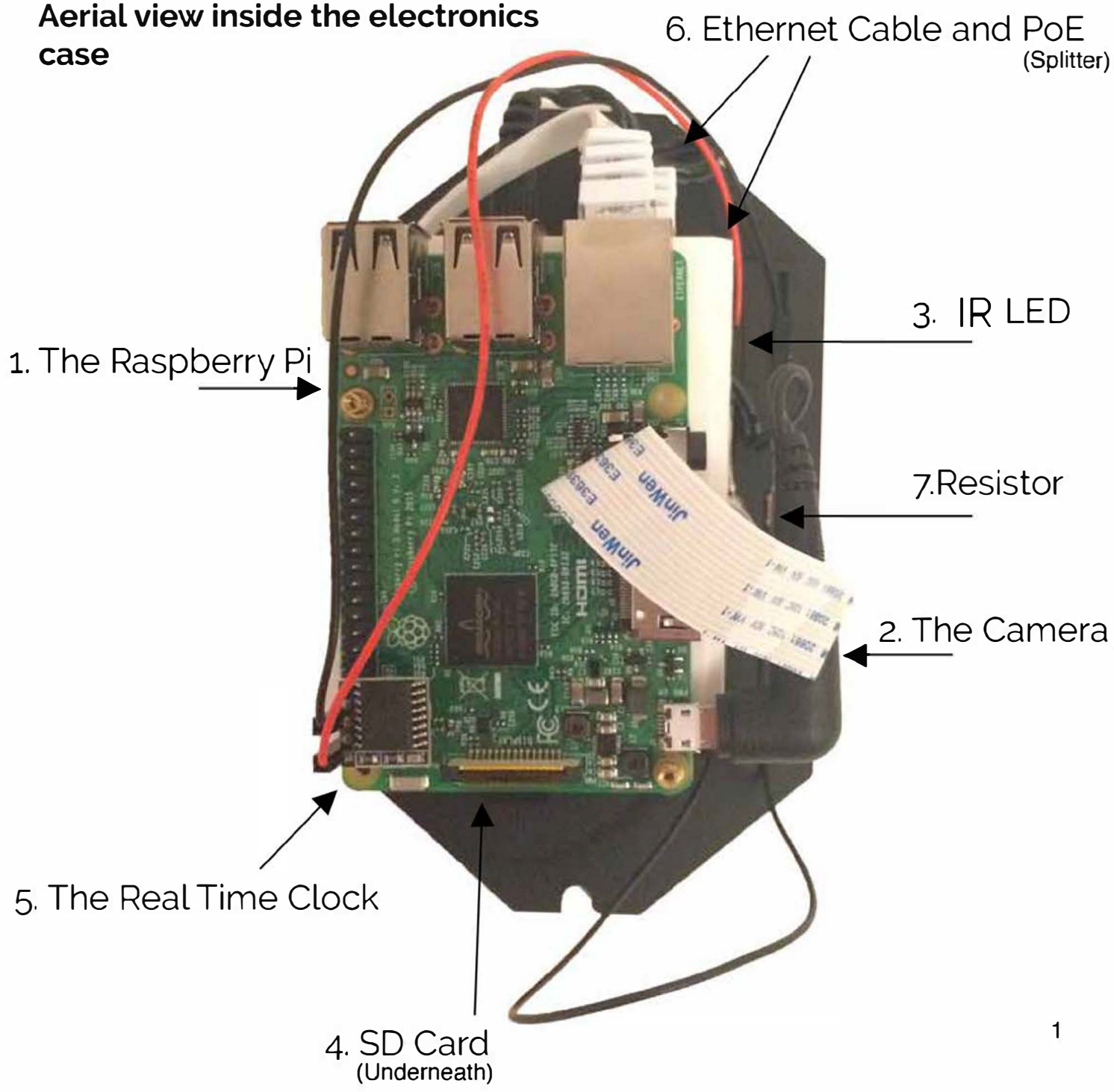
Inside your BirdBox

This document provides detailed information on the XperiBIRD birdbox and the how it works. The tiny camera installed in the nest box is controlled by a Raspberry Pi, a small programmable computer. It records video sequences triggered by the movement in the nest, and takes photos on demand. By using this technology we can observe and study nesting birds without disturbing them.

Aerial view inside the electronics case



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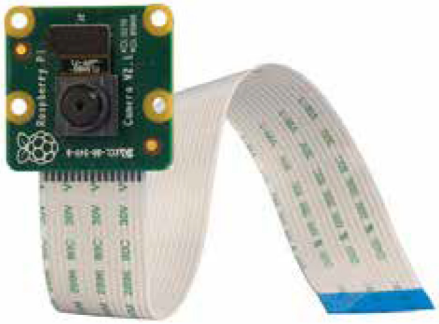
1. The Raspberry Pi

The Raspberry Pi inside is a small yet powerful computer. It is the brains of the kit, connecting and controlling all the other electronic parts.



2. The Camera

The Raspberry Pi v2 camera module can be used to take high definition videos and still photographs.
It is a 8-megapixel camera with a fixed focus that connects to the Raspberry Pi through the ribbon.
For the camera it is important to use NoIr (No Infrared), it will allow you to see in the dark with infrared lighting.

3. The IR LED

The IR LED (infrared light-emitting diode) allows the camera to see the birds in the dark. IR LEDs produce light with a longer wavelength than visible light, so it's invisible to the eye, doesn't disturb the birds but the Birdbox camera can is designed to detect it. IR LEDs have a long life and are more environmentally friendly than traditional lamps. .

4. SD Card

The SD Card is a little memory card that is able to store all your photos and videos. It also contains the operating system of the kit.

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5. The Real Time Clock

The Real Time Clock (RTC) is the time-keeper. It provides useful information on when each of the photos or videos are taken. It may also be coded to stamp time the photos you take.

6. Ethernet Cable and PoE Unit

The Ethernet cable is used to connect the Power over Ethernet Unit (PoE) to the Raspberry Pi. The PoE powers and transmits data. The PoE Injector gives the power and data necessary through one Ethernet cable to the kit while the PoE Splitter in the kit splits them back into power and data for the kit to use.

7. Resistor

Resistors make it possible to control the currents and voltages needed in the circuit.