

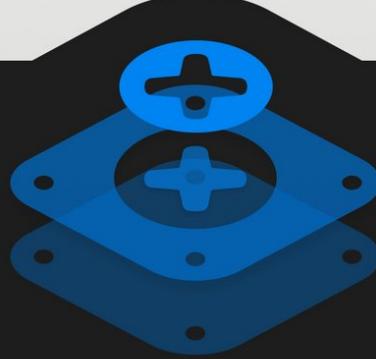


HTC One M9 Teardown

Teardown of the HTC One M9 on April 2, 2015.

Written By: Ron Davis

HTC
One M9



TEARDOWN

INTRODUCTION

It's officially spring, which means pastels, bunnies, and shiny new devices to eggsplore. HTC sprouted a *third* One, the M9, and we hopped right to a teardown. Join us as we crack open our pre-Easter treat, the HTC One M9.

Ready to spring into action? Follow us on [Instagram](#), like us on [Facebook](#), or listen to the birds tweet on [Twitter](#).

[video: https://www.youtube.com/watch?v=tb_ENgMkwPE]

TOOLS:

- [T5 Torx Screwdriver](#) (1)
- [Phillips #00 Screwdriver](#) (1)
- [iOpener](#) (1)
- [iFixit Opening Picks set of 6](#) (1)
- [Tweezers](#) (1)
- [Spudger](#) (1)

Step 1 — HTC One M9 Teardown



- HTC hopes the *M9* will be the *One* for you. Let's see just what it's packing:
 - 5.0-inch, 1920 x 1080 display, with front-facing stereo speakers
 - 20 MP rear-facing camera with 4K video recording; HTC UltraPixel front-facing camera with 1080p video recording
 - Qualcomm Snapdragon 810—64-bit, octa-core (4 x 2.0 GHz + 4 x 1.5 GHz)
 - 3 GB RAM
 - 32 GB of on-board storage; up to 2 TB additional microSD storage
 - LTE, Bluetooth 4.1, NFC, HDMI MHL 3.0, 802.11ac, and IR blaster

Step 2



- Did HTC secretly send us a Mac Mini? No, but it's definitely a uniquely designed box.
- HTC recently rolled out ["Uh-Oh Protection"](#) for One M8 and One M9, promising an entire replacement phone for a cracked screen or water damage in the first year of One-ship.
- *(i)* We're betting this deal has something to do with the [repair-unfriendly design](#) that these phones share.

Step 3



- HTC has been experiencing some [shipping delays](#) with the One M9, presumably due to a lack of stock.
- Coincidentally, our phone seems to have encountered more relaxed quality standards than is expected from HTC.
- Straight out of the box we noticed a large scratch on the bottom left corner of the display glass.
- And it doesn't stop there! When we first booted up the phone, we were greeted by a lovely [defective pixel](#) near the middle of the screen.

ⓘ These issues are giving us a [bad feeling about this](#) phone...

Step 4



- The dual-tone metal unibody of the M9 is practically identical to that of the M8. The gunmetal gray M9 is just a shade darker than its older sibling; otherwise, you might say these HTCs are twins! Well, almost...
- The M9's most noticeable difference from its [predecessor](#) is a return to a single rear camera, like the original [HTC One](#). Possibly HTC decided that competing with the [3DS dual camera](#) was a little beneath them.
- The M9's secondary metamorphosis was a migrational button shuffle.
 - With the iPhone 6 and 6 Plus, Apple learned that a top-mounted power button doesn't cut it for a hand-stretching phablet, and [moved its power switch to the side](#). Looks like HTC caught on and followed suit with the M9.
 - The M9 also replaces the rocker switch of yesteryear with dedicated volume +/- buttons.

Step 5



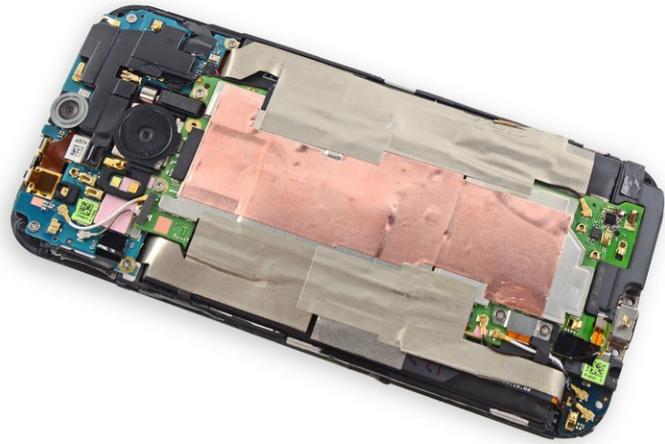
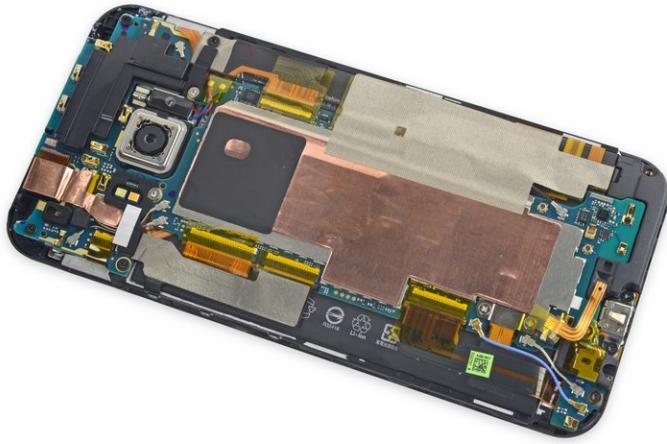
- Some persistent [picking](#) at the top of the case reveals a couple of Torx screws.
- Gone are the frontal access panels. The two screws at the top are all the M9 relies on, so far at least.
- [*i*](#) Maybe this One doesn't have the [Hermetically Tight Case](#) we were fearing.
- So far, so good. The [M8](#) came fastened with screws rather than [formidable adhesive and finicky clips](#), so let's hope the anti-adhesive trend continues...

Step 6



- Unlike the original HTC One, there's no need to ~~Heat The Case~~ of the M9. After removing the top panel's screws, we get straight to business with an opening pick to ~~Handle Those Clips~~.
- We use our trusty pick to ~~rent the phone in twain~~ carefully separate the rear case from the body of the phone.
- The bottom clips are particularly stubborn, but so far, no adhesive!
- As we pop the rear case of the M9, we get our first view of the tender morsels inside. At first glance, this new HTC One closely resembles the M8.

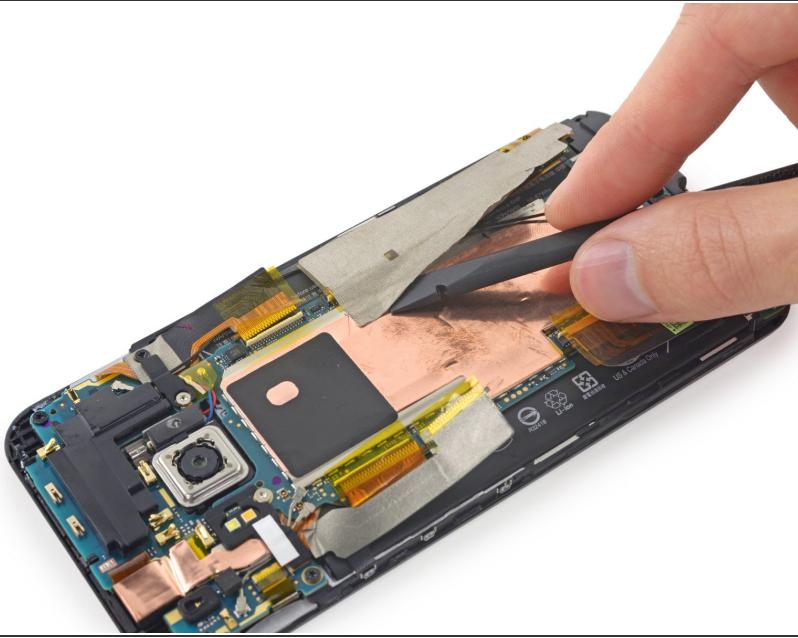
Step 7



- HTC clearly loves its shielding. We're thankful that they've abandoned the tape strata of the M8 (second image), for a slightly cleaner and more accessible design on the new M9 (first).
- Aside from the minor housekeeping and ditching the Duo Lens depth-perceiving camera, not much seems to have changed.

i Except for the color. The motherboard is now blue, which probably makes it run faster than last year's green.

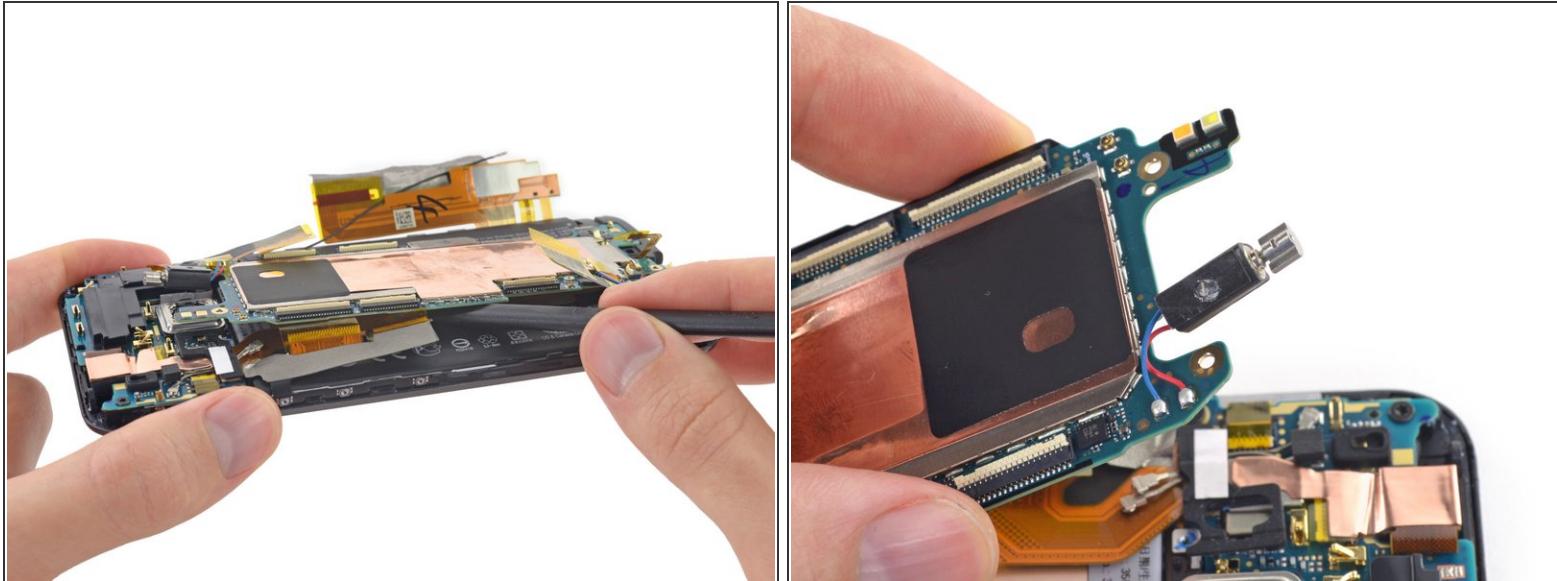
Step 8



- This HTC teardown is feeling a lot less like the [open heart surgery](#) we had to perform on the M8.
- Whoever went tape-happy last year has been duly pacified. While there are still plenty of connectors, they're easier to get to, and to dispatch.

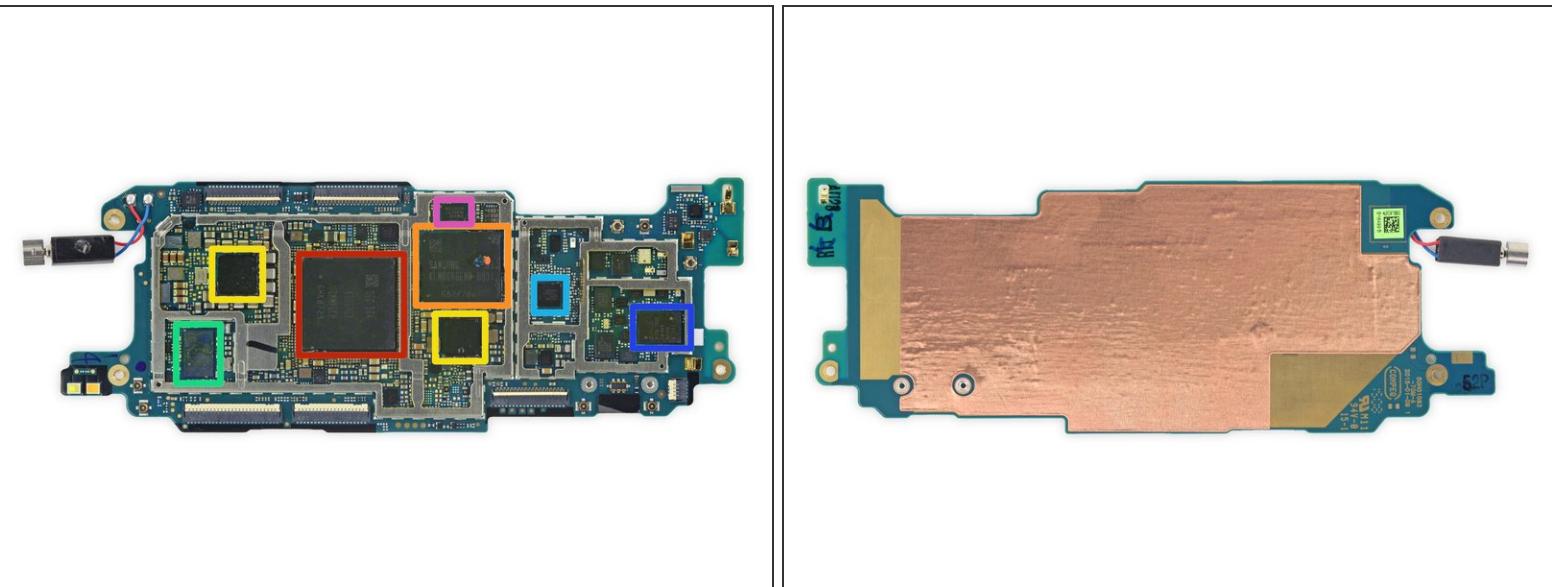
i Let's hope we don't jinx this motherboard removal...

Step 9



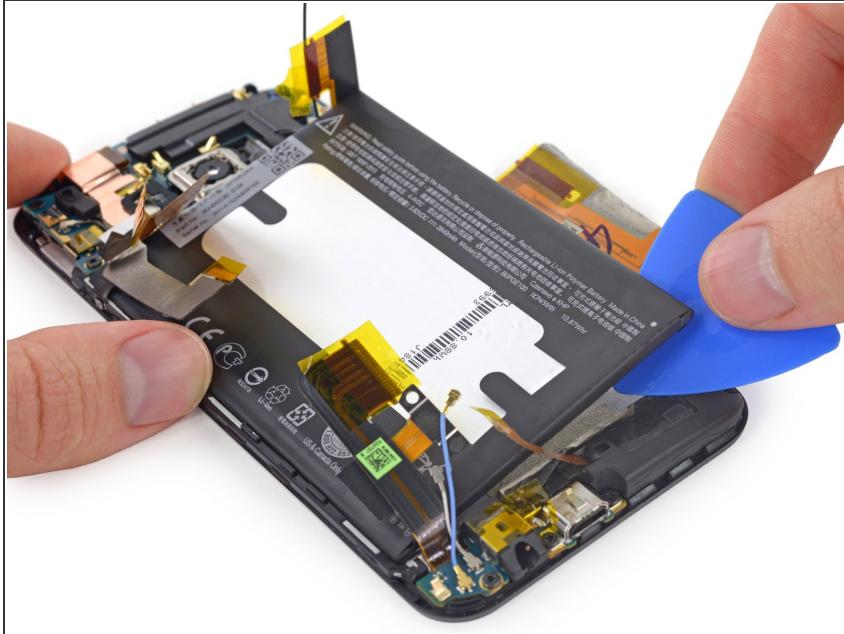
- Augh! What is this? Looks like HTC's engineers weren't interested in our input from the M8. They've stuck with their habit of [gluing down the motherboard](#).
- ⚠ Not only is the motherboard adhered, it's bang up against the battery—a "soft" battery.
- After some very gentle prying with a blunt spudger, we manage to free the motherboard and not catch fire.
- Phew!
- Oh and the rotational vibrator? Yeah, it's now soldered to the motherboard, and (lightly) adhered to the case.
- ⓘ [No more connector](#), and no more snug sleeve. Replacement just got a notch more involved.

Step 10



- Here're The Chips! Covered in what hopefully isn't snot (they came a little dirtier than we're [used to...](#))
 - Samsung [K3RG3G30MM-MGCH](#) 3 GB LPDDR4 RAM + Qualcomm [Snapdragon 810](#) octa-core CPU
 - Samsung [KLMBG4GEND-B031](#) 32 GB eMMC NAND flash
 - Qualcomm [PMI8994](#) Power Management IC
 - Broadcom [BCM4356](#) 2x2 802.11ac Wi-Fi solution with Bluetooth 4.1 support (Also found in the [Nexus 6](#))
 - Qualcomm [WTR3925](#) 28 nm RF transceiver
 - Avago ACPM-7800 multimode, multiband power amplifier module
 - Silicon Image [SIL8620](#) MHL 3.0 transmitter

Step 11



- Now that the motherboard is out, we can remove the (hopefully undamaged) battery! After some more prying, that is.
- Yep, the motherboard still has to come out before the battery. And the battery is *still* a glue sandwich —Hold The Cheese.
- We complained last year, and we Have To Complain again this year. A lithium-ion battery is a consumable —it's only good for a limited number of charge cycles before it starts to lose capacity and needs to be replaced.
- Burying the battery so deeply within the device signs its death certificate the day of its manufacturing birth.

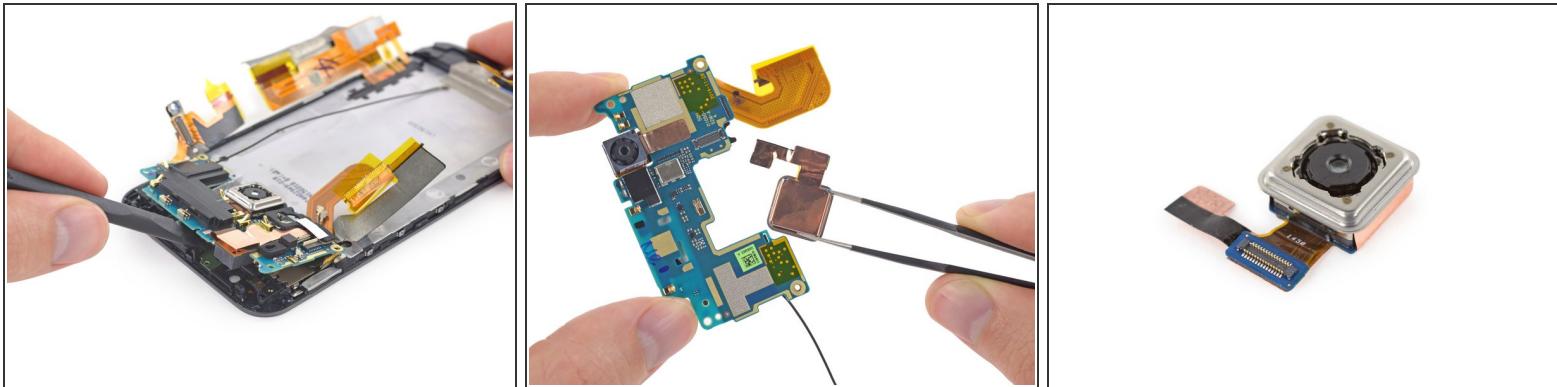
Step 12



- Spec-wise, HTC has once again given the battery a slight capacity boost—up to 10.87 Whr from [yesteryear's](#) 9.88, but still a little shy of the 11.1 Wh in the [iPhone 6 Plus](#). (The original One sported a measly 8.74 Whr battery.)
- [AnandTech's review](#) found the M9's battery life slightly disappointing compared to the M8. It seems HTC made an effort to stop the bleeding with a capacity bump, but it's ultimately not enough to surpass its predecessor.
- Add the fact that the M9 supports [Qualcomm's new Quick Charge 2.0](#) spec, but ships with a conventional 5 V, 1.5 A charger that can't provide the quick juice, and we're a little disappointed.

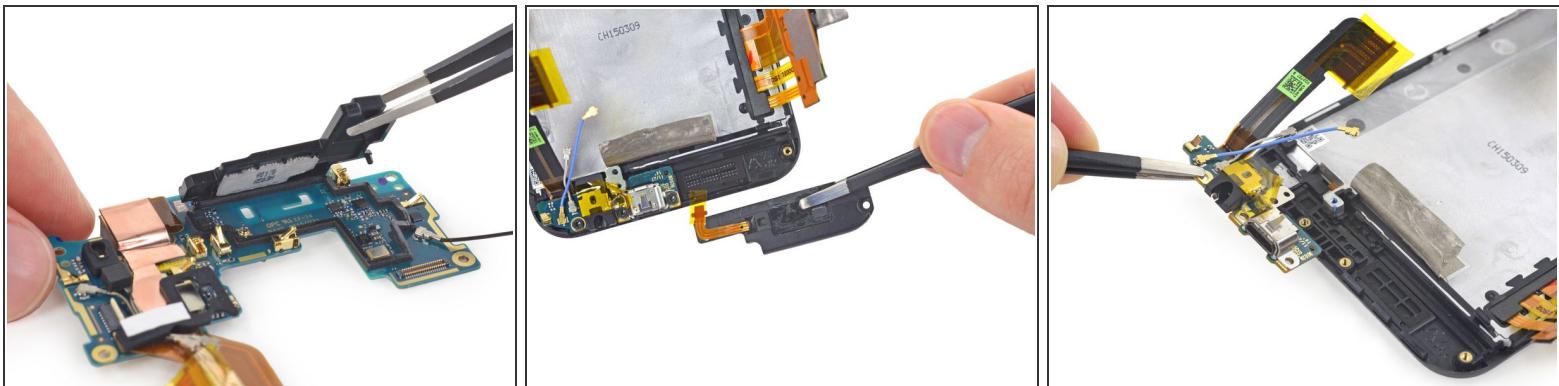
i Take note, HTC. The [Nexus 6](#) accepts Quick Charge *and* ships with a quick-charge compatible charger.

Step 13



- We want to get a look at the M9's [Highly Touted Camera](#). After one last connector, a few more screws, and some adhesive, the daughterboard is finally free.
- And with it, the newly single rear-facing camera.
 - You go, camera—you are a strong independent image capturing component that doesn't need any gimmicky 3D to define you.
- The M9's 20 MP rear camera sports a sapphire cover lens—possibly in response to [criticism](#) of an easily-scratched cover on the M8. HTC seemingly took a cue from [Apple](#) and introduced some camera bling.

Step 14



- Speaker box! Full of styrofoam! Such technology.
- HTC's BoomSound speakers make their encore performance in the M9. This new iteration of the BoomSound speakers sports Dolby Audio, bringing a full soundstage to your video chats with Nana.
- We tweeze out the I/O board, along with the attached 3.5 mm audio jack, microphone, and micro-USB port.

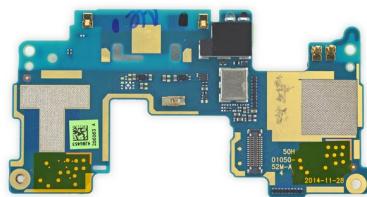
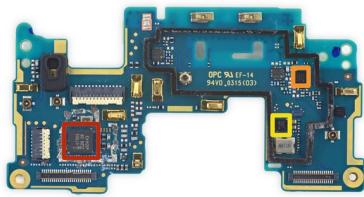
Step 15



- It's time to turn up the heat! Two particularly sticky strips of adhesive stood in our way, and it took a lot of careful heating and prying with the [iOpener](#) to free the LCD.
- We find numerous cryptic characters scrawled on the back of the LCD. Does this One have a secret message for us?
(i) After consulting our [Highly Trained Cryptologist](#), we've been informed that they're probably just quality assurance marks.

This document was generated on 2019-09-17 07:10:33 AM (MST).

Step 16



- The camera board is out of the phone and ready for its close-up. Here's what's chilling on the board:
 - NXP [47803](#) NFC controller, as seen in the [Amazon Fire Phone](#)
 - Qualcomm [QFE2550](#) antenna tuner
 - Maxim Integrated [MAXQ614](#) 16-bit microcontroller with infrared module
- It looks like HTC moved all their [Ultrapixels](#) to the display side—this 4 MP front-facing camera has the same specs as the M8's primary camera, but in a slightly smaller package.

Step 17



- Mounted to the display assembly ribbon cable, we see the Synaptics S3351B touchscreen controller.
- *(i)* This is likely an iteration of the S3350B found in the [Nexus 5](#).

Step 18



- HTC One M9 Repairability Score: **2 out of 10** (10 is easiest to repair)
 - The battery is buried beneath the motherboard and adhered to the midframe, hindering its replacement.
 - The display assembly cannot be replaced without tunneling through the entire phone. This makes one of most common repairs—a damaged screen—very difficult to accomplish.
 - Intense adhesives make many components difficult, and even dangerous, to remove and replace.
 - HTC thought they could Have Their Cake and eat it too, by making a flagship phone that's tough to repair. Sorry HTC, but this design Has To Change.
 - Design streamlining (upper access panel and reduced tape/shielding) makes for slightly easier access to some components.

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