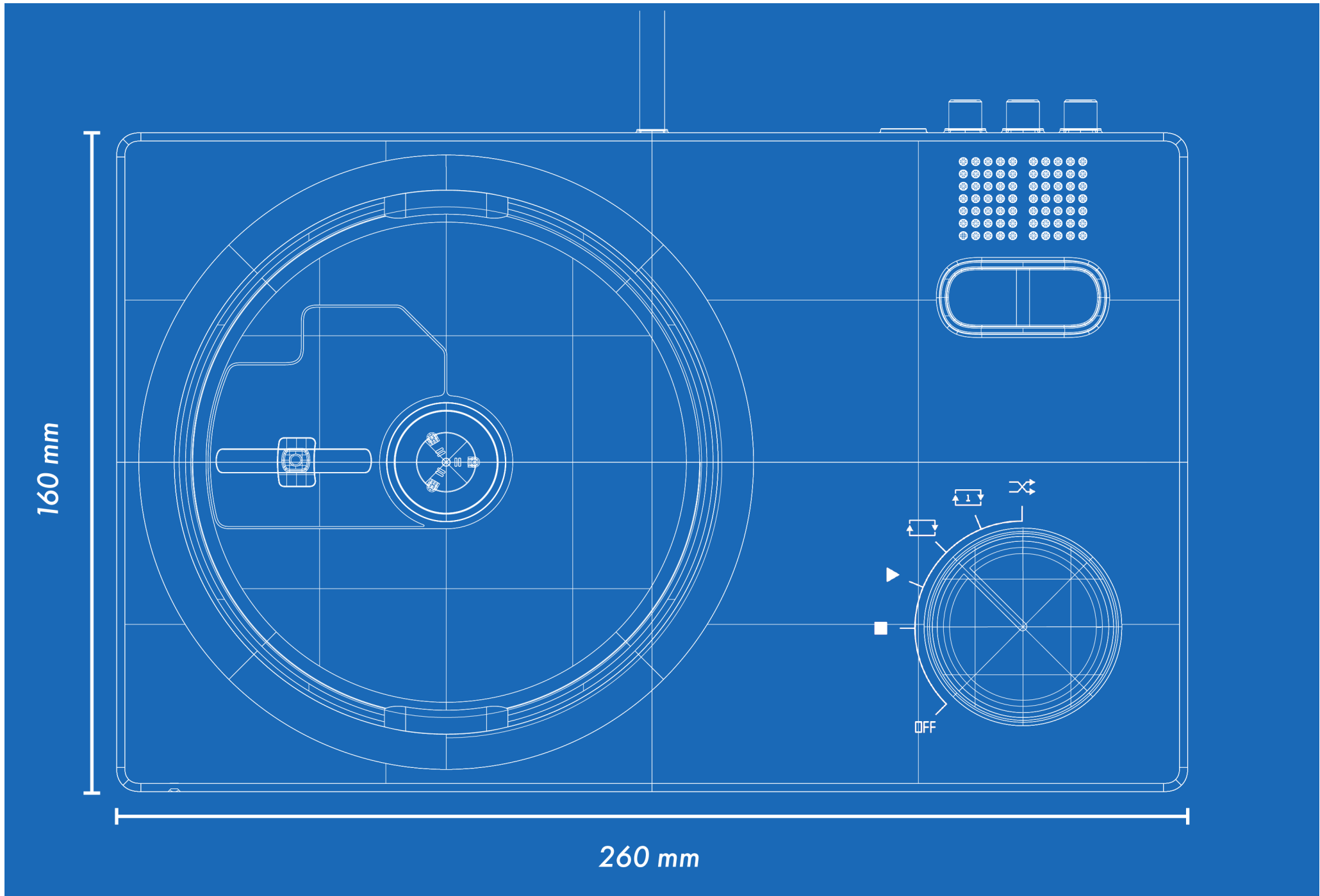
160 mm

260 mm

OFF
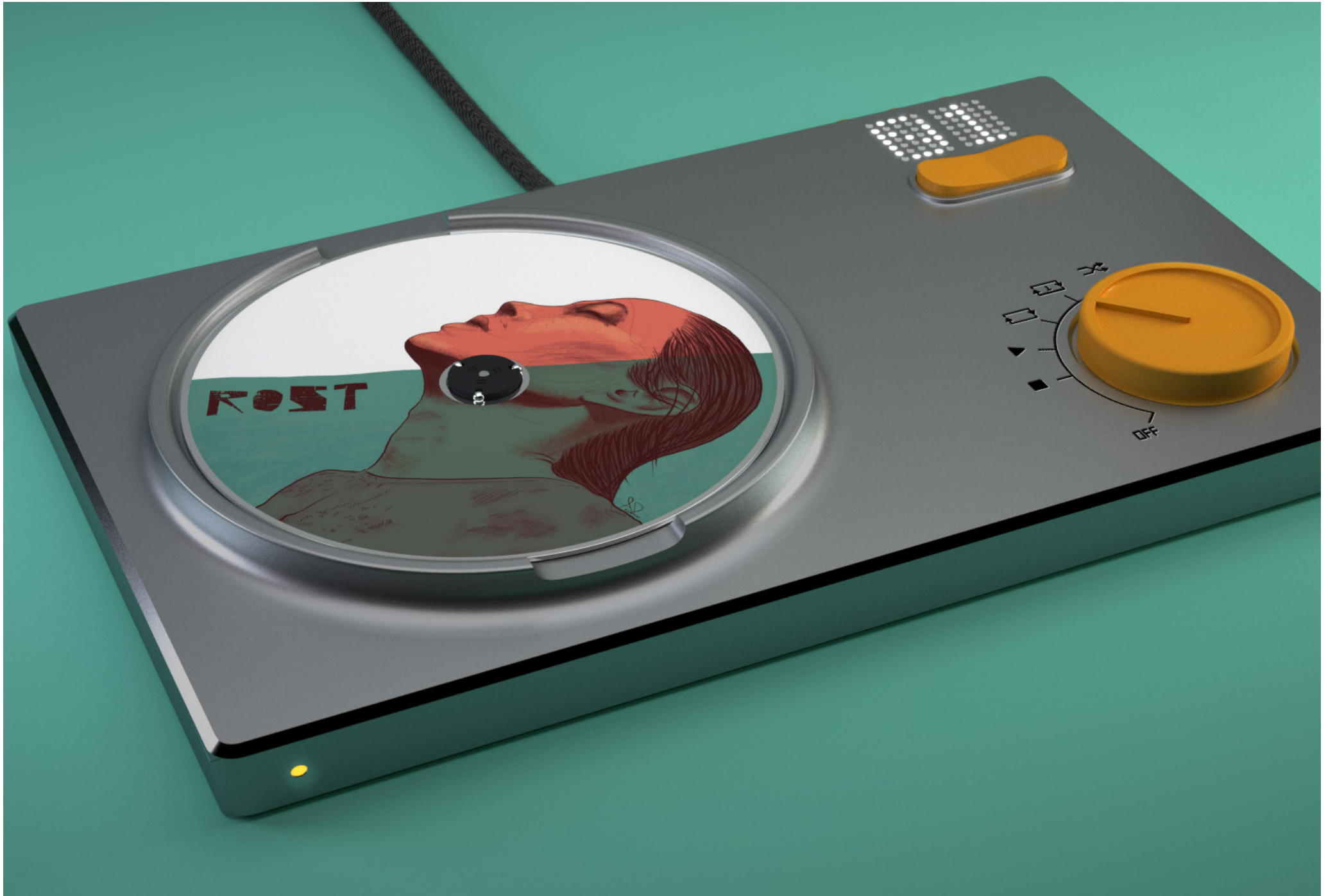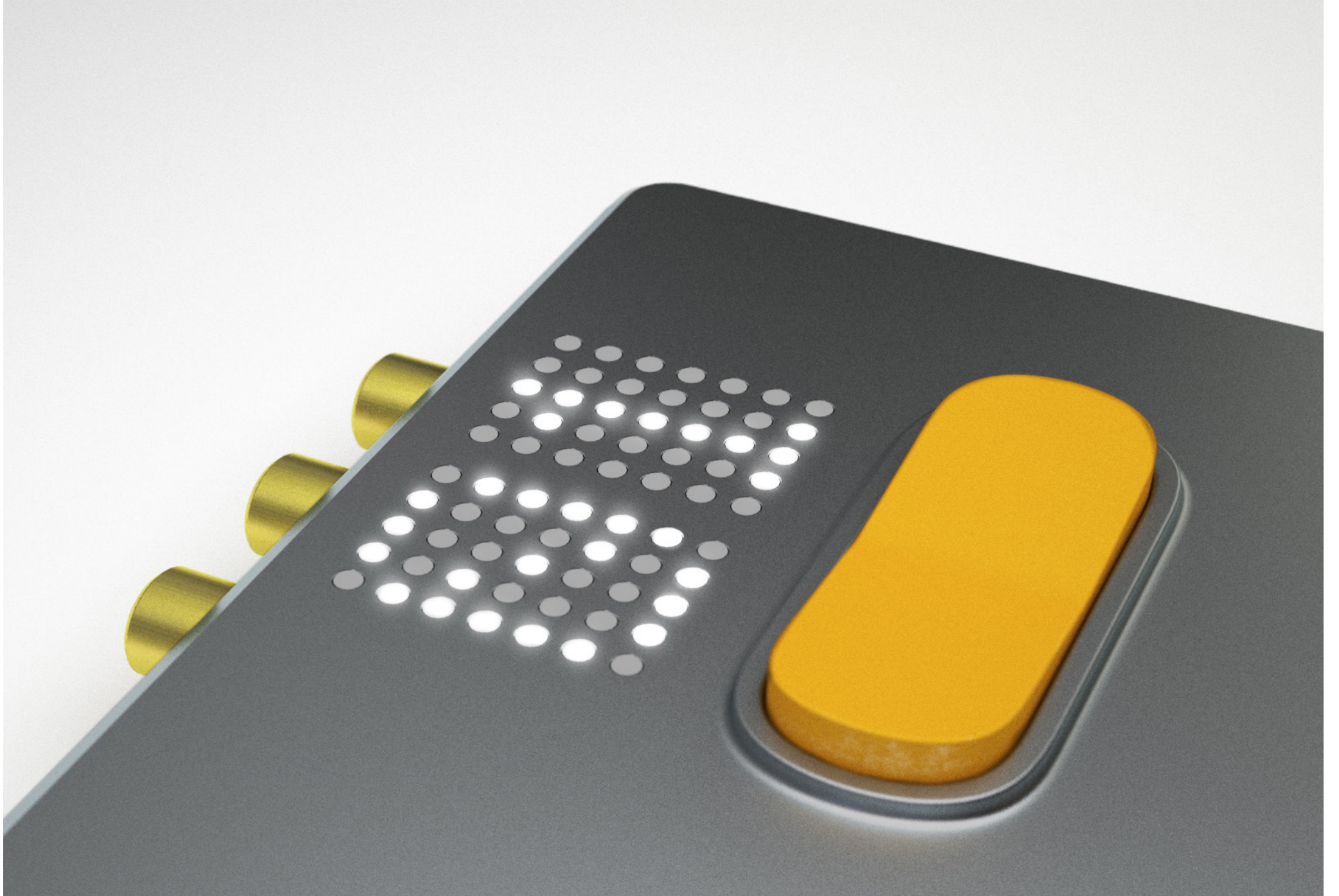
Result of Alex

The final result of the second iteration of my brief became the CD-player Alex. The interface of Alex has been narrowed down to 2 buttons and is accompanied with a led matrix display which feeds you track info.

The intended user is music listeners who own some kind of Hi-Fi system which consists of an amplifier and speakers which is a necessity for Alex to work. The space is on top of a counter like a record player, accompanying the rest of the user's Hi-Fi system.

The skip track has a strong v angled groove in it, making it inviting to change track by pushing the button to either side. There really is no need to have individual buttons for the different "modes" of the player, so these have been combined to a single rotary switch. You start the machine on "off" which goes to pause, on and then all the playing functions such as loop and shuffle.

Alex is made out of CNC milled aluminium where the areas of interaction are a bit higher than the main surface, making it visually easy to understand which points to engage in. There is also a milled notch in the CD-tray in order for easy access when attaching or removing a record.

Final results

Final results

The final result of my bachelor project as a whole is 2 strongly linked projects. One is the more experimental concept Pond which pushes what an interface can be and is a deeper exploration on what effect motion has on the user experience. The other one is Alex which is a more tangible project which showcases what a difference we can make in an interface using only the technology and means we have today.

The final presentation from Pond became an illustrative sketch and for Alex it became a couple of high quality renders. This is also accompanied with the countless prototypes of different qualities I did throughout the project.
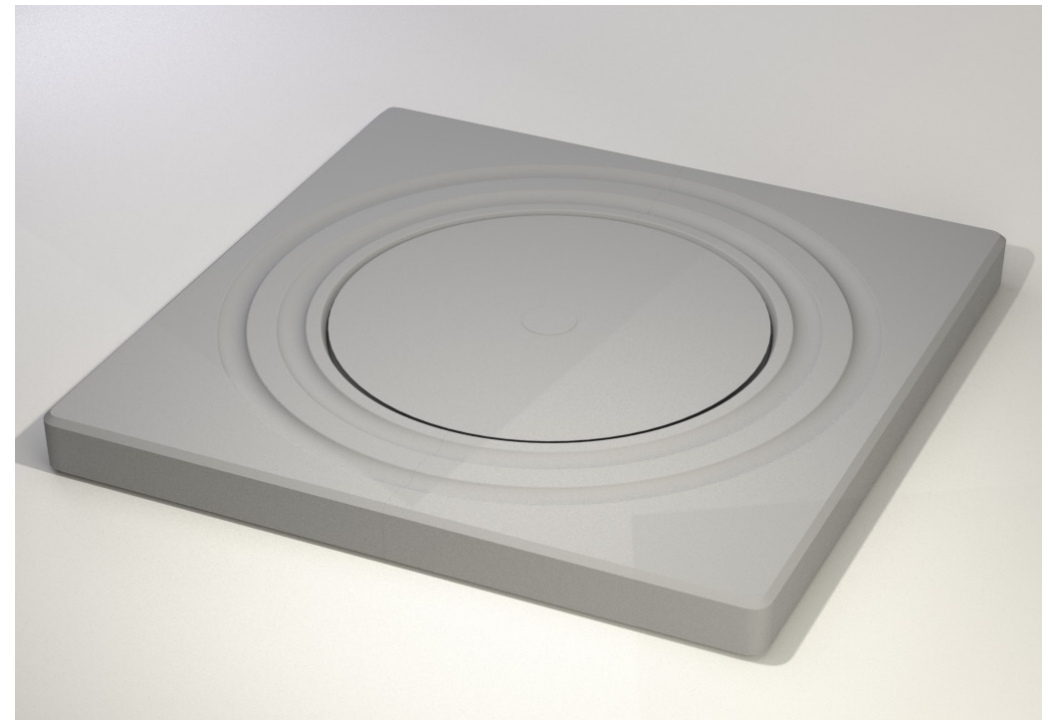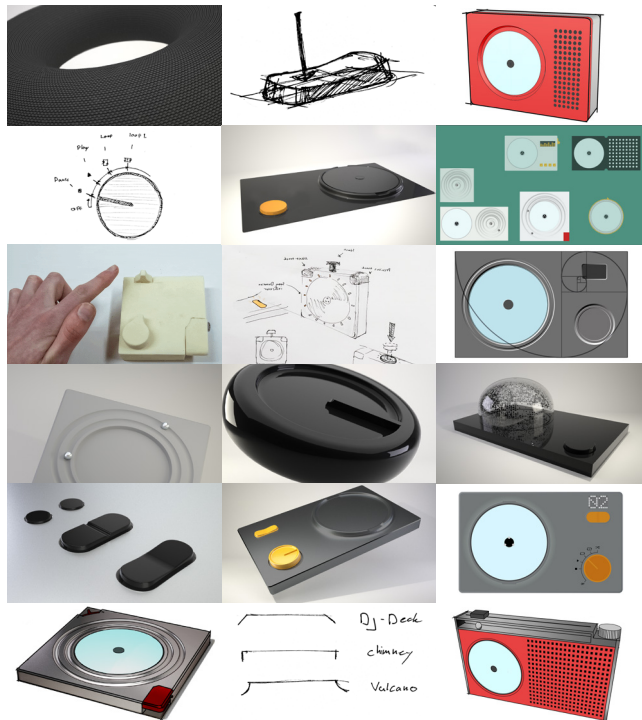
Final thoughts

Looking back at the project now when I am writing the documentation I realise what a long journey this project really was. The whole project went through 3 major changes which altered the projection of this bachelor project drastically, while still maintaining a lot of the core values developed early in the project.

It would have been nice to have a high quality prototype milled out of aluminium to really bring this project to a closure, but if we are taking into account the project's long journey with several major changes and that the whole process was conducted during lock-down, I think the results are more than fair.

In the end this was really a 6 month process of developing a box with a different layout of buttons. While this is being true the result is still radically different then any other CD-player out there, showing that design decisions really make a huge difference on how we experience products.

This project as a whole has really got me excited about the user experience in product design and has widened my horizon from only being ergonomics and interfaces to all possible senses a product gives such as sounds, texture and feel and is an area I would like to continue focusing on in the future.

Special Thanks

I would like to give a special thanks to Dylan Bertram for the many helpful conversations we had and for the guidance in an area I was not familiar with in depth. Without his feedback this project would not have reached the level it did in the end.

Image Sources

Page: 3
King Gizzard and the Lizard Wizard live:
https://carriageworks.com.au/journal/king-gizzard-and-the-lizard-wizard-set-lists/
King Gizzard and the Lizzard Wizard Polygonwanaland floppy disc:
https://5sevenrecords.bigcartel.com/product/polygondwanaland-album-video-game-on-2-floppy-disks

Page: 4
Chase Bliss guitar pedal "Mood":
https://www.chasebliss.eu/mood
Chase Bliss Audio Logo:
https://www.soundaffects.com/blog/2018/01/chase-bliss-audio-reveal-two-new-pedals-for-namm-2018-conder-analog-eq-and-thermae-delay/

Page: 7
The Green Imperative by Victor Papanek:
https://thewhitworthshop.com/products/the-green-imperative
Hooked by Nir Eyal:
https://www.amazon.se/Hooked-How-Build-Habit-Forming-Products/dp/1591847788

Page: 8
The "Hook" model:
https://fs.blog/hooked/
Chase Bliss Audio Logo:
https://www.soundaffects.com/blog/2018/01/chase-bliss-audio-reveal-two-new-pedals-for-namm-2018-conder-analog-eq-and-thermae-delay/

Page: 10
CD pile:
https://www.engadget.com/how-to-survive-the-inevitable-cd-revival-130013506.html

Page: 12
Muji CD-player by Naoto Fukasawa:
https://sgustokdesign.com/naoto-fukasawa-wall-mounted-cd-player

Page: 13
Layed out CD´s:
https://www.engadget.com/how-to-survive-the-inevitable-cd-revival-130013506.html

Page: 16
IKEA FREKVENS speaker:
https://www.ljudochbild.se/test/hogtalare/ikea-frekvens/
Braun RT 20 radio:
https://www.cooperhewitt.org/2017/02/11/tischsuper-but-not-kitschsuper-dieter-rams-rt-20-radio-for-braun/
Stopwatch
https://cei-ultrak.com/products/ultrak-1000-mechanical-stopwatch

Page: 17
Levitating ball clock:
https://www.thisiscolossal.com/2017/02/flytes-new-magnetized-clock/
Magnetic galaxy clock
https://www.aliexpress.com/item/4000149404715.html

Page: 18
IKEA FREKVENS:
https://newatlas.com/home-entertainment/ikea-teenage-engineering-frekvens/
Braun TG 60:
https://www.wallpaper.com/design/design-luminaries--including-dieter-rams-nicolas-ghesquiere-norman-foster-jasper-morrison-pledge-support-to-protect-design-patent-rights-apple

Page: 27
Olivetti Divisumma:
https://dribbble.com/shots/14597756-Olivetti-Divisumma-18-III/attachments/6289473?mode=media
Bang and Olufsen Essence remote:
https://www.designboom.com/technology/bang-olufsen-announce-the-one-touch-beosound-essence-01-08-2014/
Sony Discman concept by twelvemonthly:
https://theinspirationgrid.com/walkman-redesign-by-twelvemonthly/