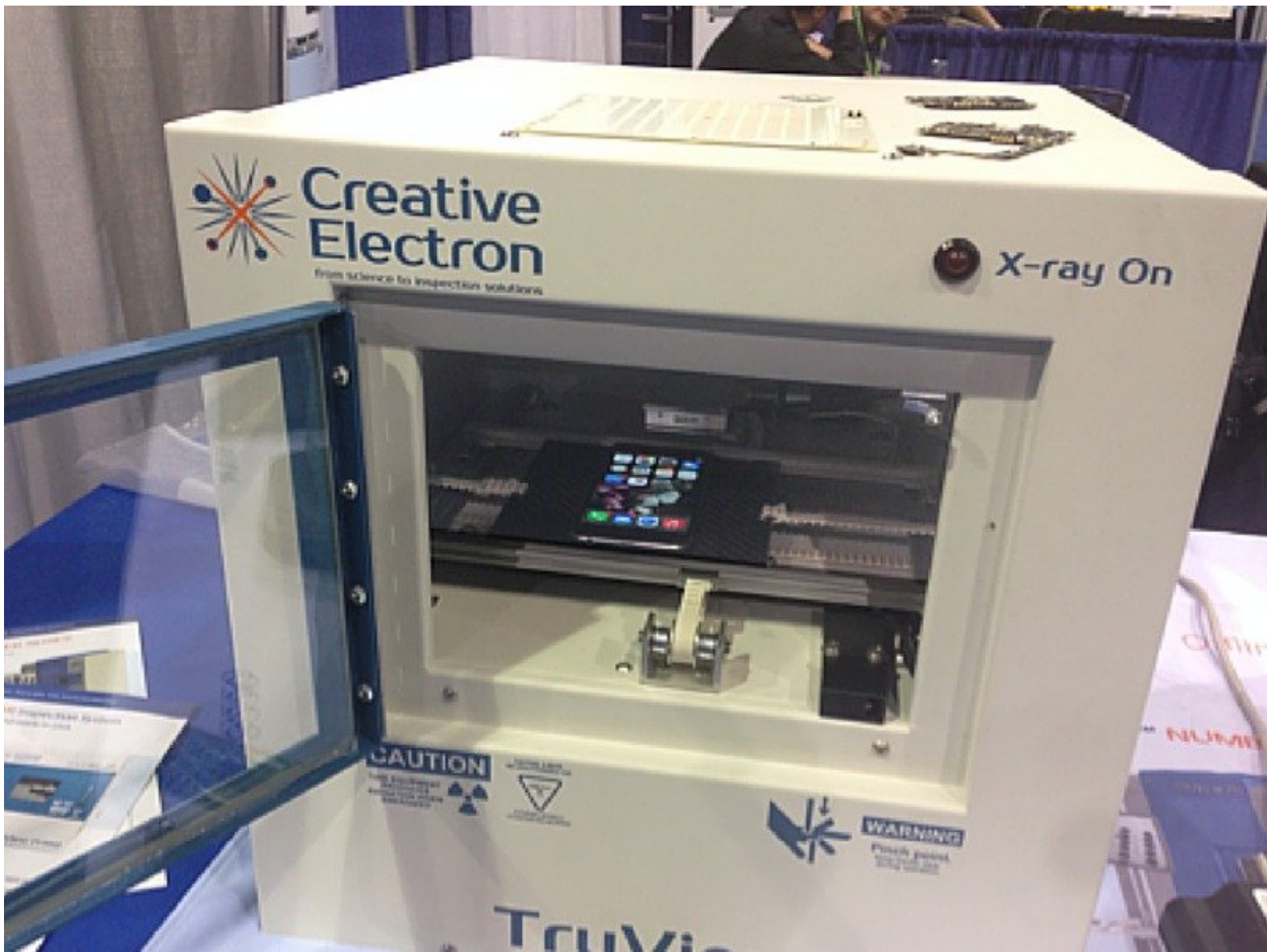




# Apple iPhone 6 Teardown by X-ray

Using a high resolution x-ray system, we did a complete teardown of an iPhone 6.

Written By: Christina Hall



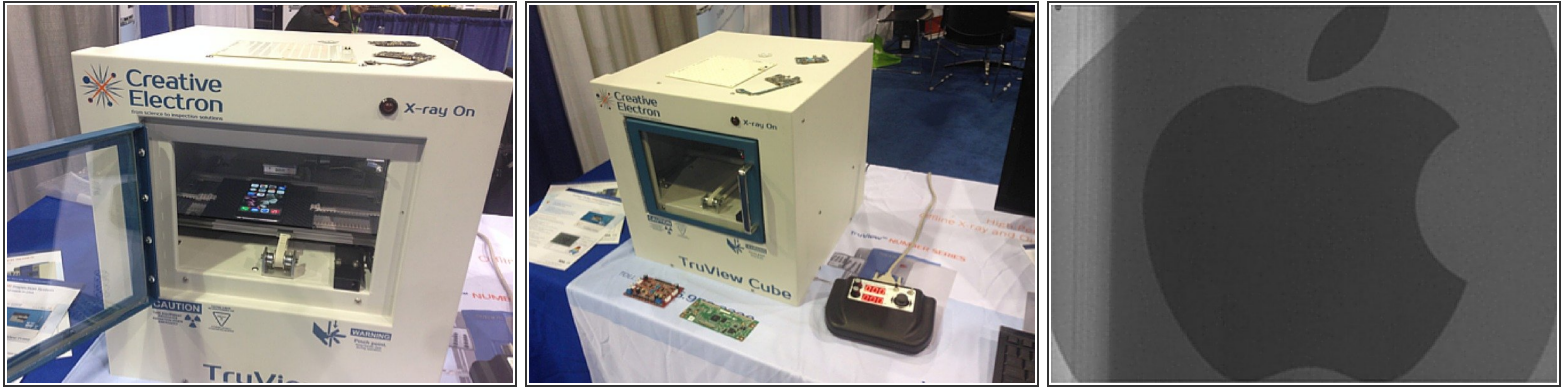
# INTRODUCTION

We've done teardowns of a wide range of smartphones, and I must confess, they don't look that different from each other. Not a lot changed from the iPhone 4S to the iPhone 5S. Even comparing to the Samsung Galaxy S5, not a lot of new things. The iPhone 6 was a different story. Quite a few new features we're going to show you here. But first, here are some specs of the new iPhone 6:

iPhone 6 tech specs:

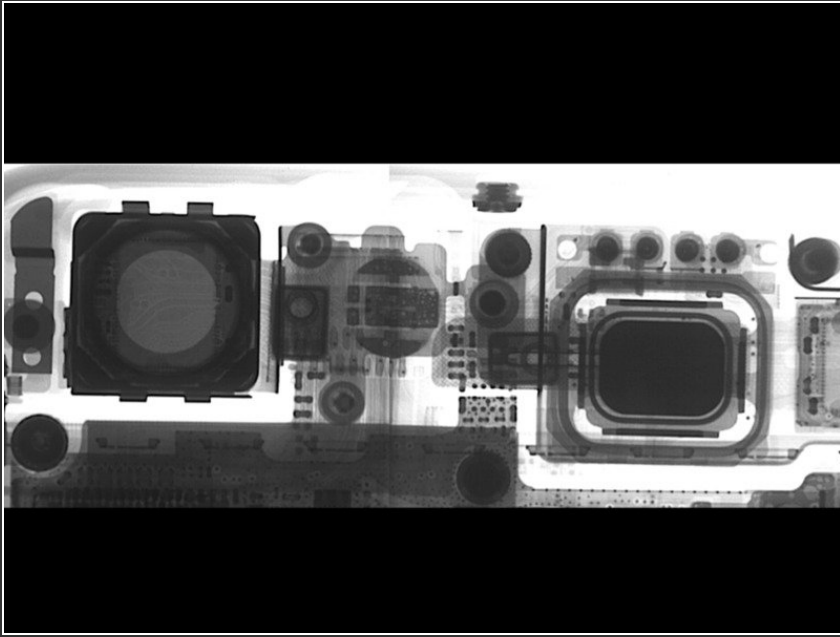
- Apple A8 processor with 64-bit architecture
- M8 second-generation motion coprocessor
- 16, 64, or 128 GB onboard storage capacity
- 4.7-inch 1334x750 pixels (326 ppi) Retina HD display
- 8 MP iSight camera (with 1.5 $\mu$  pixels and phase-detection autofocus) and a 1.2 MP FaceTime camera
- Touch ID home button fingerprint sensor, barometer, 3-axis gyro, accelerometer, ambient light sensor
- 802.11a/b/g/n/ac Wi-Fi + Bluetooth 4.0 + NFC + 20-band LTE

## Step 1 — Apple iPhone 6 Teardown by X-ray



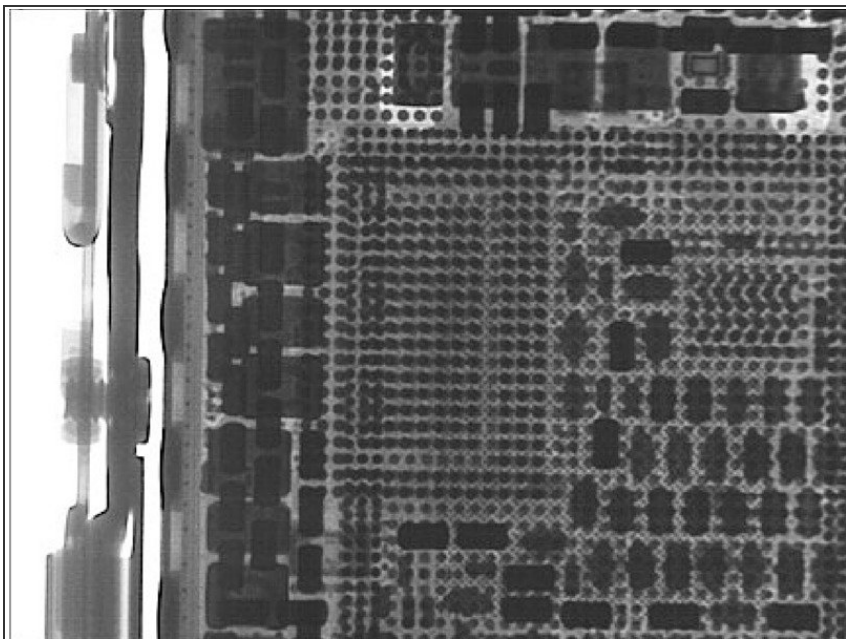
- Using the [TruView Cube X-ray](#) we start our scan.
- The first change we noticed was the Apple logo on the back of the phone. Unlike the subtle texture change of the previous models, the iPhone 6 houses a stainless steel logo that shows in our x-ray as clear as day.

## Step 2



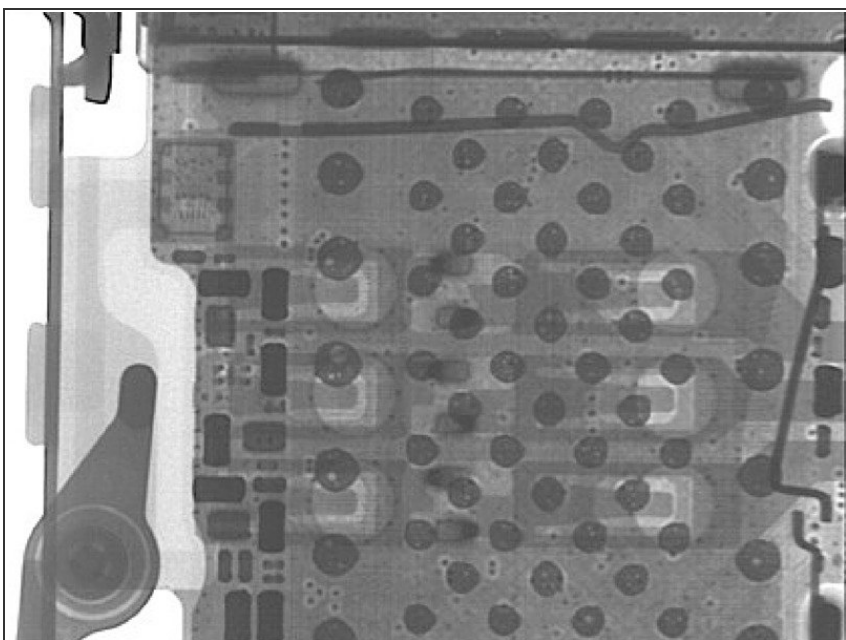
- Another great improvement of the iPhone 6 platform is the camera. Here's the x-ray image of the top of the iPhone 6 showing both the FaceTime (right) and iSight (left) cameras. You can also see the flash LED has been beefed up quite a bit.
- We also noticed the 2 MEMS microphones – one to the right of the iSight camera, the other to the left of the FaceTime camera. While the FaceTime microphone is likely used during conversation utilizing the FaceTime camera, the iSight microphone is used to reduce ambient noise from phone conversations.
- By collecting the voice signal and the ambient noise, a signal-processing algorithm can be used to reduce noise from the data (a.k.a. voice) channel.

## Step 3



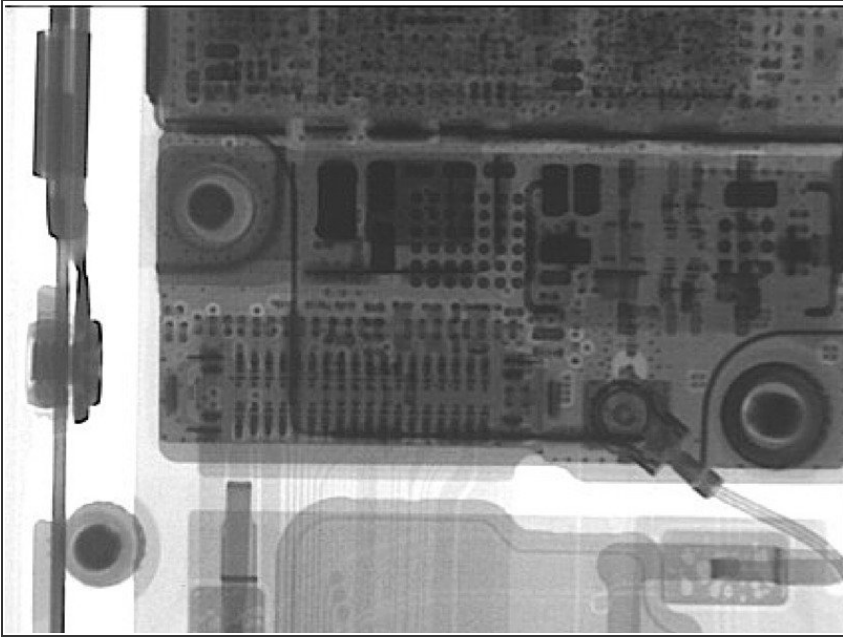
- This is a nice image to show you the complexity around the new A8 processor... a lot going on around Apple's new processor.

## Step 4



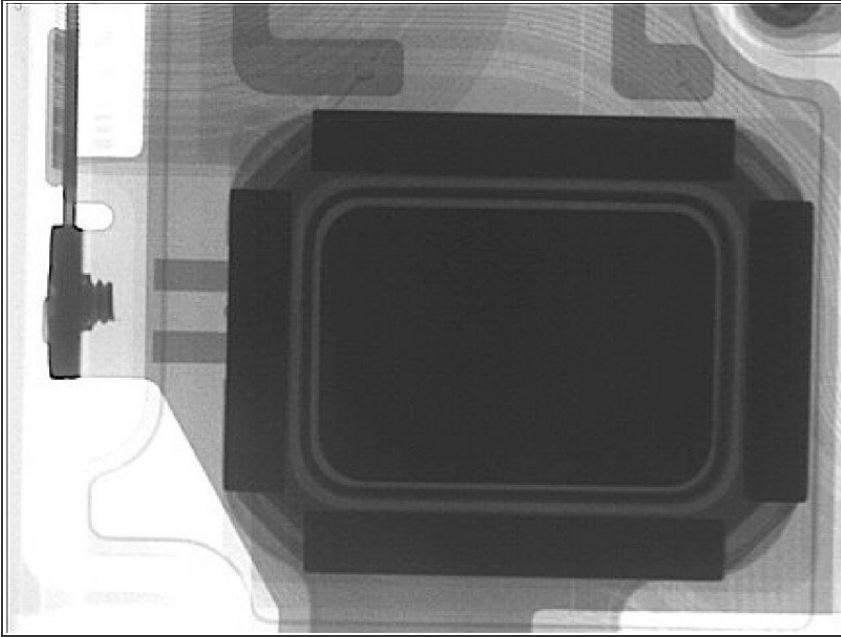
- The SIM card connector is well defined in the iPhone 6. Note the voiding in the solder balls of the connector.

## Step 5



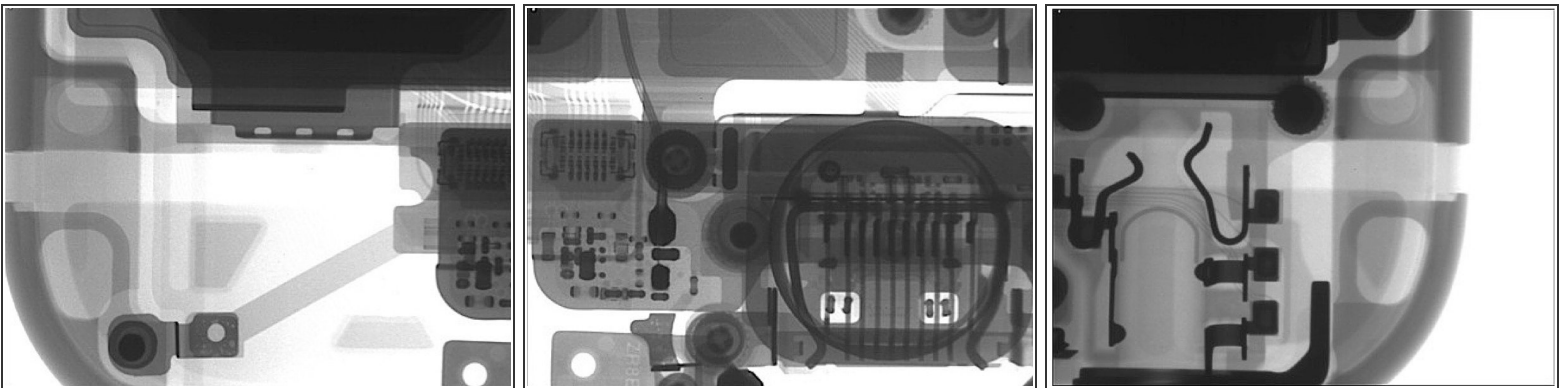
- Nice detail shot showing one of the many antennae connections in this iPhone.

## Step 6



- Although the speaker assembly channel assembly changed in the iPhone 6, it seems Apple is still using the same speaker as used in the iPhone 5S.

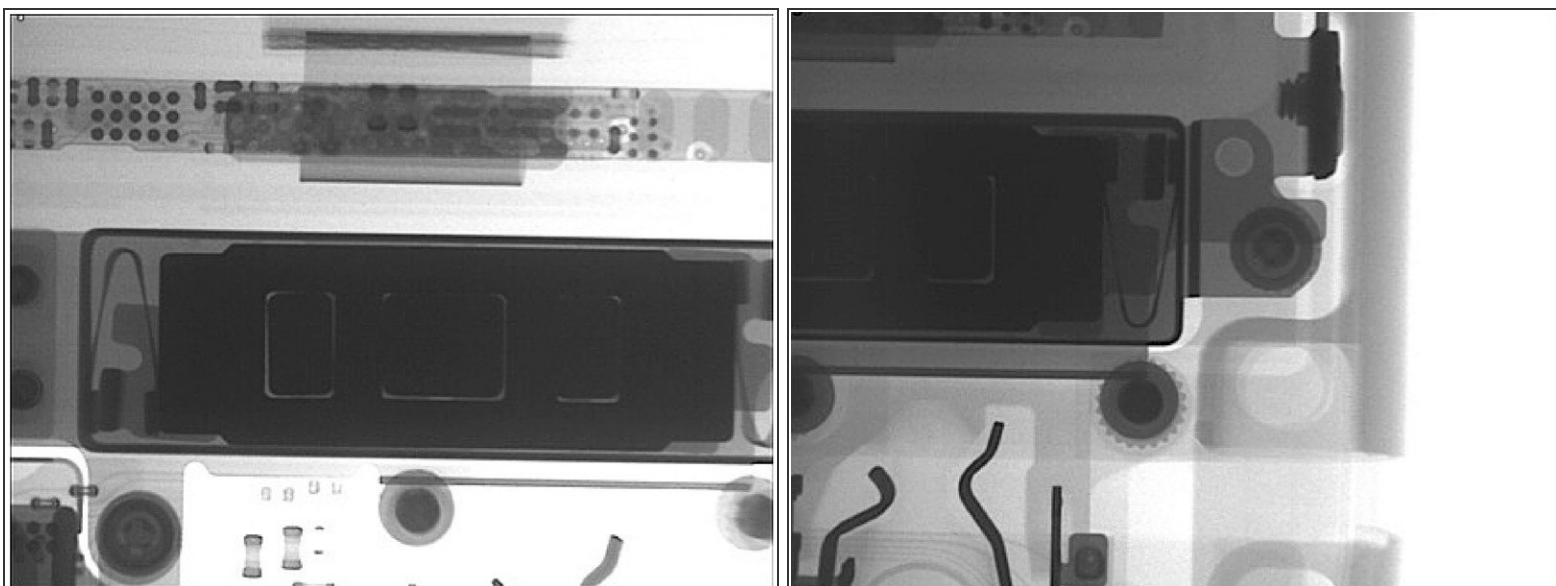
## Step 7



- The iPhone 6 has the antennae clearly separated in the design of its case. An aesthetic feature loved by some, hated by others. Here it is seen from the inside out, both left and right of the phone. Also seen here is the TouchID sensor and the Lighting data and power connector.



## Step 8



- It is well known Apple likes to play with the vibration motor in the iPhone products. The iPhone 4 used a counterweight design, the iPhone 4S a linear oscillator, the iPhone 5/5S went back to a counterweight design. For the iPhone 6 it seems we're back to the linear oscillator idea.

To reassemble your device, follow these instructions in reverse order.