

DIY Mobile Gen Lab

Object Description

The DIY Mobile Gen Lab is a functional prototype of a genetic lab built into a suitcase. The suitcase incorporates specific open source devices and is dedicated to the DIY bio community.

The object was built by Urs Gaudenz (GaudiLabs) during the MobileLab Hackaton organized by BioTehna (Kapelica Gallery) in collaboration with Hackteria from June 10th to 18th 2013 in Ljubljana (Slovenia).

The object was shown during the closing event of the hackaton in the Kapelica Gallery and at the DIY Bio Europe meetup 2013 at Waag Society Amsterdam.



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Suitcase

The mobile lab is built into a vintage DELSEY business briefcase produced around 1980.

Outer dimensions: 44 x 35 x 9 cm.

Total weight including devices and battery: 3.5 kg

The exact same briefcase was used back in 1980 by Telsy in Turin (Italy) for their famous "Mobile Telephone Encryptor" TDS-2003 (Crypto Museum).



Mobile Telephone Encryptor" TDS-2003

Thermocycler

DIY Thermocycler for Polymerase Chain Reaction (PCR) based on the OpenPCR open source hardware project (OSHW) by Tito Jankowski und Josh Perfetto.

- Electronic control board (MyOpenPCR) with Arduino UNO board (OSHW) and USB connection to control the PCR
- Thermobloc hand manufactured using a shared open hardware cutting tool
- Hacked Intel PC cooler with heat pipes and peltier element for heating and cooling
- Blue backlit 4x20 character liquid crystal display



Gel Electrophoresis Chamber

Laser cut design by Marc Dusseiller (OSHW). Including two gel carriers. Illuminated by a cold cathode tube.

Transilluminator

Made from parts of a hacked flatbed scanner. Uniform and bright illumination area using visible light for analyzing gels of stained DNA and protein

Pipetting Station

Backlit, laser cut pipetting station for different sizes of snap-top test tubes (including tubes).

Noise Synthesizer

Built in "8bit MixTape" sound gadget (by Marc Dusseiller) based on the arduino compatible Babygnusbuino board (by Michael Egger, Anyma).

Document and Pipette compartement

Integrated document pouch and compartment for pipettes (not included). Illuminated by an LED strip (8 SMD LEDs).

Rechargeable Battery

Embedded 12V battery with connector clips.

