XPERIBIRD.be INSTALLATION GUIDE

Version 2.02
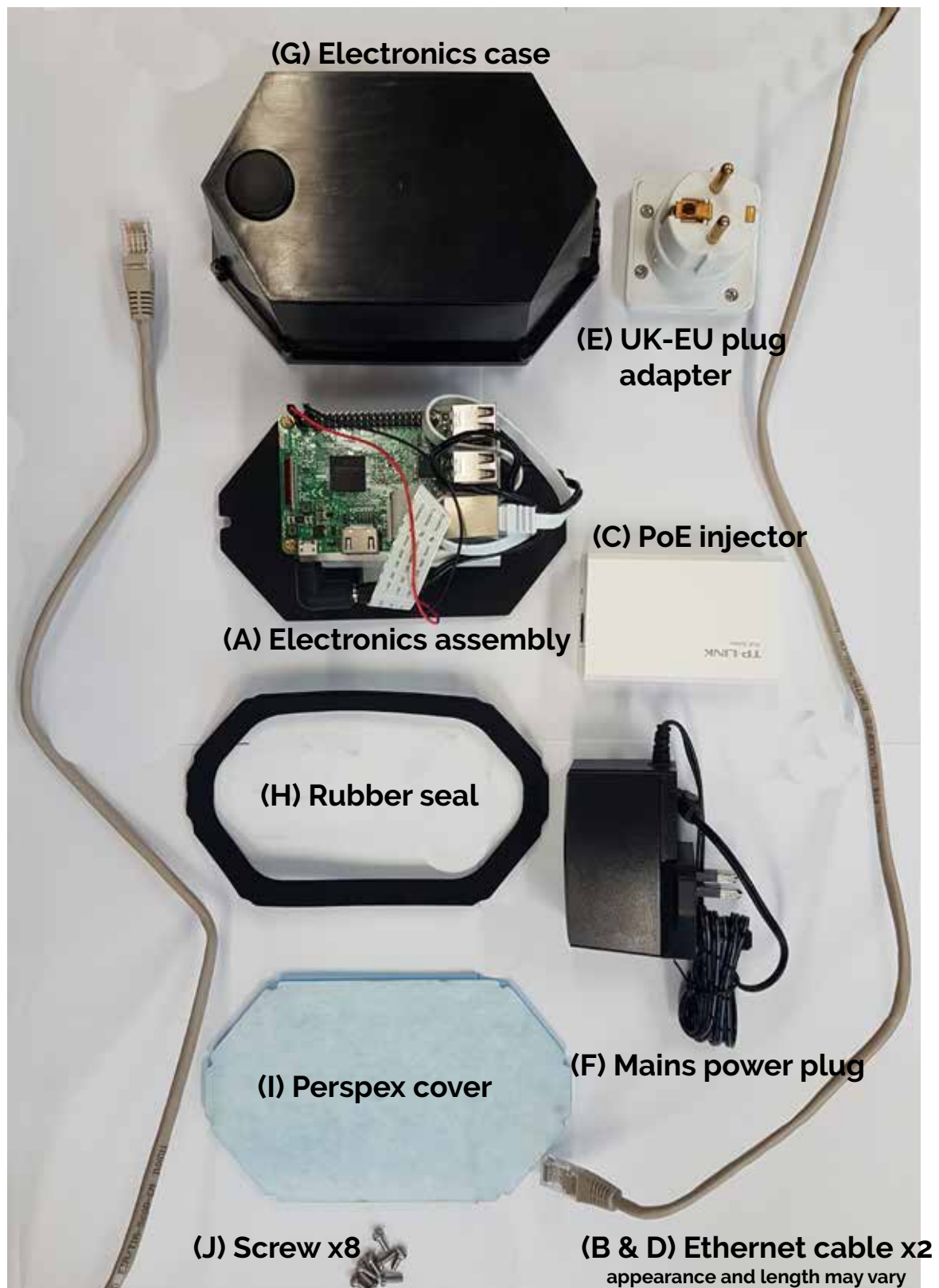
XperiBIRD.be

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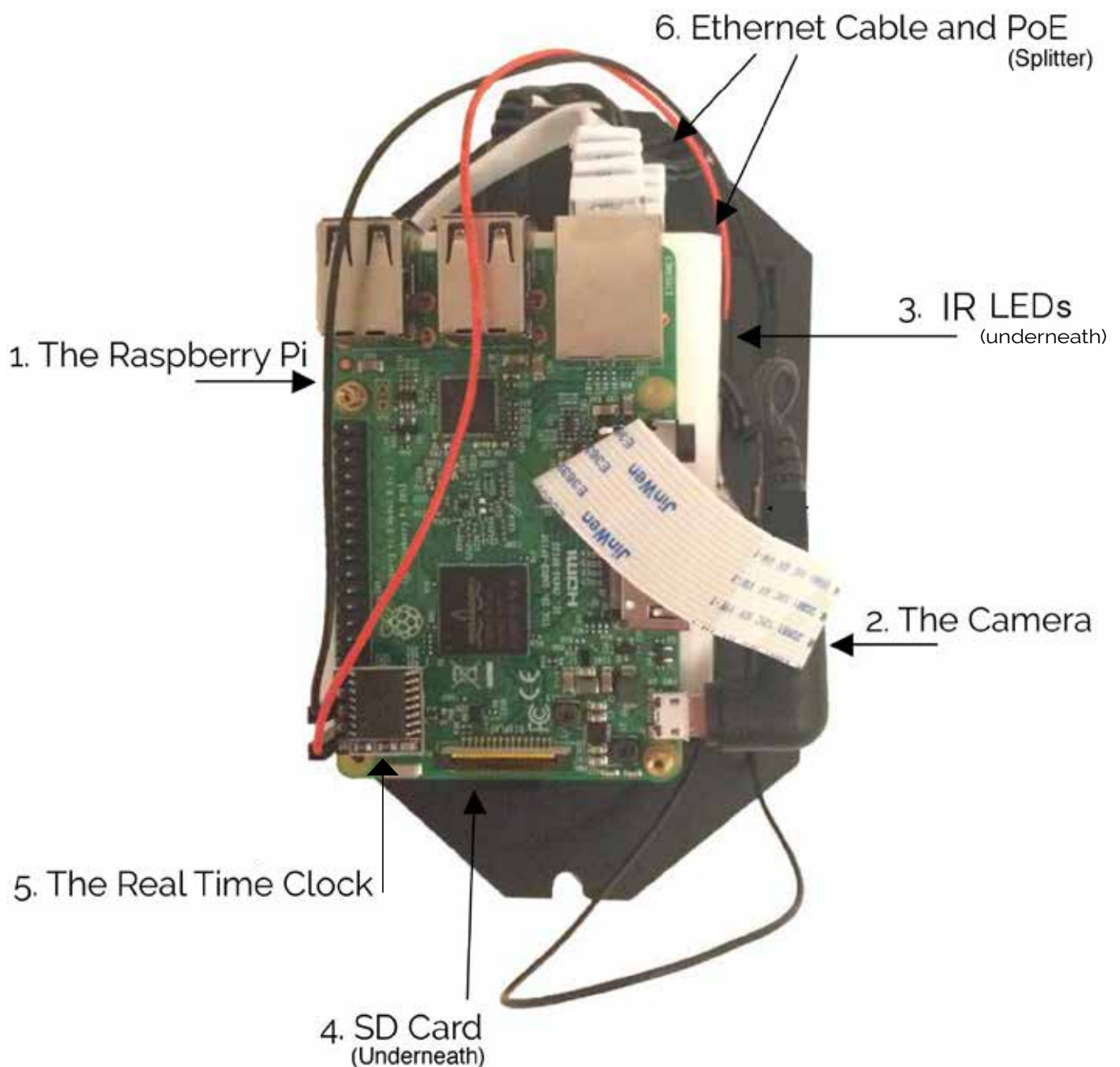
This document provides detailed information on the XperiBIRD.be birdbox and the how it works. The tiny camera installed in the nest box is controlled by a Raspberry Pi, a small programmable computer. It records video sequences triggered by the movement in the nest, and takes photos on demand. By using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

Birdbox parts list

(G) Electronics case

(E) UK-EU plug adapter

(C) PoE injector

(A) Electronics assembly

(H) Rubber seal

(F) Mains power plug

(I) Perspex cover

(J) Screw x8

(B & D) Ethernet cable x2
appearance and length may vary

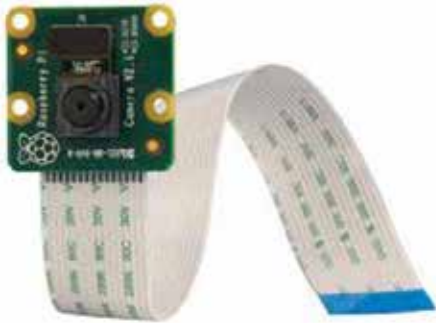# About The Electronics Assembly Components

Top-down view of the electronics assembly

1.The Raspberry Pi

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

2.The Camera

The Raspberry Pi NoIR Camera module v2 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 via a ribbon. Unlike other cameras, the Raspberry Pi NoIR camera has no infrared (IR) filter so you can use IR illumination to see in the dark.

3.The IR LEDs

The IR LED (infrared light-emitting diode) allows the camera to see birds in the dark. IR LEDs produce light with a longer wavelength than visible light (invisible to the eye) so it doesn't disturb the birds but is detectable by the NoIR camera. 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.

5. The Real Time Clock

The Real Time Clock (RTC) is the time keeper. It provides the useful information of when each of the photos or videos are recorded.

6.Ethernet Cable and PoE Units

The PoE units enable power to be transmitted to the birdbox and data to be transmitted between your computer and the birdbox. Ethernet cables are used to connect your computer, the PoE units and the birdbox.
The PoE 'injector' unit provides the power and data necessary through an ethernet cable while the PoE 'splitter' (underneath the Raspberry Pi) splits the power and data from the ethernet cable to transfer them

1

First, you'll need to download the "Bonjour" software package from the following URL. Insert or copy the URL into your internet browser and follow the download instructions.

This software allows the electronics assemblyto talk to your computer when plugged in via the ethernet connection.

Note - if you are using a Mac you don't need to install Bonjour. It's only necessary if you are using a PC that is running Windows.
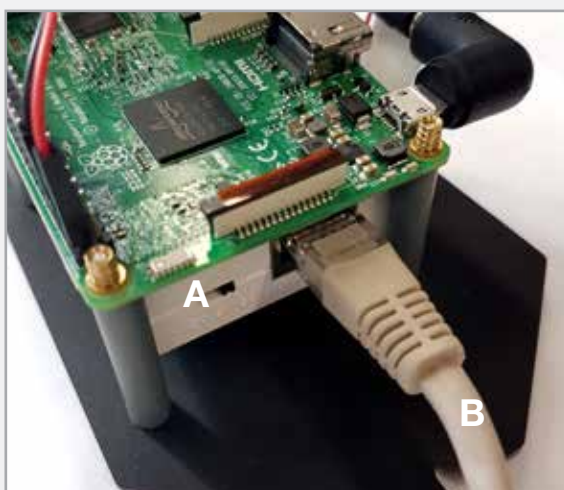
https://support.apple.com/kb/dl999?locale=en_GB

2

Next, you should download and install the Chrome browser.

The birdbox has been optimised to work in Chrome and doesn't support Internet Explorer.

3

Plug your long ethernet cable (B) into the PoE 'splitter' unit (A) located under the Raspberry Pi in the electronics assembly.

Note - the long ethernet cable (B)can be up to 50m long and will travel from the birdbox back to your computer for viewing and recording.
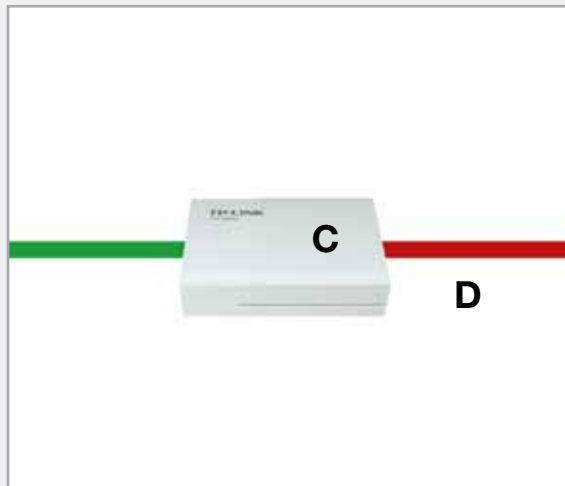The black switch on the PoE 'splitter' (A) should always be on '5V'.

4
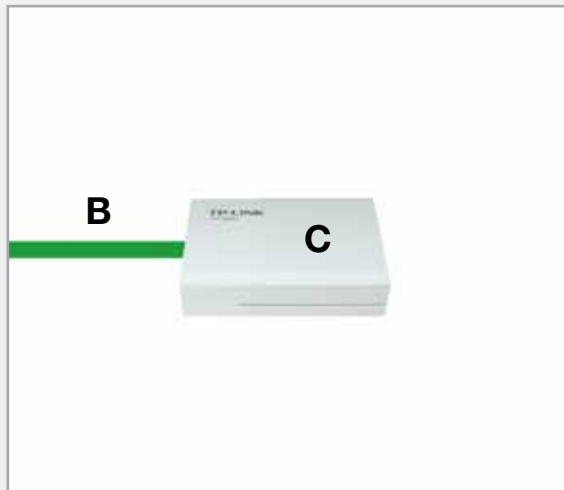
Plug the ethernet cable from the XperiBIRD birdbox (B) into the PoE 'injector' unit (C) where it says 'POWER+DATA OUT.'
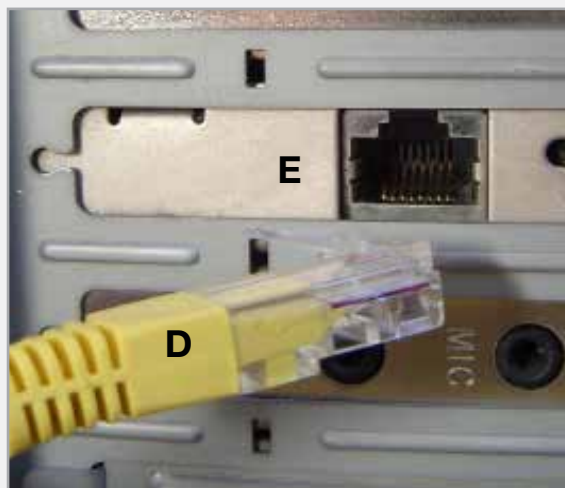
5

You're now ready to connect the XperiBIRD.be birdbox to your computer.

Plug the shorter ethernet cable (D) from your computer into the PoE 'injector' unit (C) where it says 'LAN IN'.
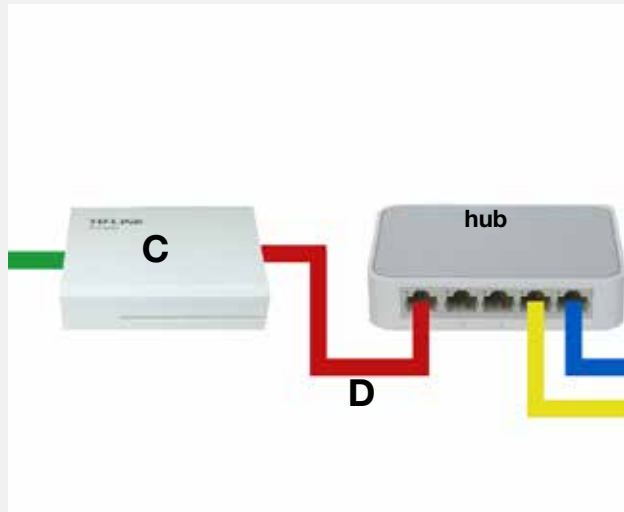
6

Take a look at your computer and locate the ethernet port. It will look like the diagram (E).
If the port is free, plug in the ethernet cable (D) to connect it with the PoE 'injector'.

If it already has an ethernet cable plugged in (i.e to the school network) you will need to use the hub.
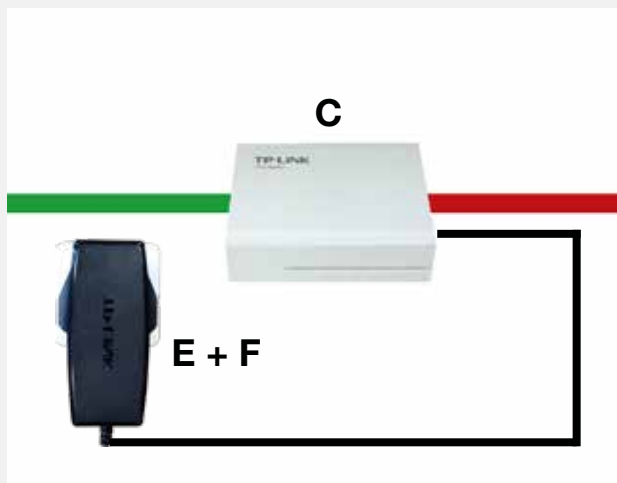
7

If you need to use a hub:

i) Plug the ethernet cable that was originally in your computer (blue) into the hub. This will be the school's network connection,
ii) then plug a new cable (yellow) from the hub into your computer,
iii) lastly, plug a cable (D) from the PoE 'injector' unit (C) into the hub.

8
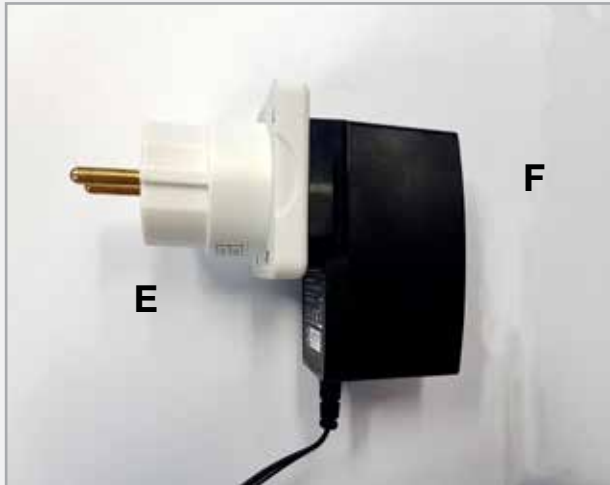
Attach the mains power plug (F) to the UK-EU plug adapter (E).

9

Plug the mains power plug and adapter (E+F) into the PoE "injector" unit (C).

Plug the mains power plug and adapter (E + F) into a power socket and connect it to the PoE 'injector' unit (C) where it says 'DC 48V'.

A green light on the PoE "injector" unit (C) will indicate the power is on.

10

Your XperiBIRD birdbox should now be connected to your computer, powered and ready to test.

To view the live feed, open a browser window on your computer.

Note - Remember to use the Chrome browser and ensure internet (WiFi) switched OFF for the first test.

11

Type the following URL into your browser's address bar:

http://xperibird.local

The XperiBIRD birdbox language selection page will be displayed. Select your preferred language to continue. Now you should see the view from your birdbox camera. Test successful.

If you don't see the language selection page, check the cables are connected correctly, click REFRESH on your browser and wait a few minutes. Read through the guide again and send an email to info@xperibird.be with a description of your problem.
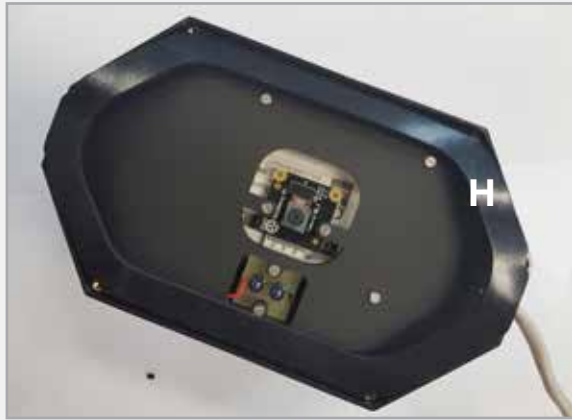
12

G   B
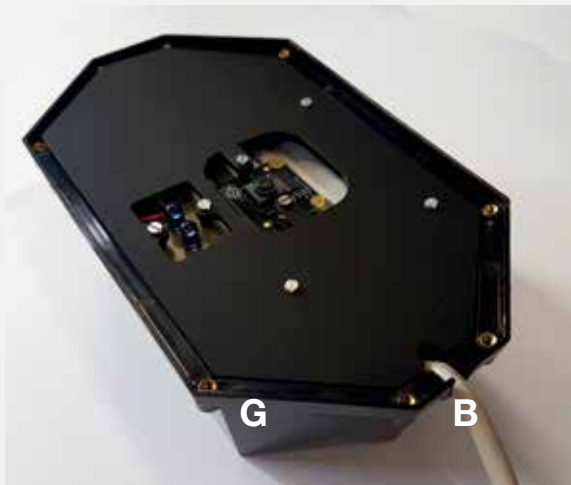
Once you have successfully tested your camera, place the electronics assembly into the electronics case (G).
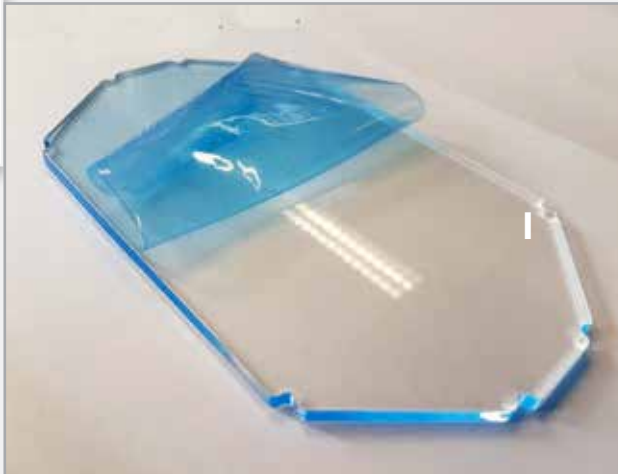
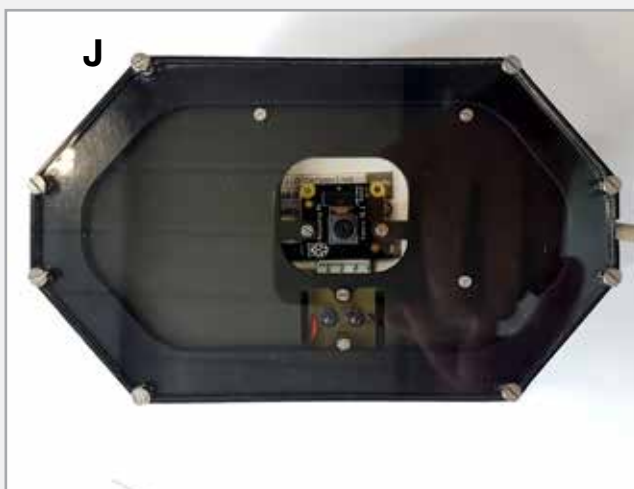Make sure the ethernet cable (B) feeds through the electronics

13

Place the rubber seal (H) onto the electronics case.

14

Remove the film from both sides of the clear perspex cover (I).

15

Place the clear perspex cover (I) on the electronics case on-top of the rubber seal (H).

Then, Insert and tighten the screws (J) to create a tight seal.

16

Now it's time to place the electronics case in your wooden nest box.

You're all ready to go.

Your XperiBIRD.be Birdbox is ready to record the nesting birds!

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Everytime you want to view the live feed of the birdbox type the following URL into your Google Chrome browser's address bar:

http://xperibird.local

If you don't see the language selection page, repeat testing Step 11.

If you wish to change any of your camera settings you can read the 'Advanced Birdbox Contols' document.