

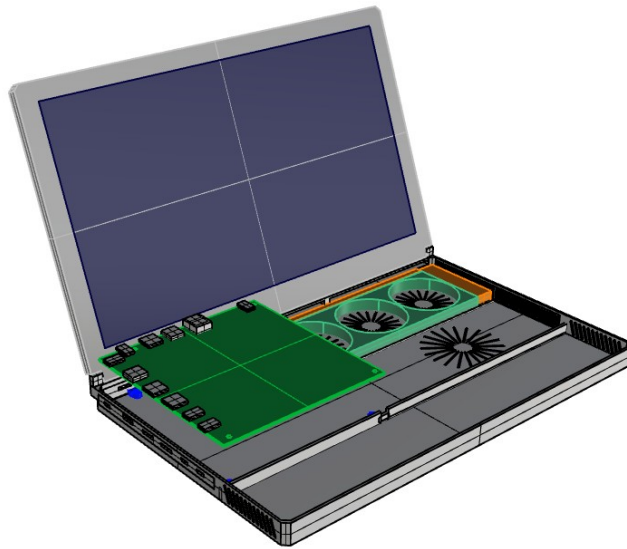
# UNIFIED HUMAN FRIENDLY LAPTOP CONSTRUCTION AND BOARD

*By Ivan Buhaienko*

**The goal of the project is in developing and producing Universal:**

- **motherboard,**
- **chassis construction principles for universal Laptops and other PCs,**

This will allow such computers to be more repair friendly, durable, reusable, having exchangeable parts, having advanced features, able to be produced on 3D printers.



## **Universal Laptop Construction making possible:**

- Effortless Upgrades:** Easily replace or upgrade components, ensuring your laptop evolves with your needs without breaking the bank.
- Hassle-Free Maintenance:** Keep your laptop running smoothly with cleaning accessible ventilation and replaceable coolers. Say goodbye to costly repairs and hello to a device that's easy to maintain.
- Seamless Connectivity:** Connect to external displays or operate an external PC effortlessly. Our universal standards ensure compatibility, offering you flexibility and convenience.
- Extended Lifespan:** modular design means you don't have to replace your entire laptop when you need an upgrade. Save your resources and the planet by embracing our repair-friendly construction.
- 3D Printing Compatibility:** Unlock the potential of 3D printing technology in laptop production. By designing components that can be printed, we embrace a new era of manufacturing possibilities. Anyone can 3D print his Laptop of dream!

## **Advantages for Producers: Revolutionize Laptop Production and Enhance Efficiency**

**Universal Laptop Construction brings a range of benefits for laptop and Mainboards producers:**

- New standard components market can be opened. Mainboard and Cooling systems now can be compatible with many models of laptops. Laptop GPU market will rise, as people will make two-step buying: firstly laptop, and then advanced GPU. And then upgrade them.

**So we will have new growing market for such standardised laptop (compact) parts:**

- Mini-ITX (Nano-ITX) Mainboards,
  - Laptop cases,
  - Displays (with ability to be detachable and having type-c video ports),
  - Cooling systems,
  - Keyboards,
- **Streamlined Production:** With standardized motherboard sizes and universal interfaces, manufacturing becomes more efficient, allowing for faster production cycles.
  - **3D Printing Compatibility:** Unlock the potential of 3D printing technology in laptop production. By designing components that can be printed, we embrace a new era of manufacturing possibilities.
  - **Involving users and communities** into new Portable PC construction activity, creating new paradigm and **making the brand strong and well known** without paying for ADs!

## **New cultural paradigm**

### **The Project has Advantages for Communities:**

#### **Foster Collaboration and Environmental Responsibility with Universal Laptop Construction**

People can create and join a thriving community of tech enthusiasts and eco-conscious individuals, while contributing to a greener future:

- Knowledge Sharing:** Connect with fellow users, share repair techniques, and learn from each other. Our construction promotes collaboration and empowers the community.
- Affordable Technology:** Upgrade specific components instead of buying a new device, making high-quality technology accessible to all. Save money and resources with our sustainable approach.
- Inclusivity and Accessibility:** Our laptops cater to diverse needs through standardized interfaces, promoting an inclusive computing experience for everyone.
- Reduce Electronic Waste:** Embrace repairability and reusability to minimize electronic waste. Together, we can make a significant impact on the environment and create a sustainable tomorrow.

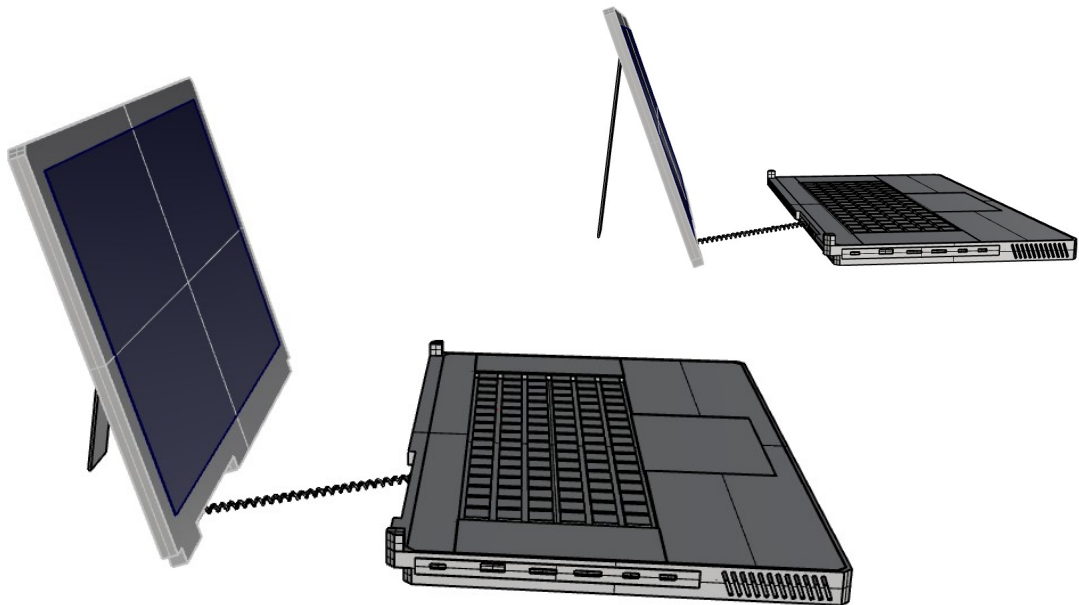
### **Advantages for Ecology: Embracing Sustainability and Environmental Responsibility**

Our Universal Laptop Construction is dedicated to preserving the environment:

- a) **Reduced E-Waste:** By promoting repairability and reusability, we contribute to reducing electronic waste, ensuring a greener future for generations to come.
- b) **Sustainable Manufacturing:** Our modular design and compatibility with 3D printing align with sustainable manufacturing practices, minimizing resource consumption and carbon footprint.
- c) **Extended Product Lifespan:** Our laptops are built to last, minimizing the need for frequent replacements. By embracing durability and repairability, we encourage responsible consumption.

## Principles of Universal Motherboards construction:

- 1) **Universal size(s).** Mini-ITX (17x17cm), or Nano-Itx(12x12cm).
- 2) **Flat.** Outer ports and all interfaces shall be ready to be placed in flat device, such as Laptop.
- 3) **Left and Back side shall have main outer interfaces/ports (type-c, USB, DP, HDMI, LAN, Sound).** Additional USB and other connections for making them at device right side remote panel are welcome. Board Right side may have type-c connection for display cable and USB port for other devices connection. Also it shall have USB 3.2 cable connection for the right side of laptop.
- 4) **Shall be ready for Universal Standard devices design** (cooling systems ,etc.)
- 5) **Has power input from outer power adapter.** Type-C (USB-Power Delivery) preferred!
- 7) **Has Universal display control connection and signals, to operate the display brightness and other parameters.**
- 8) **Mobility.** Mainboard must have battery charging / operating controller and / or ability to work using battery. Or such Universal controller shall be added as separate board. Board shall have Universal battery digital operating interface (HID) for Windows and other OS. Battery can be set up and configured in BIOS.
- 9) **Throughout features.** Good if the Board will have video input and keyboard output to work as display + keyboard for external PC without starting the Laptop. It can be also realized by display and keyboard independent connectivity. Such displays are already on market.



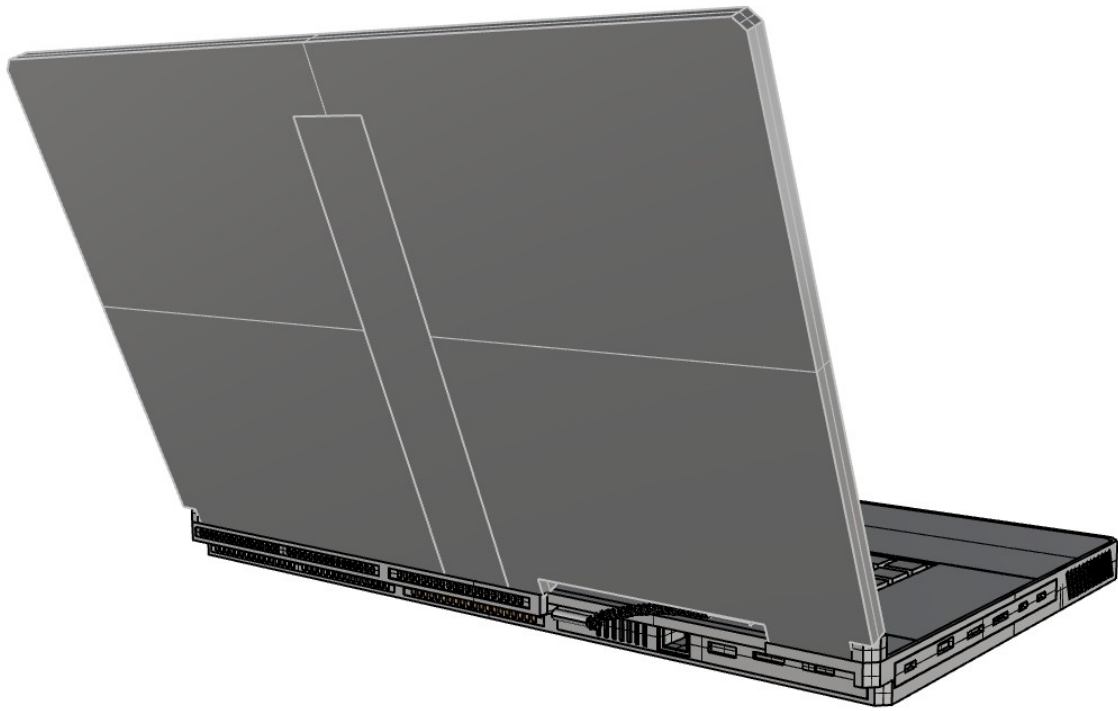
**Detachable Display that can be operated as separate device by the wire or wireless, or connected to other devices.**



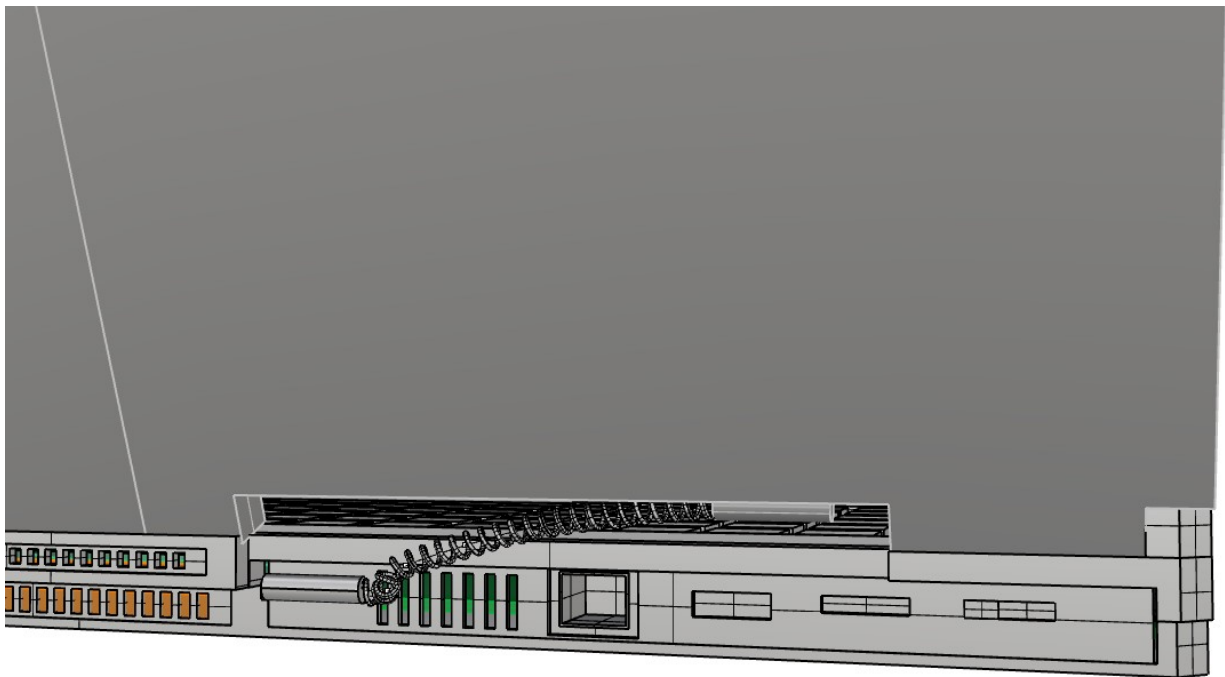
**Ports at Left side: Power type-c, HDMI, 2xUSB 3.2, 2x type-c. Also sound speaker grid.**



**Right side. In this variant Cooling System ventilation grids, and Sound speakers grid.**



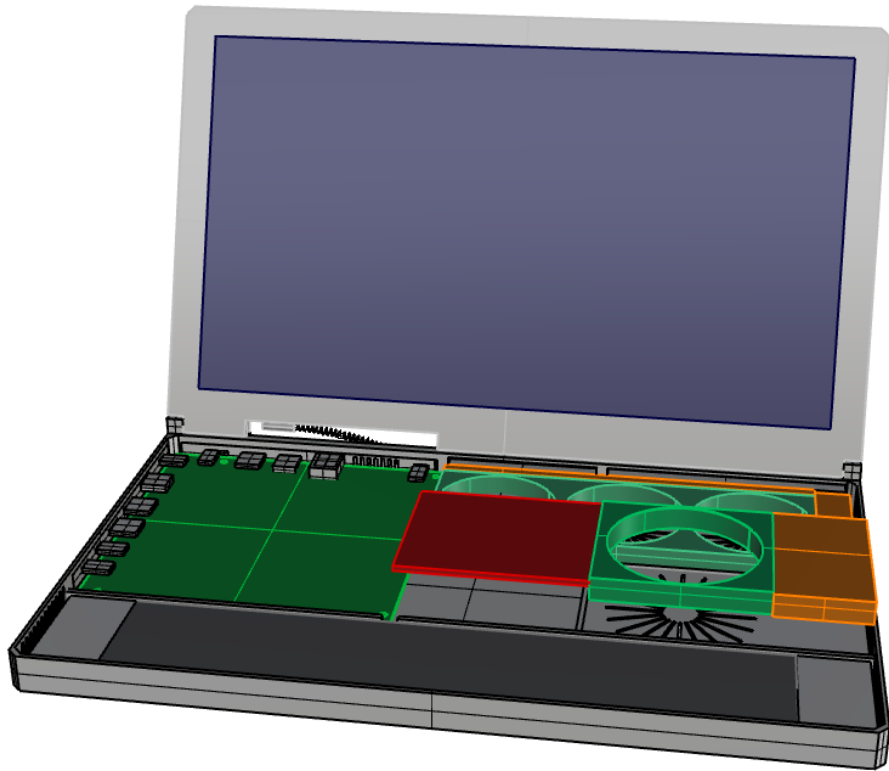
**Back side. Optional display stand visible.**



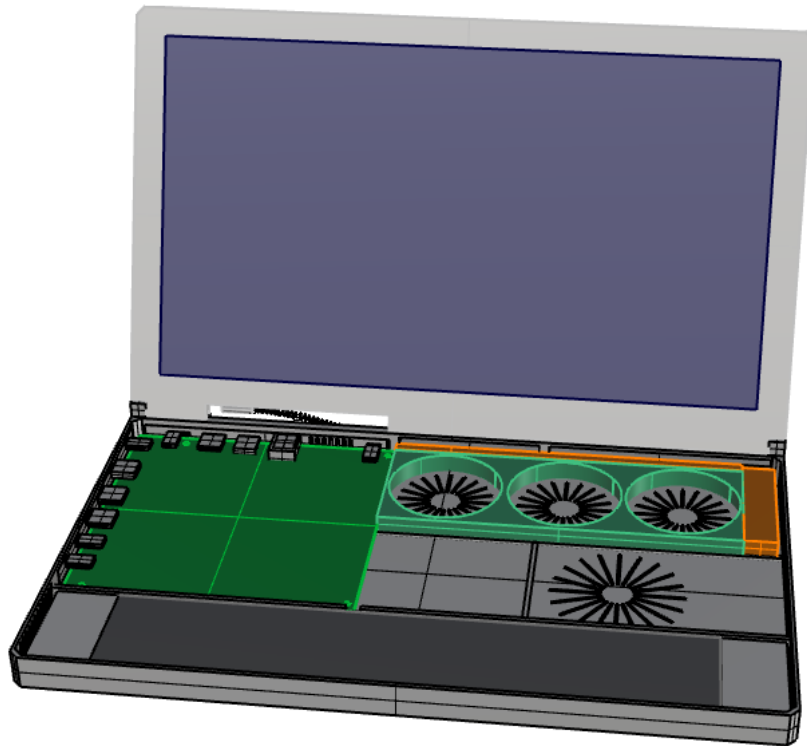
**Back side. Cooling system grids, type-c Display Port with cable attached to it and to Display, LAN, HDMI, USB, type-c PD for other display or for other display cable position.**



**Case top detached easily.**



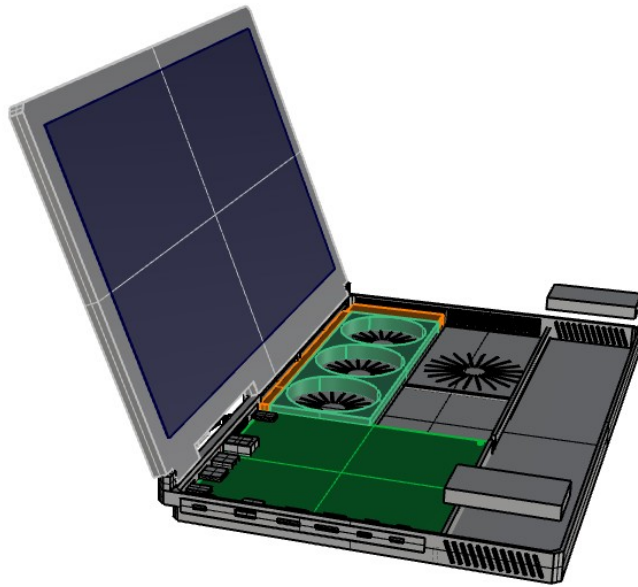
**Additional Video Card with its Cooling System can be replaced.**



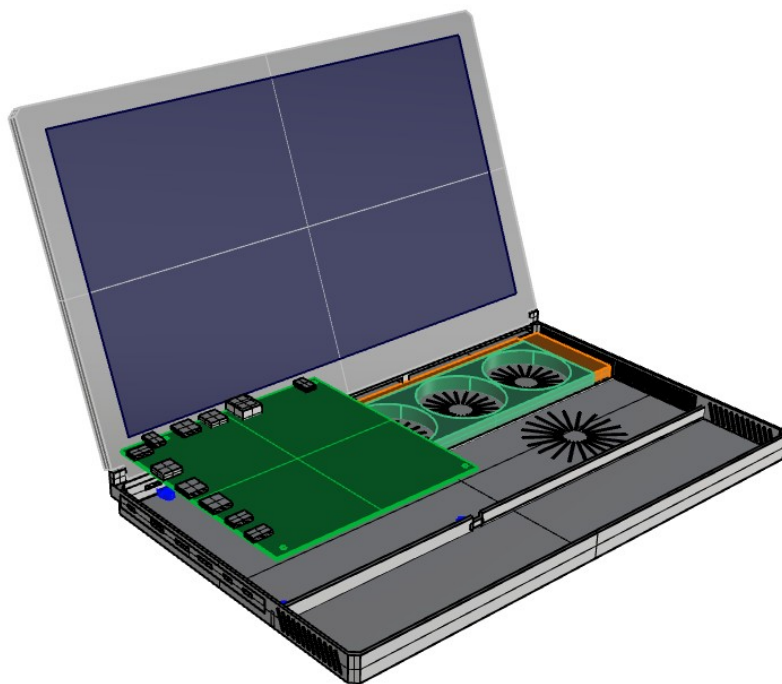
**Cooling system for powerful CPU at the back side. Easy for maintain. At that place a second video card can be placed. Mini-ITX board is well visible.**



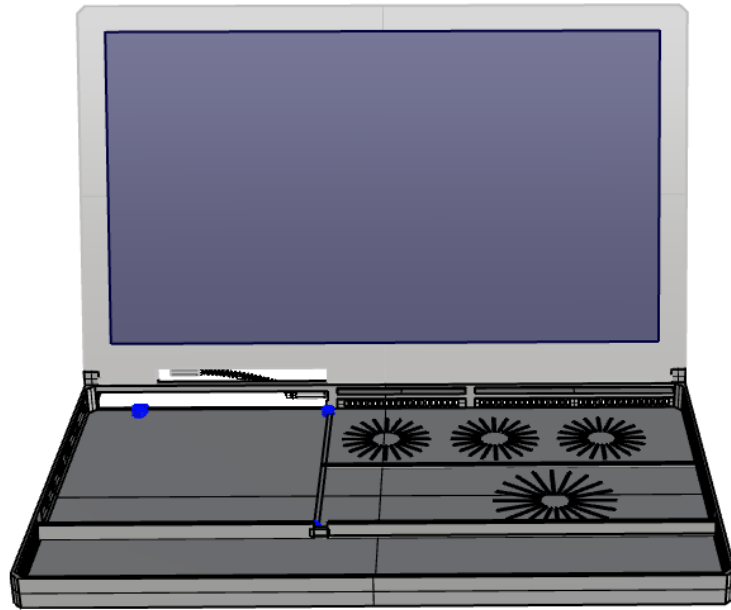
**Detaching the battery.**



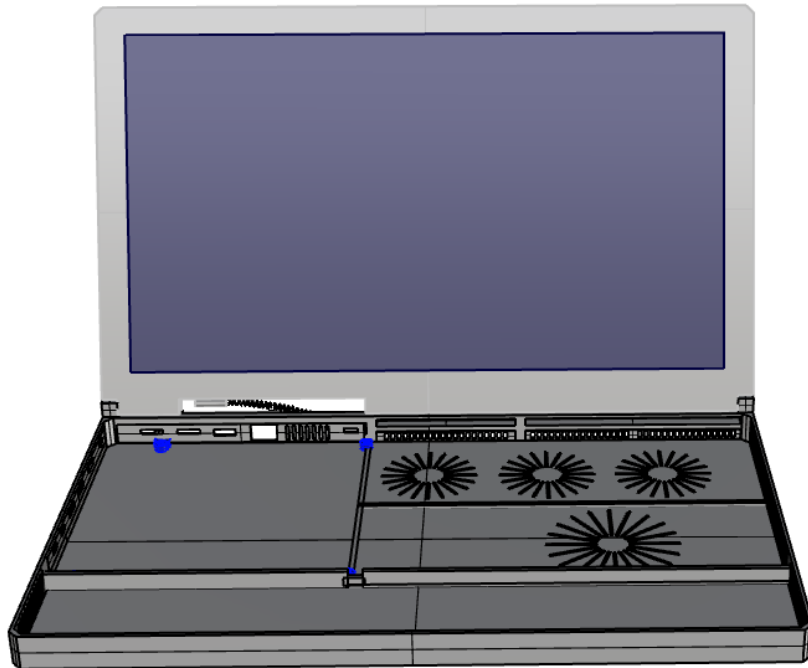
**Sound system detached.**



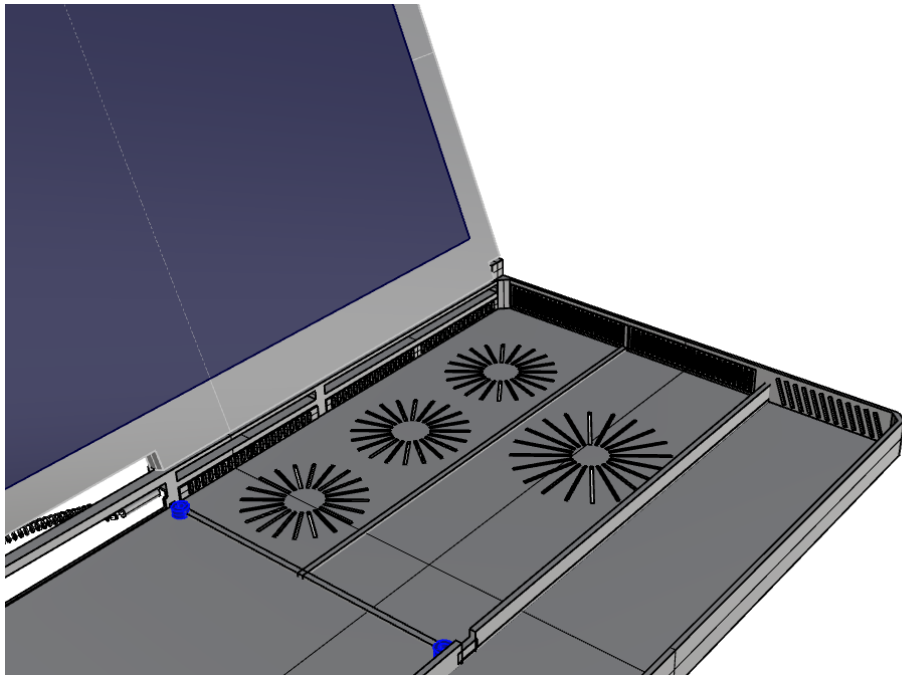
**Main board detached easily. Can be replaced with standard Mini-ITX board.**



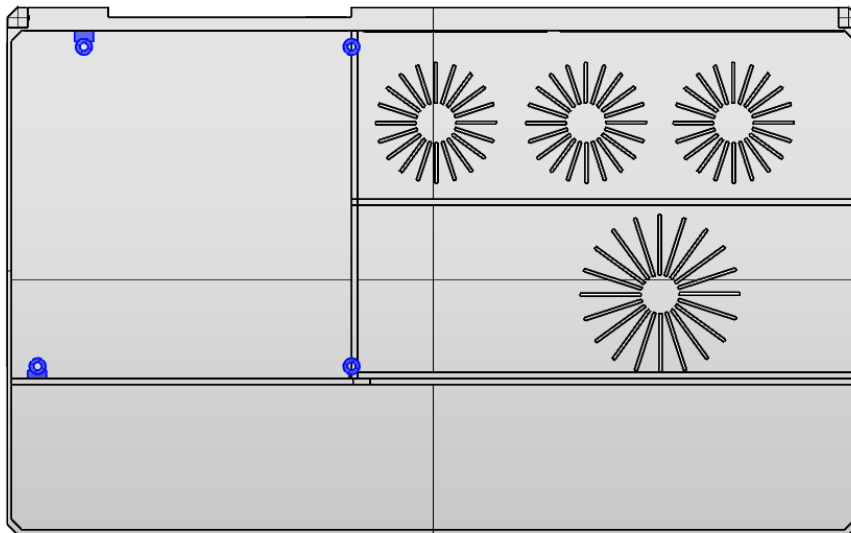
**Empty case. Standard sizes, spaces.**



**Empty case. Back ports plank attached (for every Board its own).**



**Empty case. Ventilation grids visible.**



**Empty case. 3D printing friendly.  
2 video cards space or video card + big CPU cooling space**

This construction will enable people to create their own laptops using universal Motherboards and other parts, printing cases on 3D printers or buying designs they like.

This will create advanced demand for specific Mini-ITX, Nano-ITX motherboards.

All activity will make some new or old brands famous.

People will have a lot of creativity freedom!

Join this project, create your own popular universal product for new devices around the globe!