



2017 HTC U11 Teardown

2017 HTC U11 Teardown What Exactly HTC U11 Edge Sense Is

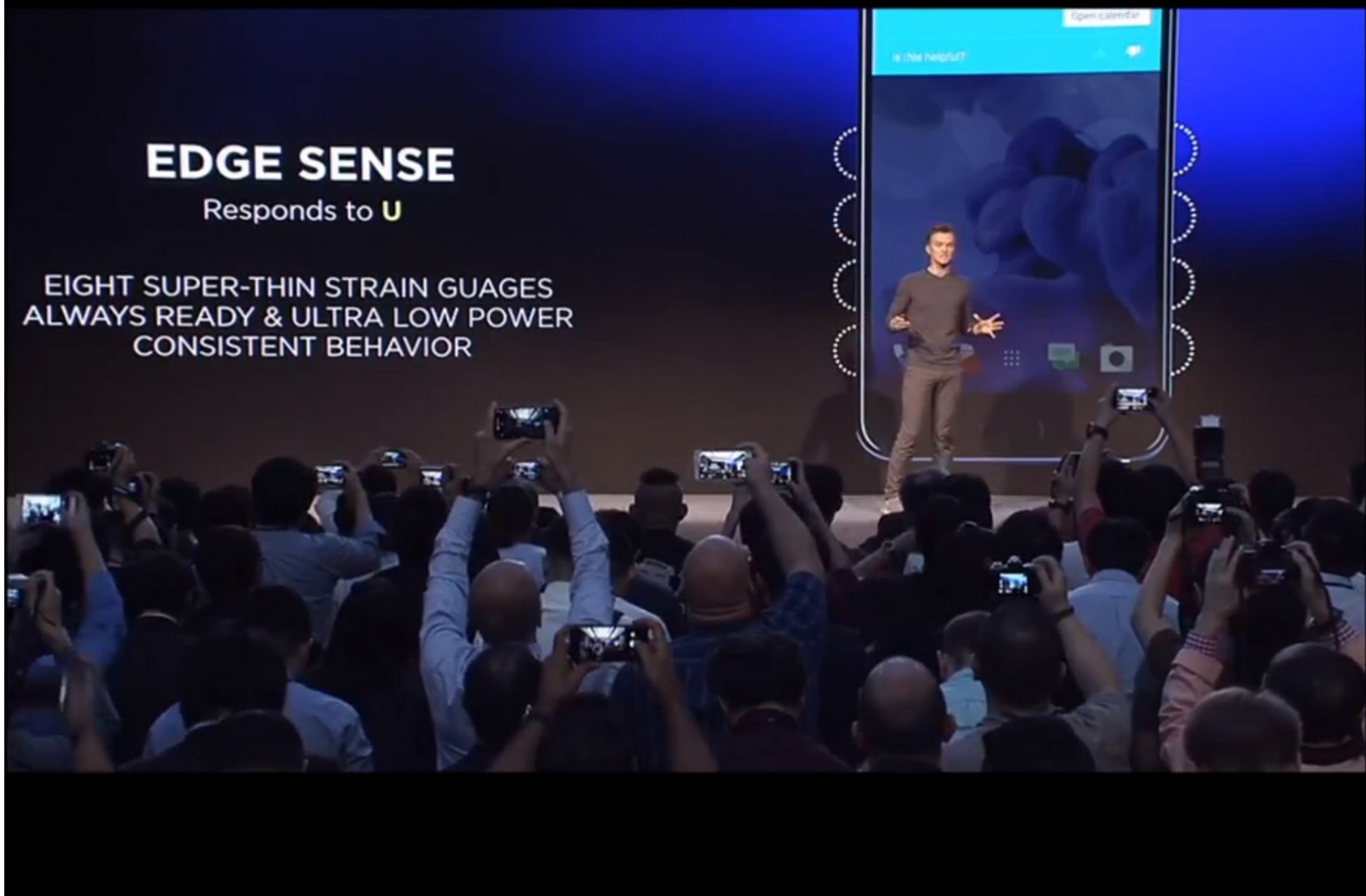
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EDGE SENSE

Responds to **U**

EIGHT SUPER-THIN STRAIN GUAGES
ALWAYS READY & ULTRA LOW POWER
CONSISTENT BEHAVIOR



INTRODUCTION

Since HTC U11 released, it has won lots of welcome comments, especially for its Edge Sense application.

Why is it so popular? And what exactly Edge Sense is?

Edge Sense has opened a new form of HMI, which is an intuitive action that is easy and convenient to get without learning cost. It was said on the release conference that Edge Sense is an Eight Super-Thin Strain Gauge. But what we want to see is how it looks like and how it works.

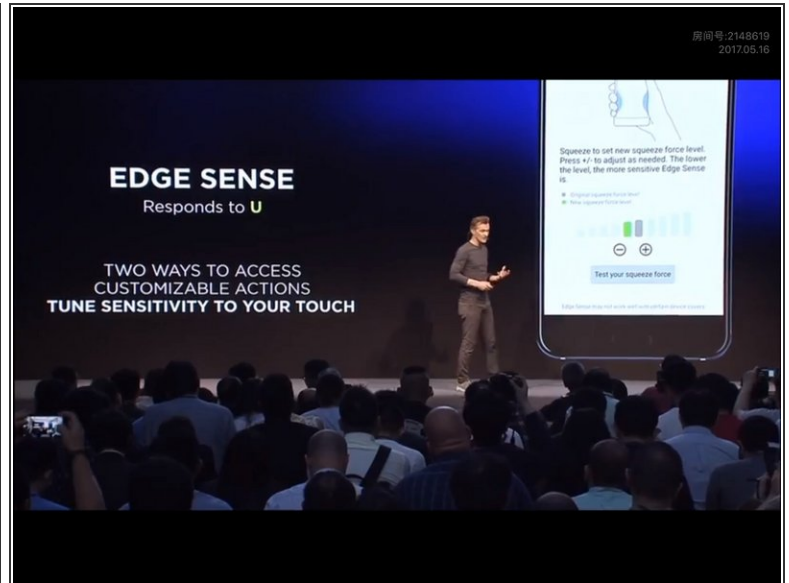
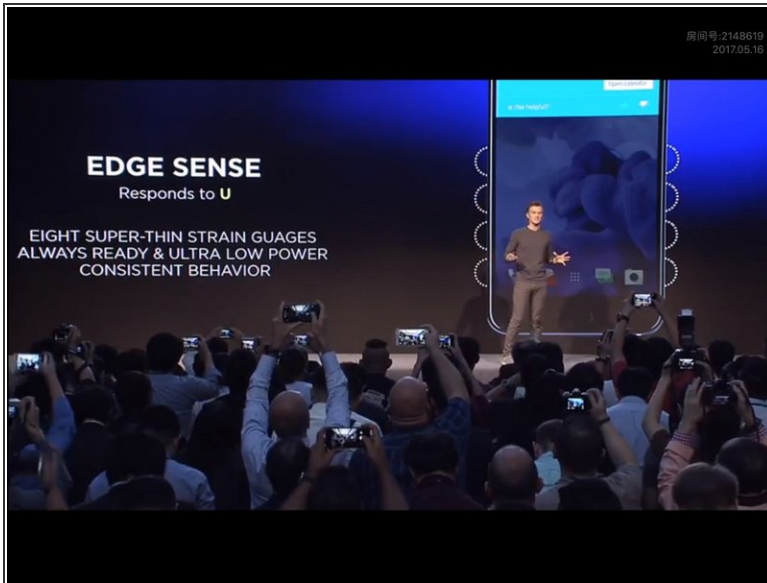
We will have a Teardown of HTC U11 to solve this puzzle.



TOOLS:

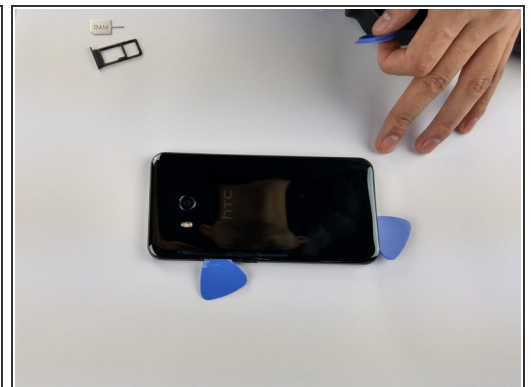
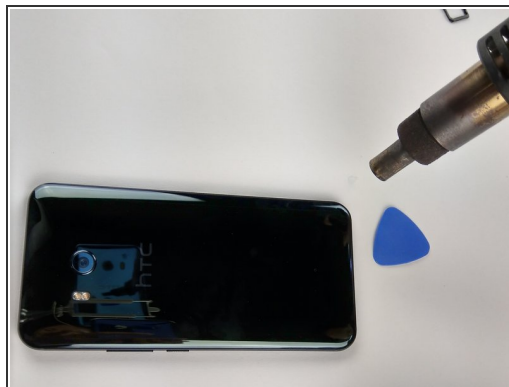
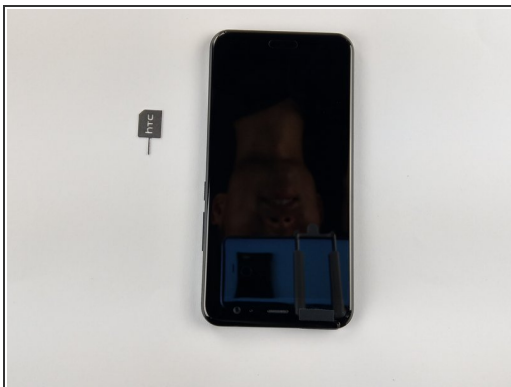
- [Heat Gun](#) (1)
 - [iFixit Opening Picks set of 6](#) (1)
 - [iFixit Opening Tools](#) (1)
 - [Mako Driver Kit - 64 Precision Bits](#) (1)
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Step 1 — Edge Sense on HTC U11 Release Conference



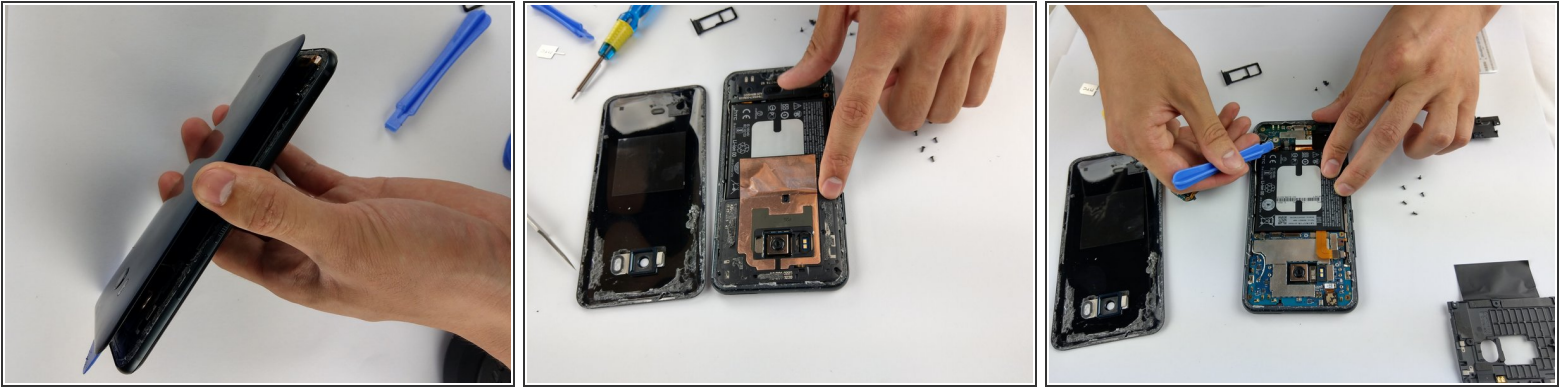
- Eight Strain Gauge, two ways to access

Step 2 — Teardown begins: Heat up the Frame for easier opening



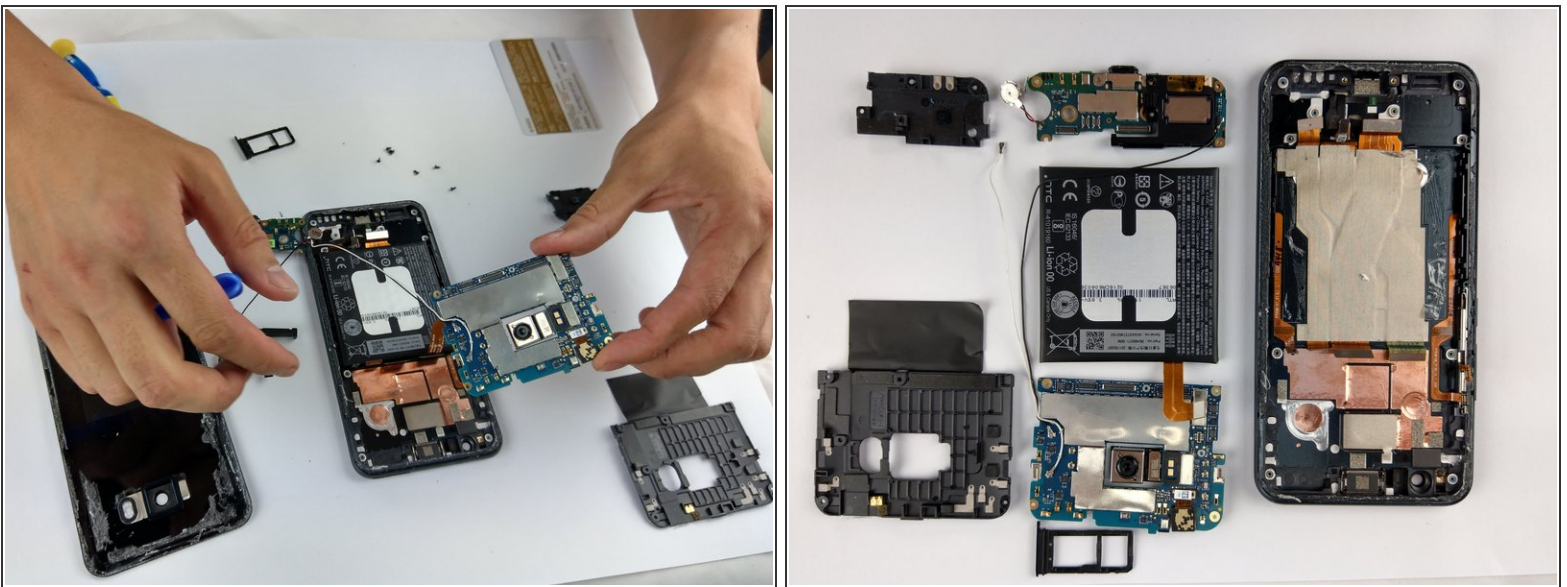
- First, for easier opening, we need to heat up the mobile frame. Please be aware of the glass cracks while heating and opening.

Step 3 — Opening



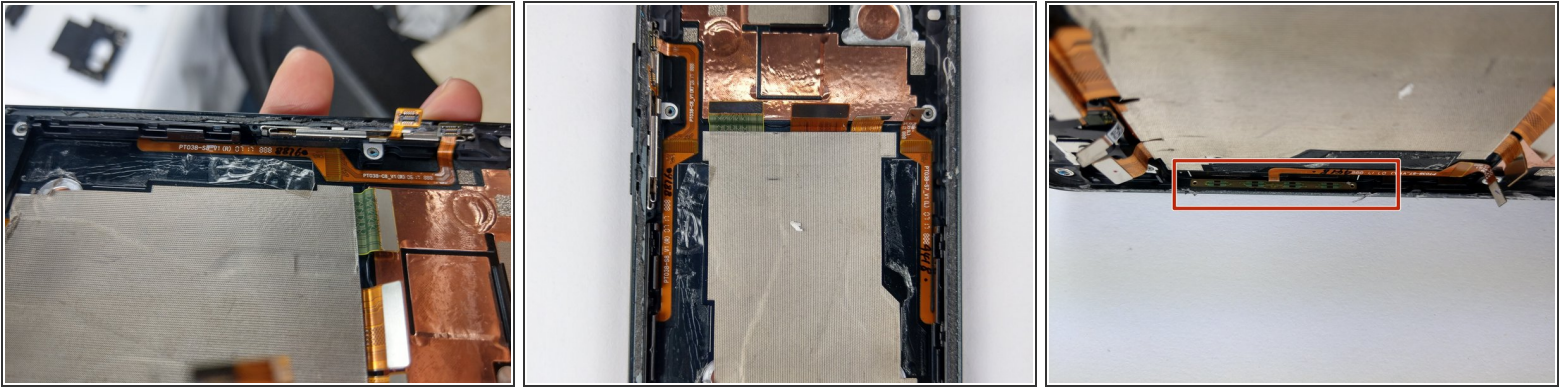
- We could see that there's more glue on its frame than other phones', this should be the reason why it can meet the requirement of IP67, to be used under water, such as taking photos while swimming or diving.

Step 4 — Inner Part



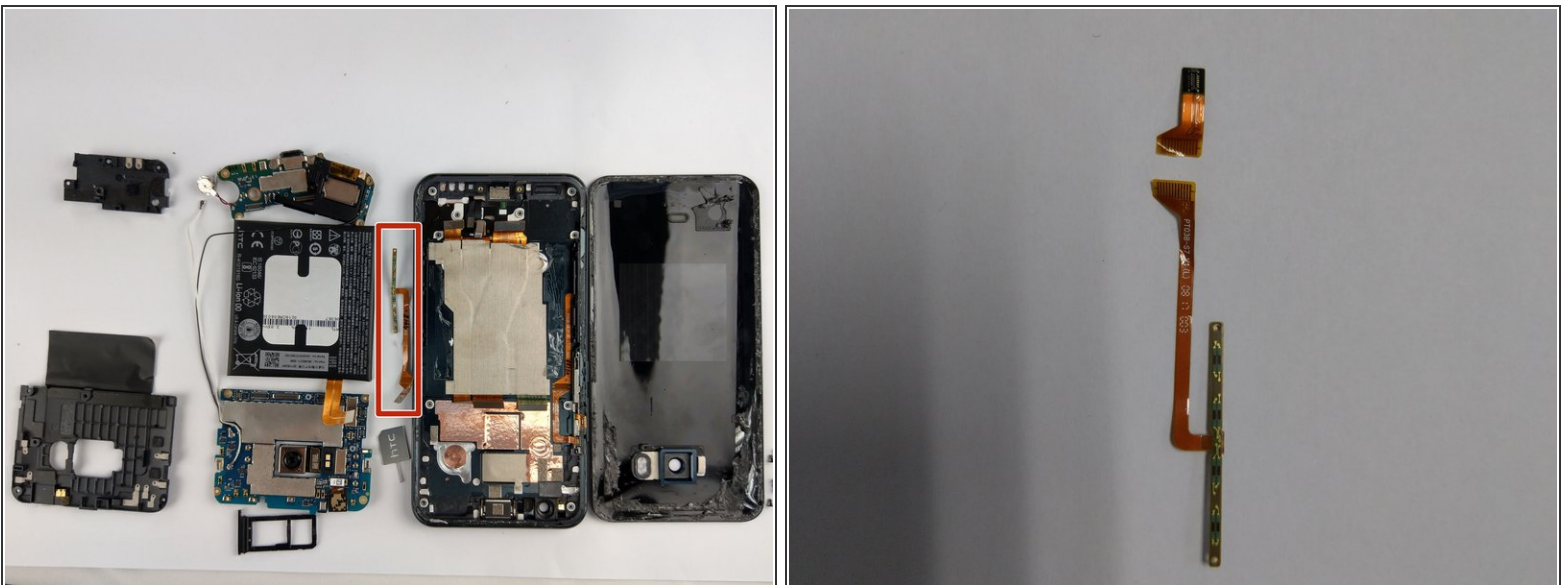
- Then we reach to the part Camera
- Finish the main part Teardown

Step 5 — Frame



- Here we head to the frame, it seems like there is a module on both sides of the frame

Step 6 — True Face of the Edge Sense



- A full Teardown
- A close-shot of the module
- As we could see the pictures showing that each side of the frame has a module (which we did not see on other mobile devices). It has thin structure but strong and stable signal.

Step 7 — Conclusion: What is Edge Sense, how does it realize?



- Based on the Teardown works above, we came to a conclusion, that is, Edge Sense is an "8 super-thin strain gauge" with 4 pairs of sensors on each module that separately installed on both sides of the U11 frame.
- These strain gauges are to detect the force changing while pressing, then the signals transmitted to the CPU of mobile devices for processing, and forming a signal output.
- It could recognize long press, short press and different level of pressure.

Step 8 — Highlight



- It is not by recognizing the contact of skin (or we can say not by recognizing the Capacitive sensing) while squeezing to activate this function, but by detecting the pressure of pressing to start it. Otherwise how can we initiate the Edge Sense functions underwater or when we are wearing gloves?