Hush Guard

Amandine Mondion

Take Control - Disconnect - Thrive

Rewriting the Rules of Hyper-Connected Living with Style

The Issue

Generation Z faces a growing challenge marked by the intersection of digital pollution and excessive smartphone use. Recent studies indicate that the average Gen Z individual spends a staggering amount of time on their devices, with daily usage often exceeding six hours, contributing to growing concern about digital pollution. Although apps designed to limit phone use have emerged as a solution, their effectiveness remains questionable, as a significant number of users report persistent difficulty disengaging from their screens. It is limited due to user resistance and habituation. There is therefore a critical need for innovative solutions in the form of physical products that can facilitate a conscious and intentional relationship with technology.
Such products could play a central role in reducing digital pollution and promoting healthier technological habits among young people.

Hush Guard

Hush Guard is a ground-breaking controller designed to revolutionise the way we engage with our digital lives. I understand the challenges faced by the hyperconnected Gen Z, being one myself, where the incessant barrage of information disrupts our daily lives and contributes to the digital noise that surrounds us.

Hush Guard is a shield against the overwhelming digital landscape. By integrating controls such as buttons, a crank, and a joystick, this innovative device empowers users to deliberately limit their digital consumption. I believe in the importance of creating a conscious and intentional relationship with technology, and Hush Gard is the tool that facilitates just that.

The name itself, Hush Guard, reflects the product's mission – guarding your peace of mind in the digital realm. It acts as a shield against the constant barrage of information, helping users reclaim control over their digital lives and reduce the digital pollution that accompanies excessive screen time.

By making the use of your phone more deliberate and challenging through purposeful physical interactions, Hush Guard enables a more mindful approach to technology. It's not about disconnecting entirely; it's about finding a balance that suits the needs of the individual.

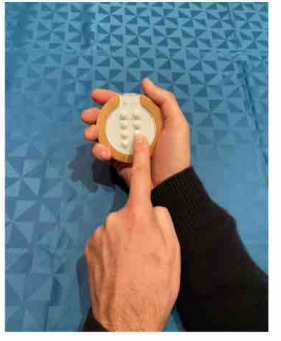
Development

Amandine Mondion

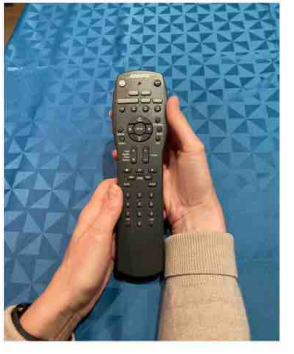
Sketches

Workshop: Controllers

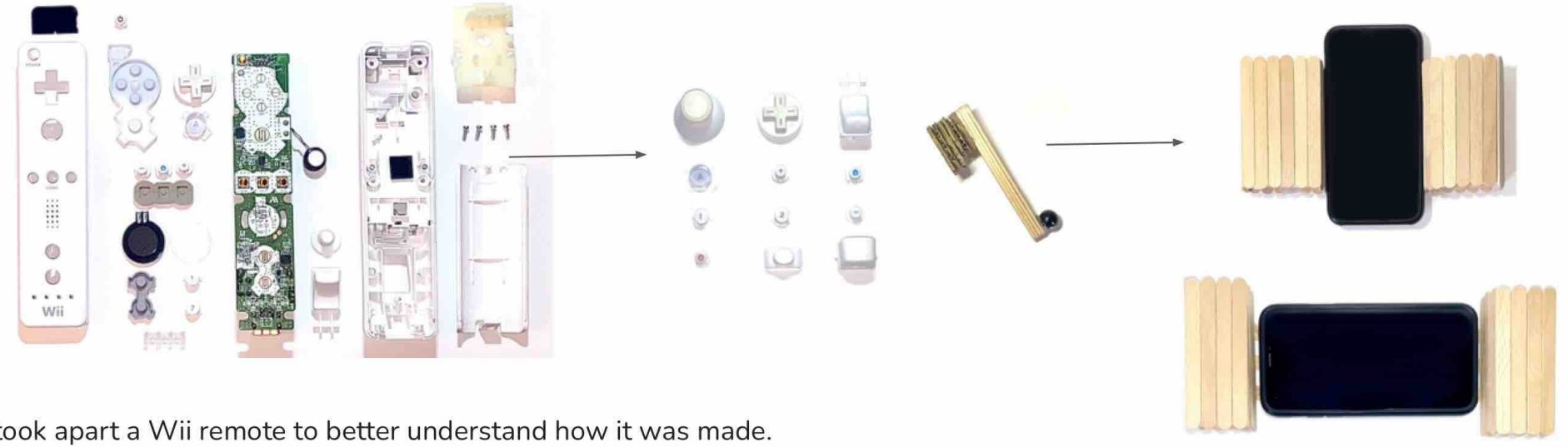
The goal of this workshop was to understand what users' reflexes were when they had a controller in their hands, the way they hold it, what buttons they use...





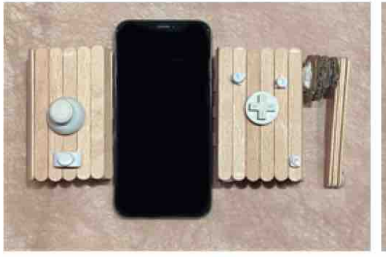
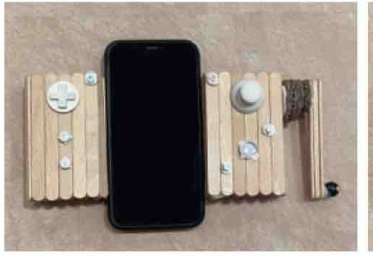
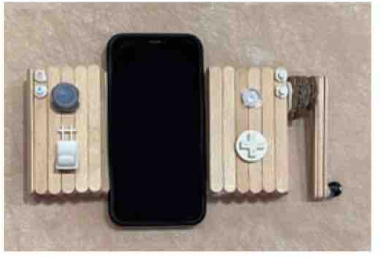



Workshop: Buttons



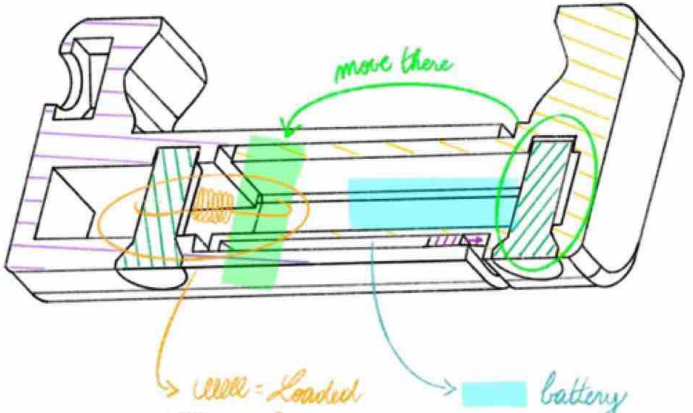
I took apart a Wii remote to better understand how it was made.
I then collected the buttons and ran a workshop to understand user preferences for controls.

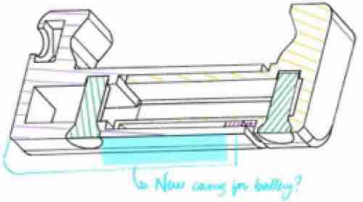


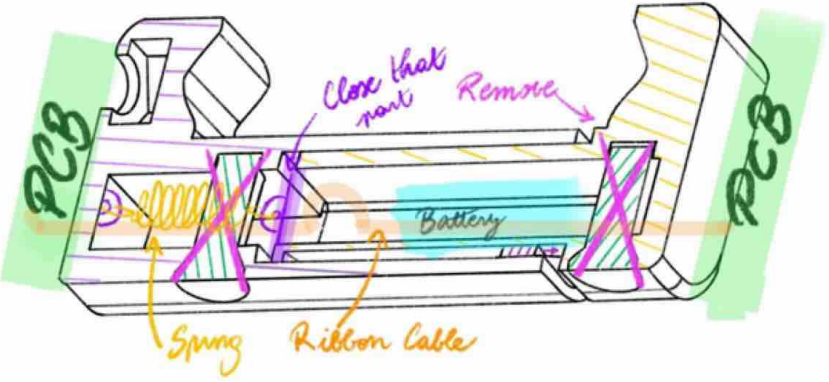




Example of some models made during the workshop.

Mechanism Development



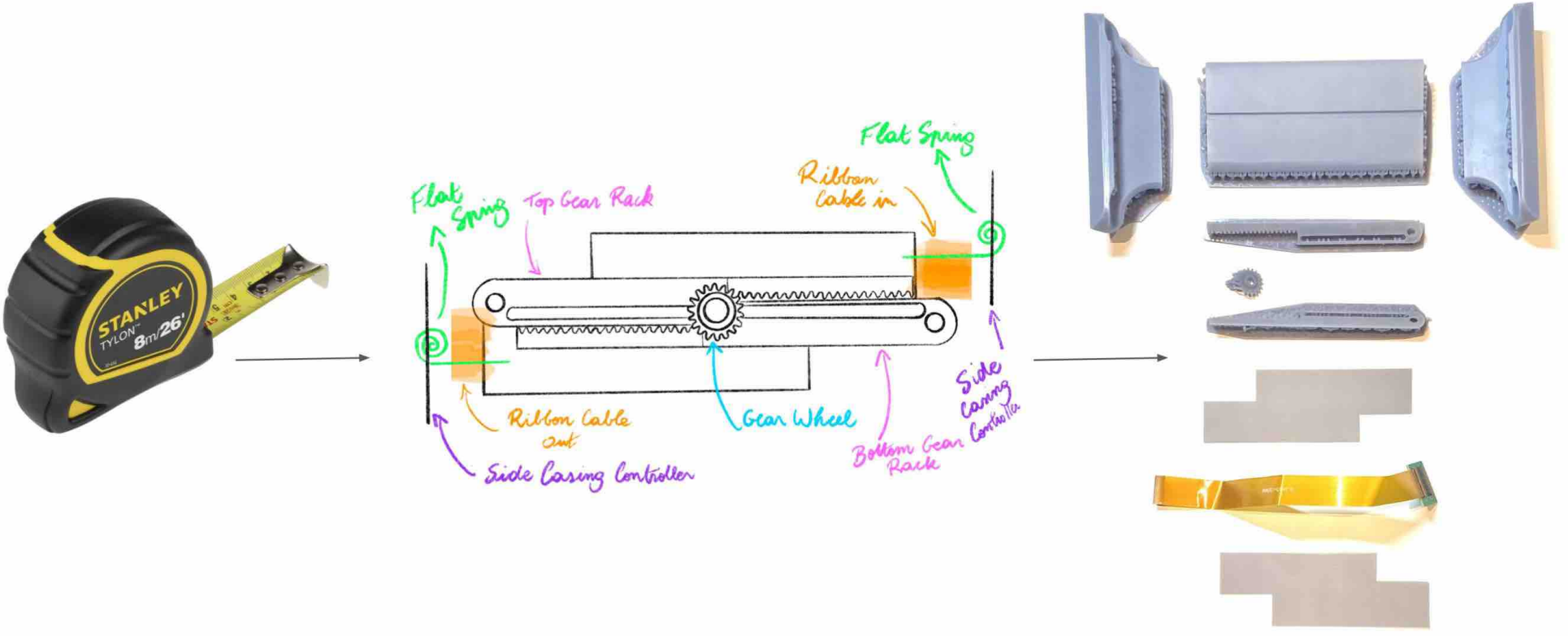




I then encountered problems with the mechanism. I decided to make the controller adaptable to each size of phone by making a spring loaded mechanism but I couldn't get the ribbon cable from one pcb to another without damage during testing

Mechanism Development

Then, while playing with a tape measure, I realised that it was a great mechanism! So I used the same concept with flat springs to make the retraction of the controller work on the phone.



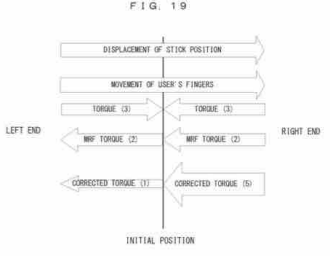
Mechanism Evolution

After testing, I decided to replace some components to improve performance and to remove others to simplify the manufacturing process.

I replaced the potentiometer with a rotary encoder, which allows my crank to rotate infinitely, which is desired for the design.

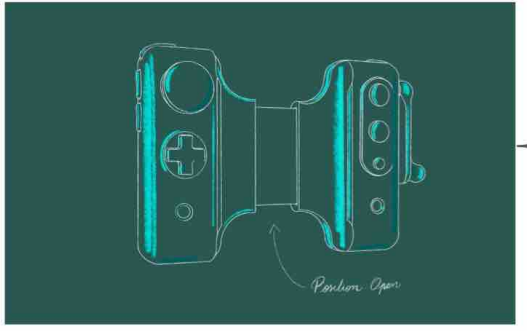
I removed the erm vibration motor to simplify the design, the user's phone placed inside already having an integrated vibration system.

I also decided to remove the Smd Diodes.

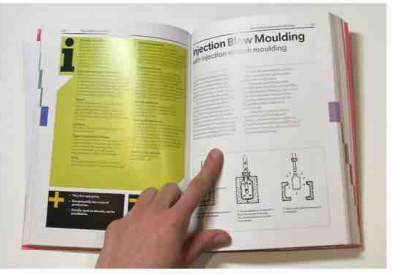


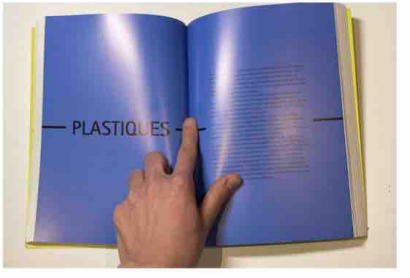
I was using the Magnetic joystick which had a smart fluid inside it that can be found on Nintendo consoles. I then realised that Nintendo had filed a patent for it. So I replaced it with a classic joystick.

Materials and Manufacturing Processes Research

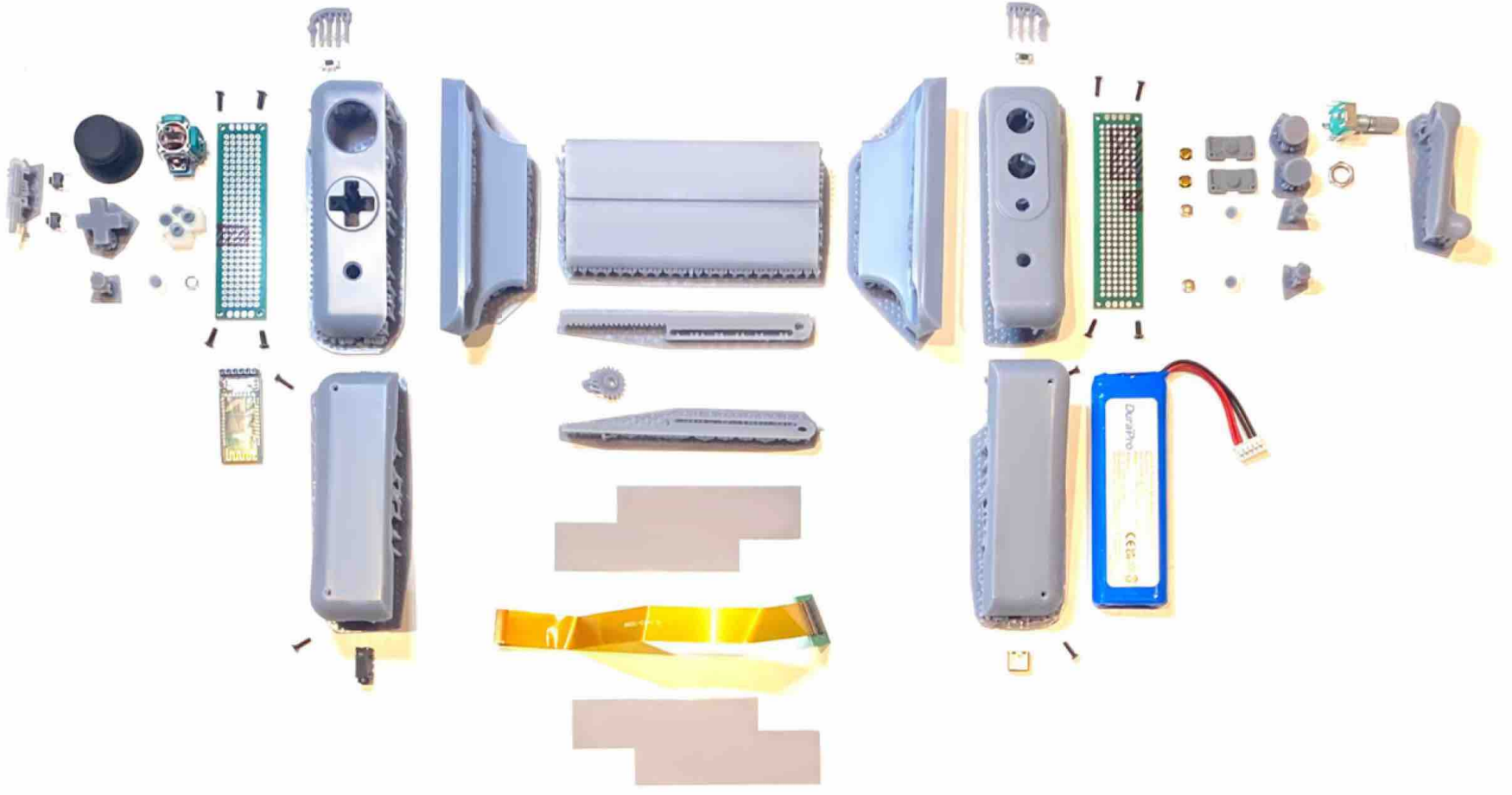


I then did some research to find the right materials and manufacturing techniques to fit the design.





Final 3D Physical Model - Before Assembly



Final 3D Physical Model - After Assembly and Finishing

iPhone 14

iPhone 5

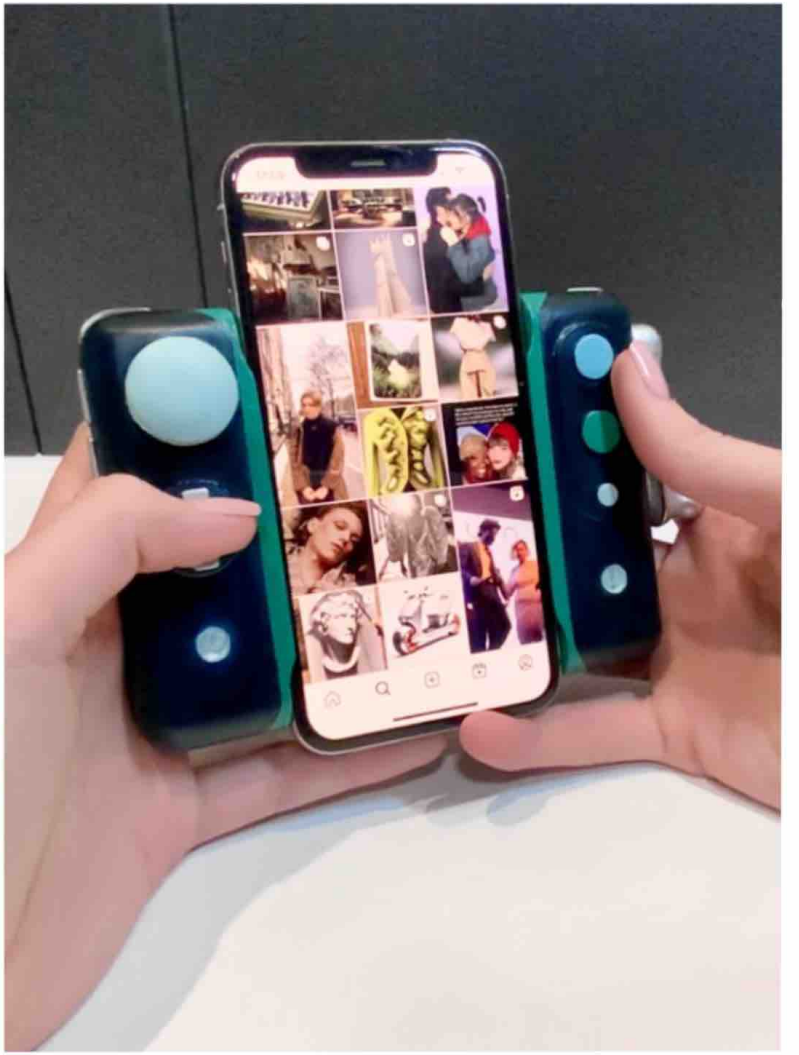
iPhone 6

The model adapts to all phone sizes.

Final 3D Physical Model - In Context

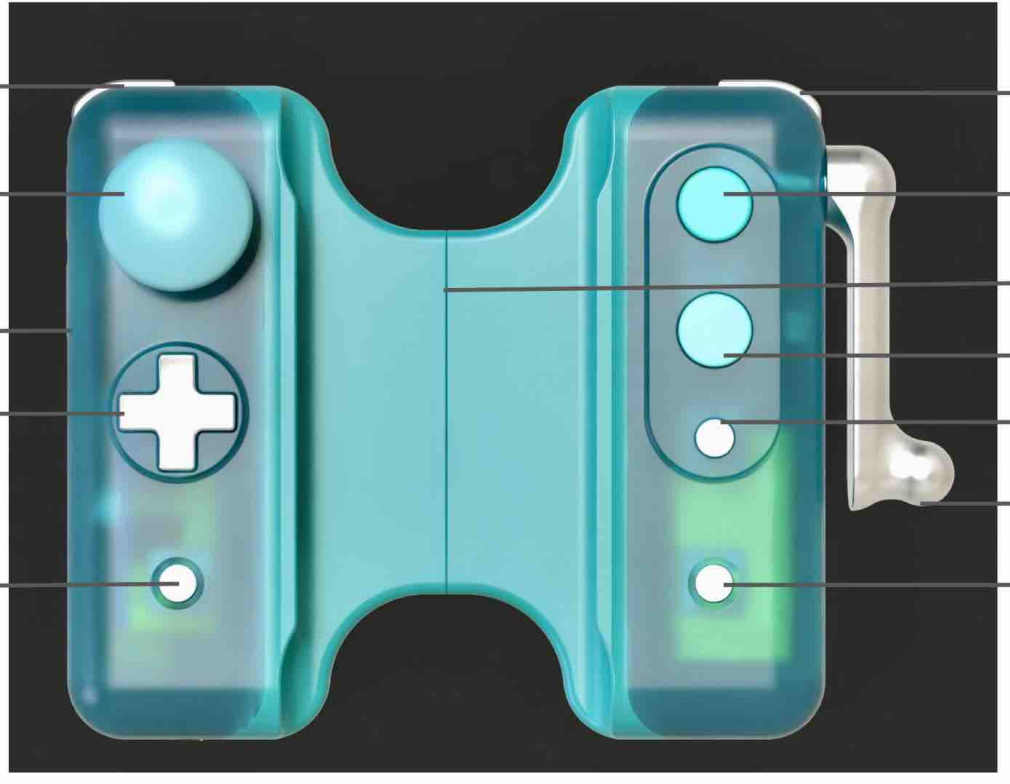
The user connected Hush Guard via Bluetooth to their phone and blocked the touch of their screen in settings to only use the controller.

We can see them unlock their phone and go scrolling on Instagram with the crank.



Hush Guard - How to use it

Hush Guard makes the use of the phone more deliberate and challenging through purposeful physical interactions, it enables a more mindful approach to technology.



App - Optional

The “Hush Guard” App, which is optional, allows the controller user additional personalised support.

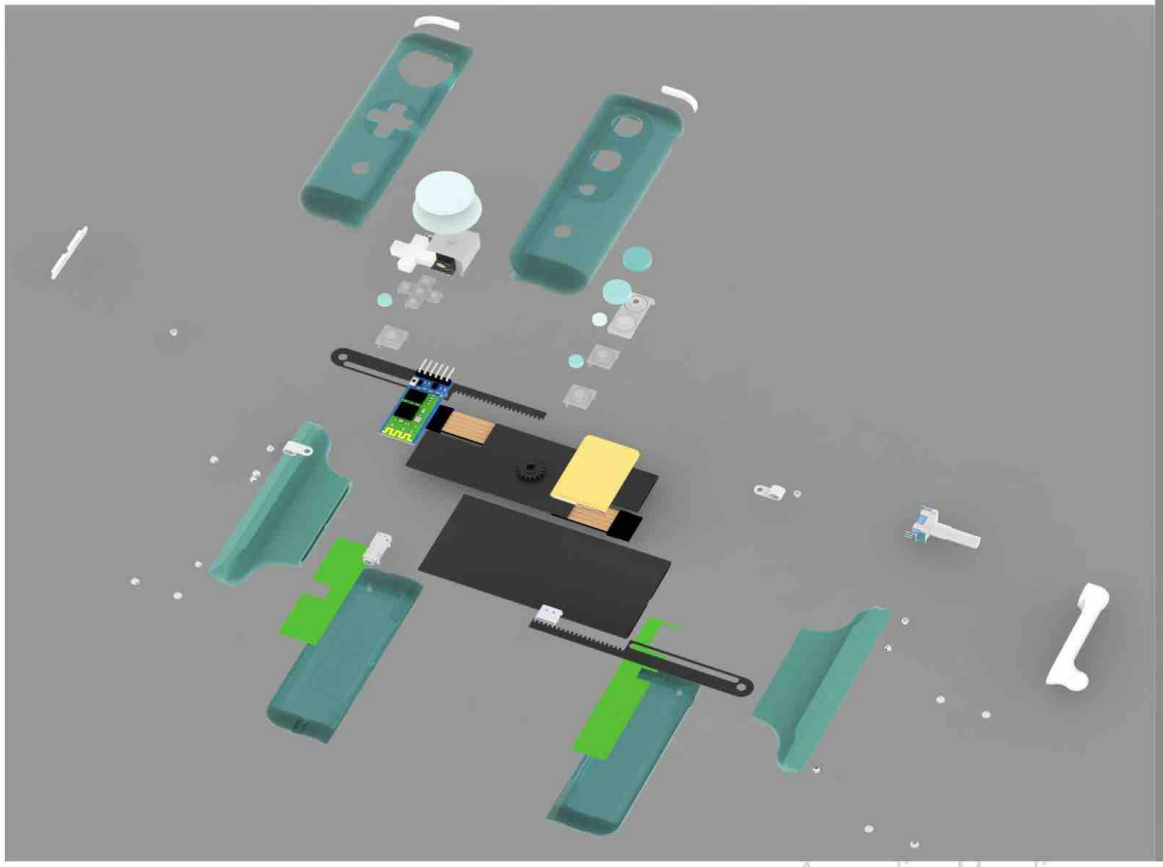
Once the controller is connected via Bluetooth, it allows to use the phone by making each action binding by default.

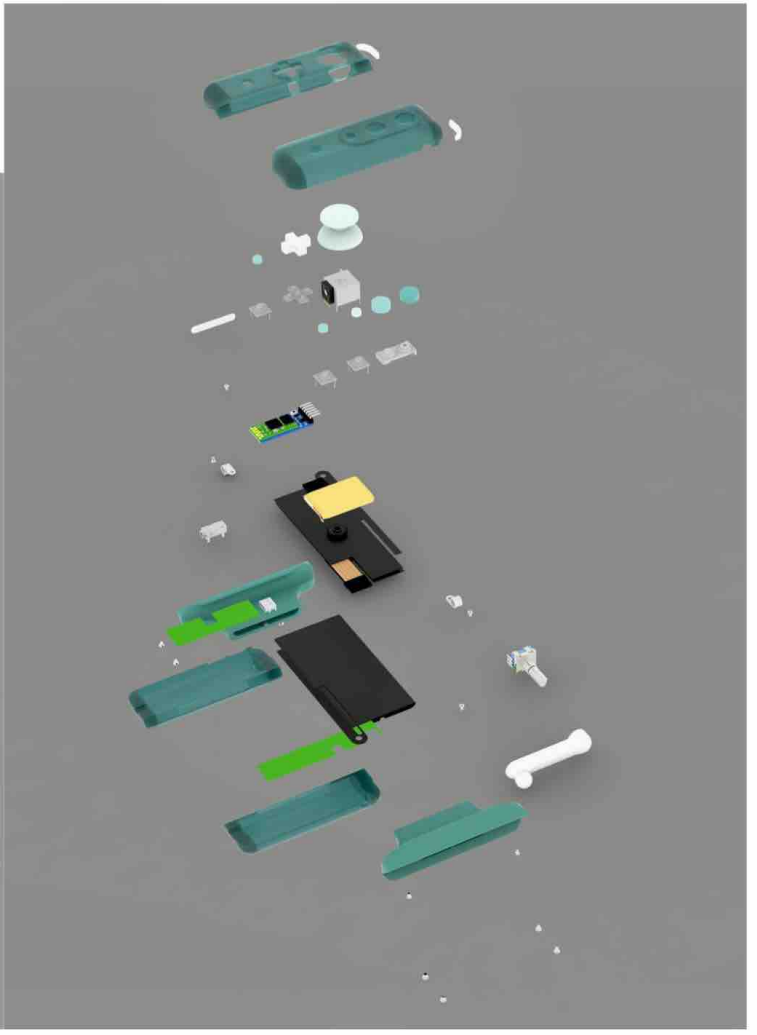
With the app, the user can decide which app to make more complicated to use, to have more control on their digital consumption. Example: Scrolling through work emails may be easy with the joystick, but scrolling through Instagram may require additional effort using the crank.

The user can also schedule a specific time period to stay on their phone per week or numerical Co2 emission rates per week not to exceed, so that when they approaches these numbers, the app can automatically make using the phone more difficult with certain apps.

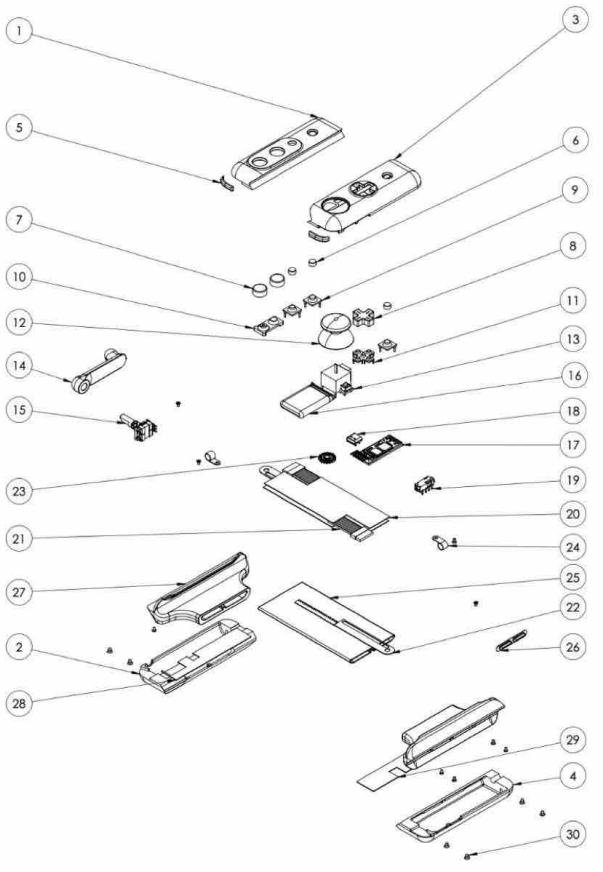
Exploded View

See next page for more details.



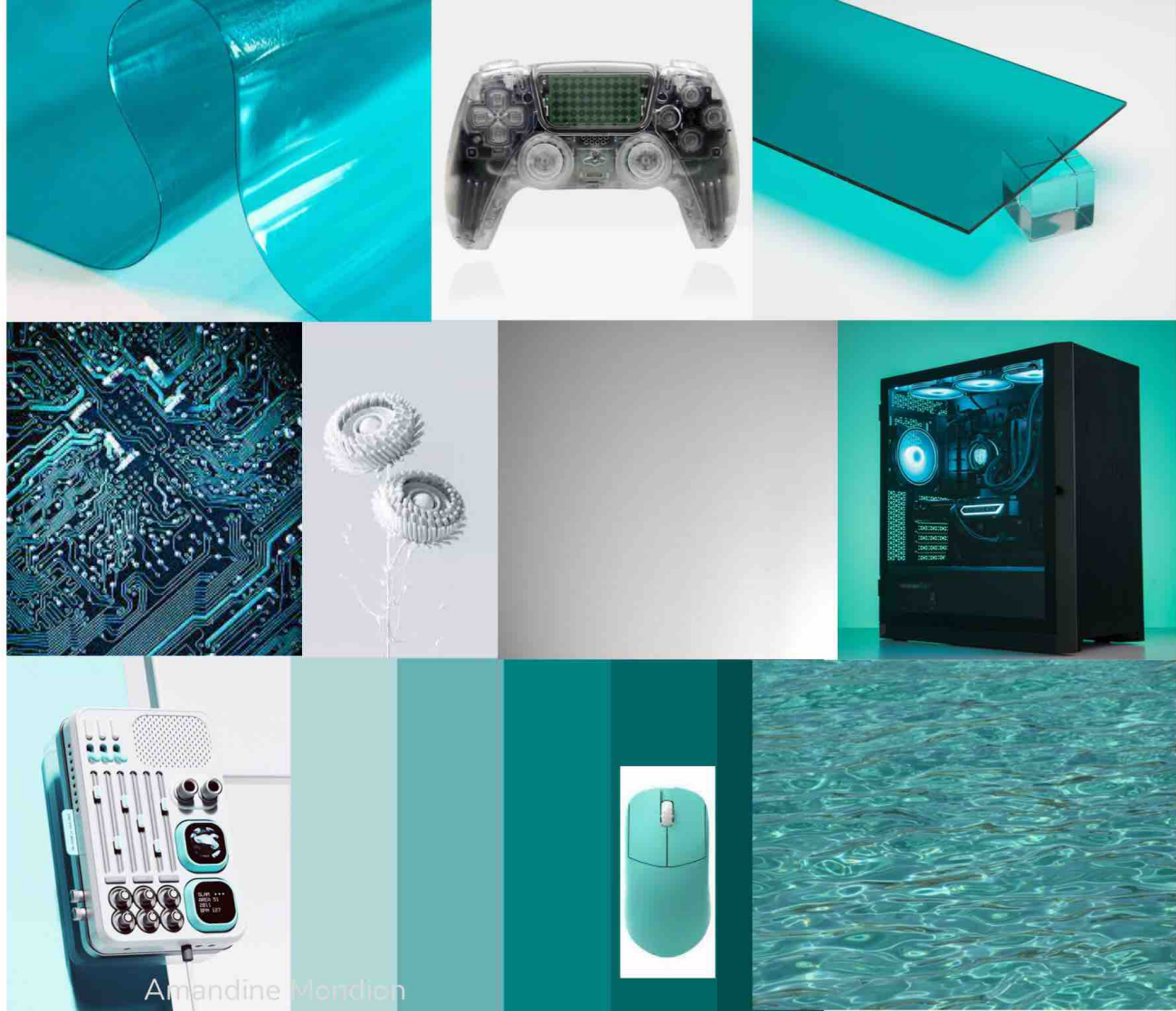


Hush Guard - Amandine Mondion



Part No.	Description	Qty	Material	Manufacture
1	Top Right Part Controller	1	Regrind	Injection Moulding
2	Bottom Right Part Controller	1	Regrind	Injection Moulding
3	Top Left Part Controller	1	Regrind	Injection Moulding
4	Bottom Left Part Controller	1	Regrind	Injection Moulding
5	Back Button	2	Aluminium	Die Casting
6	Small Button	3	Regrind	Injection Moulding
7	Big Button	2	Regrind	Injection Moulding
8	Cross Button	1	Regrind	Injection Moulding
9	Silicone Membrane Small Button	3	Silicone	Compression Moulding
10	Silicone Pads Button	1	Silicone	Compression Moulding
11	Silicone Membrane Cross-Button	1	Silicone	Compression Moulding
12	Joystick	1	Regrind	Injection Moulding
13	Base Joystick	1	Mixed	Sourced
14	Crank Handle	1	Aluminium	Die Casting
15	Rotary Encoder	1	Mixed	Sourced
16	Lithium-Ion rechargeable Battery	1	Mixed	Sourced
17	Bluetooth Module	1	Mixed	Sourced
18	USB-C Port	1	Mixed	Sourced
19	Audio Jack Port	1	Mixed	Sourced
20	Ribbon Cable Cover	2	Regrind	Injection Moulding
21	Ribbon Cable	1	Mixed	Sourced
22	Gear Rack	2	Regrind	Injection Moulding
23	Gear Wheel	1	Regrind	Injection Moulding
24	Flat Spring	2	Steel	Sourced
25	Middle Part Sliding Clamp Mechanism	1	Regrind	Injection Moulding
26	Volume Buttons	1	Aluminium	Die Casting
27	Side Part Clamp Mechanism	1	Regrind	Injection Moulding
28	Master Printed Circuit Board (PCB)	1	Mixed	Sourced
29	Slave Printed Circuit Board (PCB)	1	Mixed	Sourced
30	Screws	16	Steel	Sourced

Colour, Materials And Finishing Board

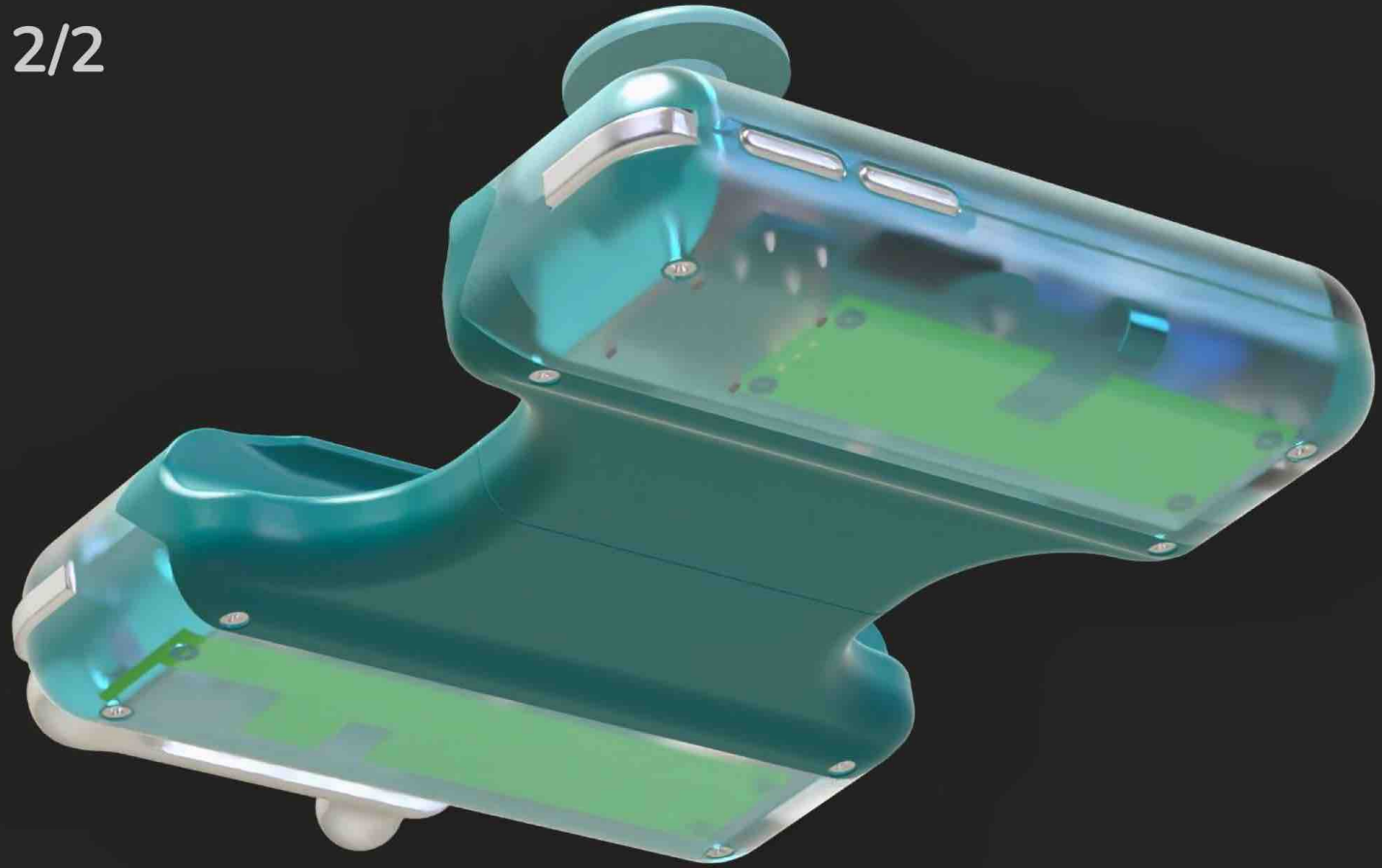


Amandine Mondion

Hero Image 1/2

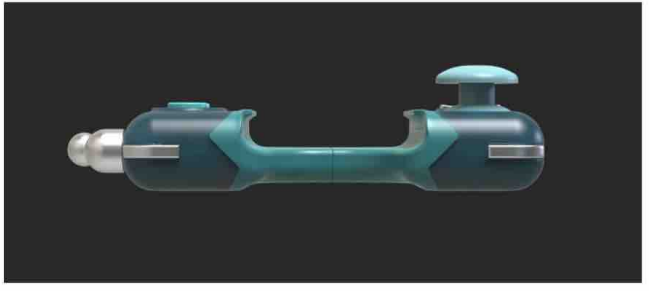
Amandine Mondion

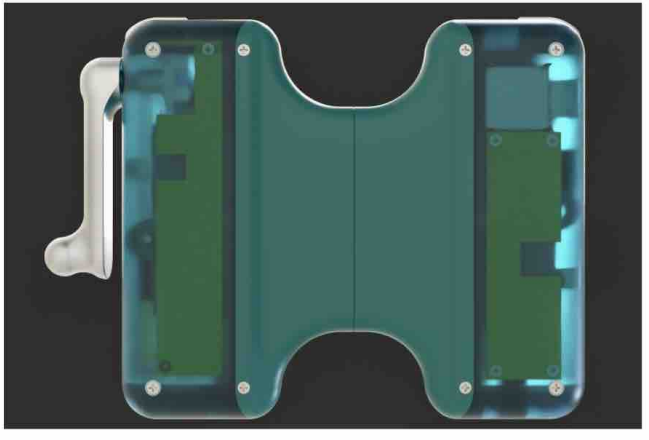
Hero Image 2/2



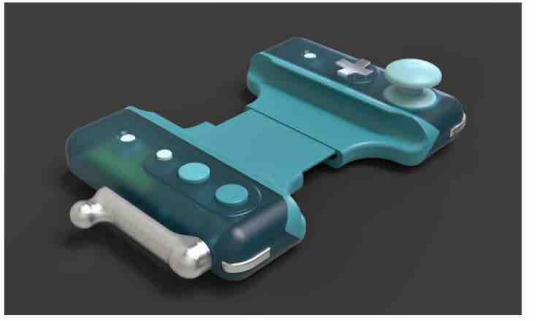
Amandine Mondion

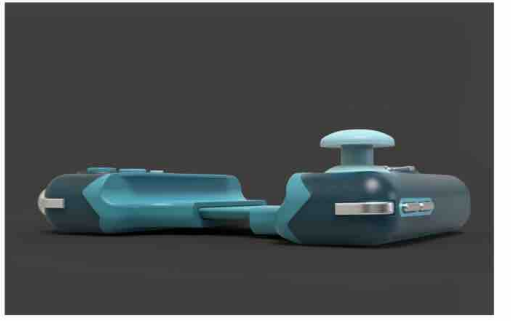
CAD - Closed/Retracted Position

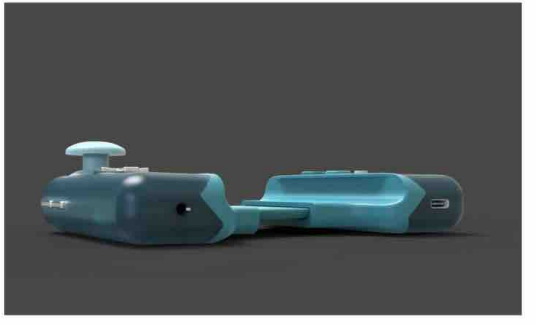


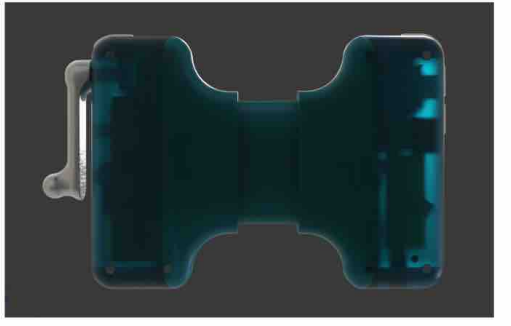


CAD - Open Position









CAD - In Context with Phone

CAD - Colours

The idea is that the user can completely personalise their controller by choosing the color of each part, according to the availability at the moment, the main parts being made of regrind plastic. This allows people to pay attention to the environment by adapting to what is available, while adding personalisation.



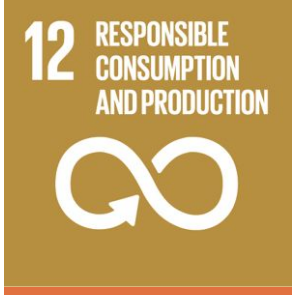



UN SDGs

What UN SDGs does my design tackle?

Main SDG Goal: **Ensure healthy lives and promote well-being for all at all ages.**

Hush Guard acts as a shield against the overwhelming digital landscape, promoting mental health by empowering users to deliberately limit their digital consumption. By integrating controls such as buttons, a crank, and a joystick, Hush Guard challenges users to engage with their devices more deliberately. This intentional approach encourages a balanced lifestyle, addressing the adverse effects of excessive screen time on mental well-being.



Main SDG Goal: **Ensure sustainable consumption and production patterns.**

Hush Guard contributes to responsible consumption and production by encouraging users to extend the lifespan of their devices through mindful and purposeful interaction. Instead of perpetuating a culture of constant device upgrades, Hush Guard promotes responsible technology use, thereby reducing electronic waste. This aligns with SDG 12's aim to foster sustainable consumption patterns and mitigate the environmental impact of digital devices.

Main SDG Goal: **Build resilient infrastructure, promote inclusive and sustainable industrialisation, and foster innovation.**

Hush Guard exemplifies innovation in addressing the challenges of digital well-being. By providing a tangible solution to the issues associated with excessive screen time, Hush Guard enhances technological accessibility for individuals seeking a mindful approach to their digital lives. This contribution aligns with SDG 9's overarching goal of fostering innovation and ensuring inclusive and sustainable industrialization.

Packaging

Amandine Mondion

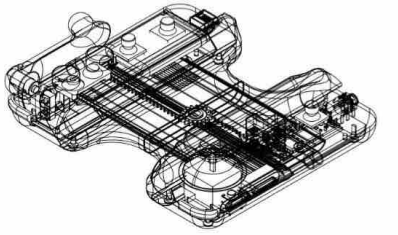
Packaging

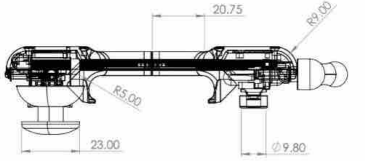
The Hush Gard is sold in a box with a microfiber cloth inside to clean the phone before putting on the controller, as well as a thank you note for the purchase, with an explanation on the back. how to connect the controller to the phone.

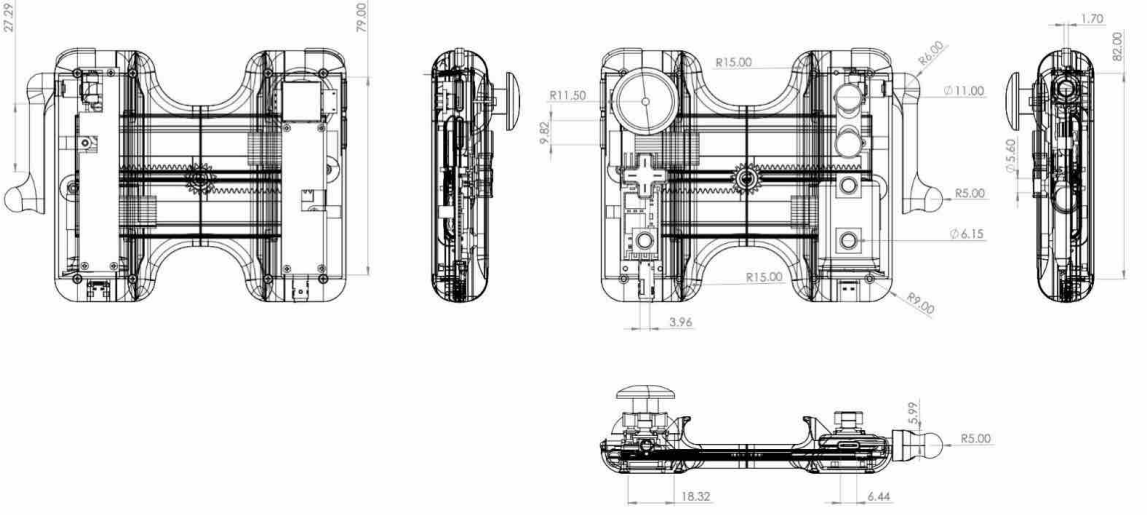
Technical Drawings

Amandine Mondion

Technical Drawings







NAME	DATE	UNITS	REVISION
Amandine Mondion	21/01/2024	MILLIMETERS	V14
TITLE: General Arrangement Drawing			A2 SCALE 1:1

Thank you!

Amandine Mondion