



Logitech Circle Teardown

What's inside this ball-shaped camera?

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INTRODUCTION

What's inside this ball-shaped camera?

TOOLS:

- [Phillips #0 Screwdriver](#) (1)
- [Spudger](#) (1)
- [Tweezers](#) (1)

Step 1 — Not a Single Screw in Sight!



- The Circle camera has no external screws. The first step to get in requires a plastic spludger: the dark colored ring is held on with double sticky tape.
- Note: the ring is made of infrared transparent plastic, and includes lenses to help direct the night vision LEDs.

Step 2 — A Peek Inside



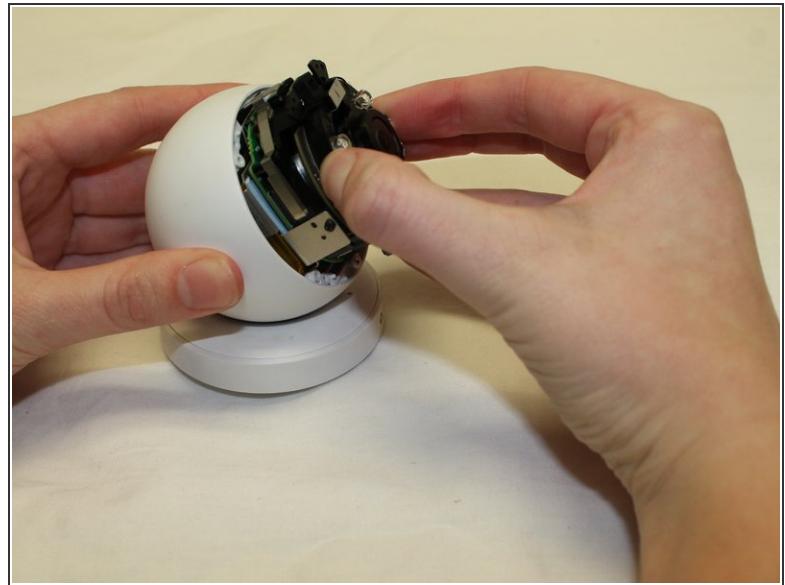
- It's all screws from this point out: a lot of them. Consider using bags to hold groups of screws together for reassembly.
- Unscrew the four screws circled in order to remove the first ring.

Step 3



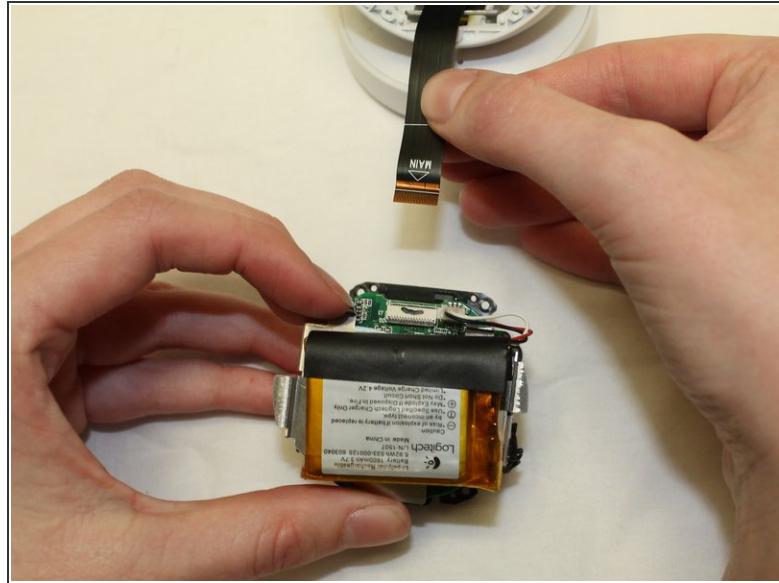
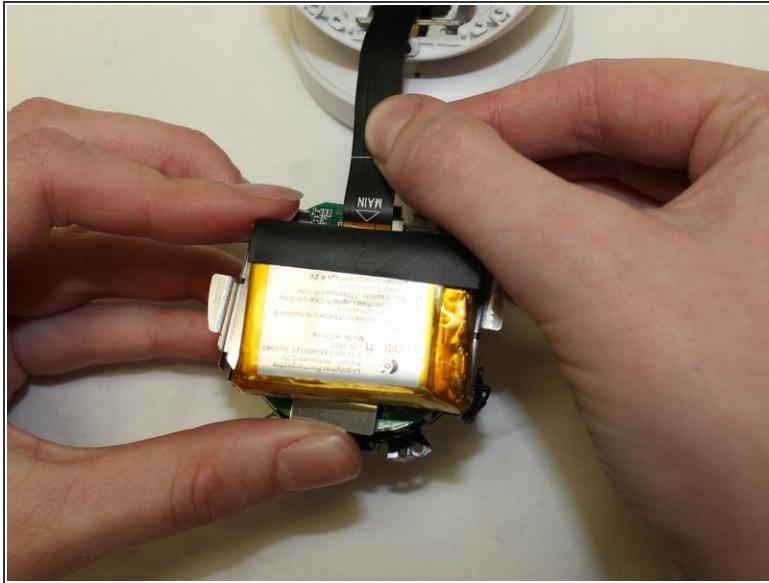
- Remove the next ring by continuing to unscrew the screws in the circled locations.

Step 4



- Finally, remove the last set of screws to access the inner parts of the circle.
- Gently pull out the lens/battery assemble -- it's attached to a flexible ribbon cable that can rip, so be especially careful.

Step 5 — Inside the Ball



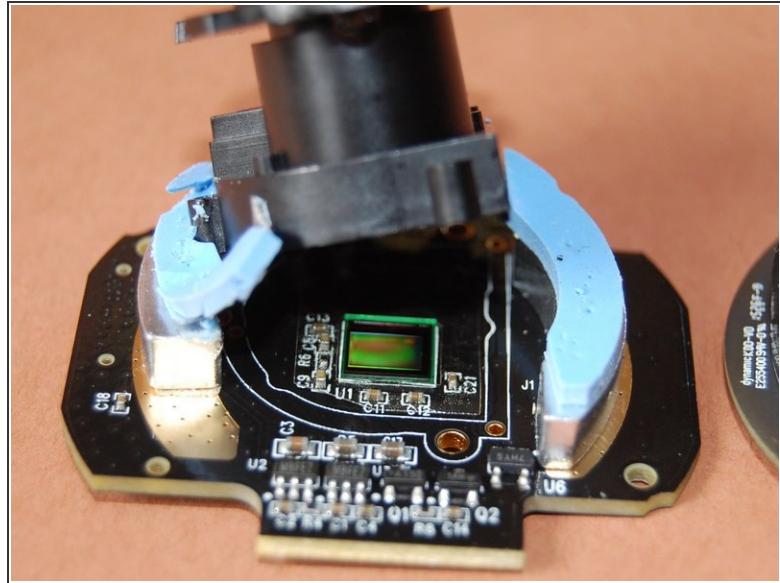
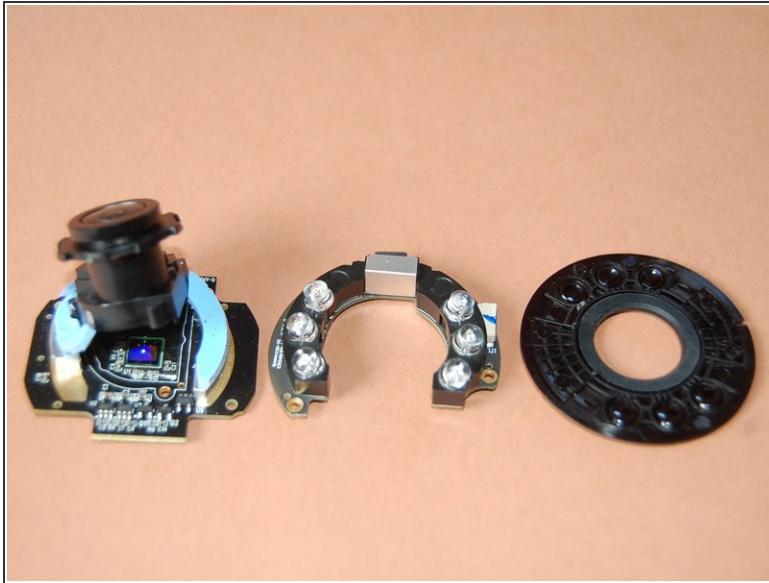
- Take care not to damage the flexible cable. On the connector, flip up the black plastic cam to release the cable. You can then remove the camera / battery assembly from the ball.
- Note the extensive use of heat sinks and thermal interface (TIM) materials. This camera is delicately balanced thermally.

Step 6 — Hidden USB Connector



- Ho! What's that? Under a soft spot in the base is a hidden USB connector, presumably used for firmware loading in production.
- To disassemble the base find 3 screws under the soft spot, punch through using a screwdriver, and remove the screws. After that both parts can be easily separated.

Step 7 — Optical Chain



- The outer ring has lenses to focus IR light, and a hole for the camera lens.
- The six infrared LEDs are on a thick board, with an aluminum heat spreader, and a connection to two solid metal blocks attached to the sensor board.
- The lens is manually focused and secured with what looks like hot melt glue (this may cause focus issues over time).
- There is just one piece of filter glass, flipped in place for day mode (higher end cameras use separate glass for day and night mode).
- The optical sensor is at the bottom of the stack. It's surrounded by a clear plastic sticker (if you know why, post in the comments!).