



Foldable screen

Glassslide opening

● OFF-GRID

The integrated battery is able to power the device for six hours in full operation. This means that the device can scan glass slides continuously for six hours. In this time the on board AI will be powered as well. It will analyse the captured images with respect to an selected NTD.

● PORTABLE

The handle is placed geometrically on the device and the placement of components make the device outbalanced. Through the integrated touchscreen and accu, the device is easy to carry around and used with no worry about the availability of additional electronics at the designated surveying area.

● ROBUST

The screen is attached to the device in such a way that the screen is not easily damaged from the outside. Next to that, all the structural parts of the device are made of aluminum, making sure that the overall structure of the device stays intact even during high impact accidents.

● INTERACTION

The interaction with the device is kept as simple as possible. In order to make the device work only two steps have to be carried out: The screen should be opened first. After that, the power button should be pressed. Now the device is ready to work.

+ THE EMBODIMENT OF AN OFF-GRID DIGITAL MICROSCOPE

This automated diagnostic microscope is build in order to diagnose people for Neglected Tropical Diseases (NTD's) in remote areas in Sub-Saharan Africa.

Currently the diagnosis is executed by manual microscopy by highly trained personel. These people are prone to fatigue and mistakes after hours of analysing samples. Also the throughput is low resulting in high costs.

The developed microscope takes the burden of analysing a sample and selecting infected area's in the sample away. After the AI has done this work, the result will be shown by means of images on the screen. Finally a medical expert will interpret these captured images and determine a treatment.

During my thesis, I improved the design of this microscope in such a way that it can be used in remote area's; the previous design had to be connected to the power grid, a seperate monitor, keyboard and mouse.