



Motorola Droid 4 Teardown

The Droid 4 was taken apart on February 13th, 2012.

Written By: Walter Galan



INTRODUCTION

It's the dawn of a new year, and 2012 brings another update to the line of Droid smartphones by Motorola.

Will this be the best Droid to date? Will it fall completely on its face? Will it blend?

The only way to find out is to scroll down and check out the teardown. We didn't have a blender handy, so we'll have to wait until the good folks at [Blendtec](#) get their hands on a unit.

By the way: do these teardowns blow your mind, and you can't get enough of them? [Follow @ifixit](#) on Twitter to stay up to date with the latest teardown shenanigans.



TOOLS:

- [Metal Spudger](#) (1)
 - [iFixit Opening Tools](#) (1)
 - [Spudger](#) (1)
 - [T5 Torx Screwdriver](#) (1)
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Step 1 — Motorola Droid 4 Teardown



- Here's the Droid 4 in all its glory. It's a bit bigger, shinier, and packs more features than the original, but the essence of the Droid 1 is preserved.
- Tech specs:
 - Android 2.3.6 OS (Gingerbread)
 - Dual-Core 1.2 GHz processor with 1 GB dual-channel RAM processor
 - 16 GB internal storage and up to 32 GB microSD external storage
 - 4" 960 x 540 qHD display with Corning Gorilla Glass and a water-repellent nanocoating
 - 8 MP rear-facing camera with 1080P HD video capture and an "HD" front-facing camera

Step 2



- Motorola seems to have gifted us with some literature. Looking for a good read this afternoon? The Droid 4 comes with four different manuals!
- Motorola has also graced us with this mysterious little gem, which initially looks like a [SIM card eject tool](#) complete with the Motorola logo and high-tech ultra-light design.
- However, after scanning through the four included manuals (that's right, we do read the manuals), we discovered that the object is actually a rear panel removal tool! For the first time in the history of our teardowns, a device manufacturer has actually included a tool to help take apart their device -- although it's for a procedure that shouldn't require a tool to begin with.

Step 3



- The slide-out keyboard on the numerically-named Droids is often the biggest selling point on the phone, filling a niche market for users who prefer the kind of physical response that only a tactile keyboard can deliver. After all, how are you going to send secret texts from under the table unless you can feel the keys you're touching?
- The keyboard on the Droid 4 features the same offset key layout as the Droid 2 and the dedicated number row like the Droid 3.
- Unlike previous versions, the Droid 4's upper display assembly envelops the entire lower half of the phone -- there's no lower lip on the bottom half anymore.

Step 4



- With a little coaxing, the rear panel easily pops off. Chalk one up for repairability!
- In case you suddenly forget how to put the case back in, Motorola has graciously included instructions for reinstalling your rear panel.
- The first thing we observe on the innards of this Droid is a large sticker covering the battery. It contains identifying information for this phone, as well as several statements telling the user that the battery is not removable.
- [ORLY?](#) We'll see about that "non-removable" battery.
- This is a huge (negative) departure from earlier Droids, where the battery was always user-replaceable.

Step 5



- Before we tackle that dastardly sticker, we bust out a [spudger](#) to remove the micro-SIM cover.
- ⓘ You could also use your fingernail to accomplish the same task, but spudgers are more scientific.
- Alas! A liquid damage indicator cleverly placed below the micro-SIM cover thwarts our hopes of a Droid 4 deep-sea excursion. Sorry little buddy, looks like you're going to have to sit this one out.

Step 6



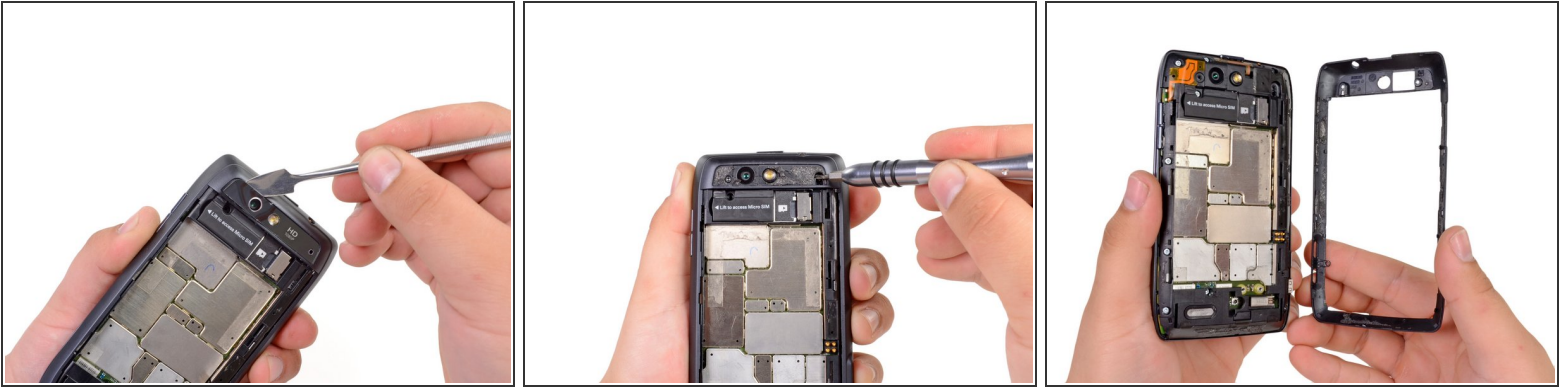
- Time to tackle the "non-removable battery" dilemma.
- Removing the sticker reveals the Droid 4's large battery.
 - Our assumptions are correct: the Droid's battery is a lot larger and more troublesome to remove than [last year's model](#).
- Did we say "more troublesome?" We meant to say "more exciting!" The addition of two T5 Torx screws holding the battery in place allows us to use one of our favorite tools, the [54-piece bit driver kit](#).

Step 7



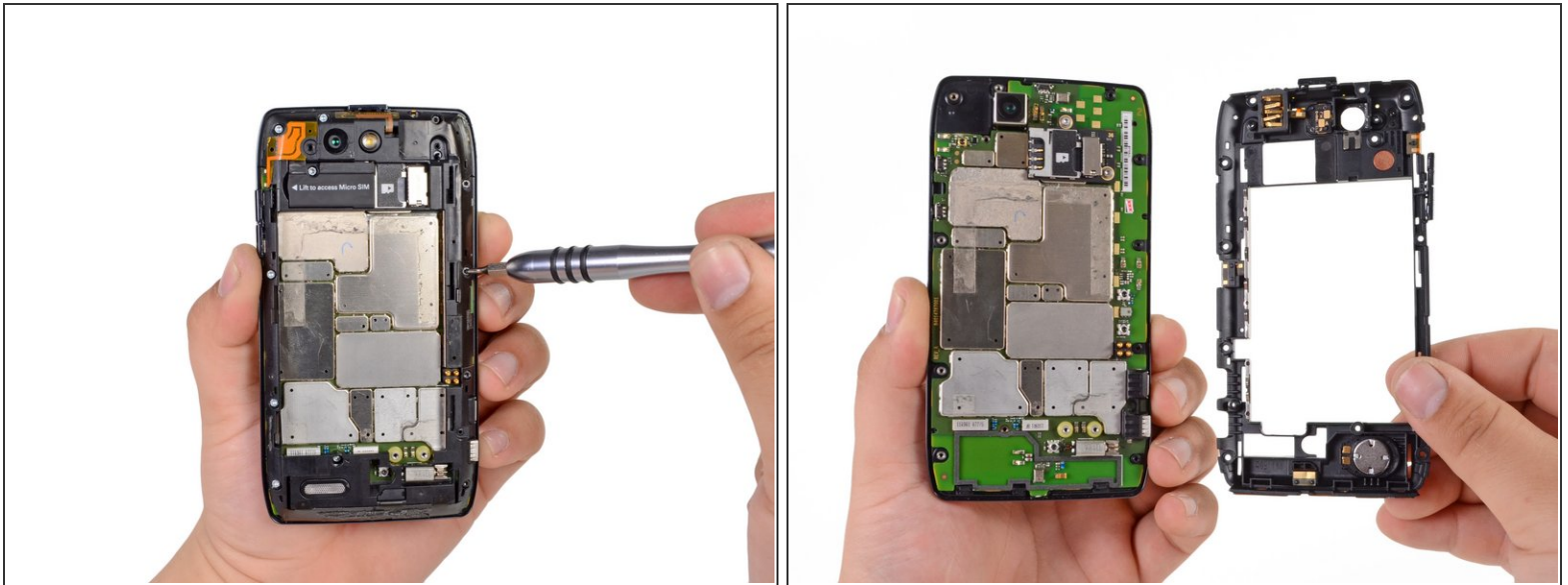
- The battery is held on by a wonderful surprise: Copious amounts of adhesive! ...grumble grumble...
- We don't get deterred by simple things like sticky batteries. The battery comes out without fuss after a little elbow grease and a spudger.
- ❗ It's actually pretty difficult to remove the battery without a pry tool like the spudger. The adhesive is so strong that you may accidentally bend the battery too much (and cause it to possibly ignite) if you try removing it with just your fingers.
- The Droid 4's 3.8 V Li-ion battery reports 1785 mAh, a 5 mAh upgrade over the [Droid RAZR](#), and a whopping 245 mAh upgrade over the [Droid 3](#).

Step 8



- And then we encountered a small stumbling block. With the battery out of the way, very little held the rear bezel in place -- yet it didn't want to come off.
- After what felt like years of poking, prodding, and prying the rear bezel, our spudgy-senses suddenly tingled when we looked at the plastic piece covering the battery and LED.
 - Sure enough, two screws were hiding underneath the cover. Sneaky!
- Removal of these screws proved to be the trick for freeing the rear bezel from its gluey prison.

Step 9



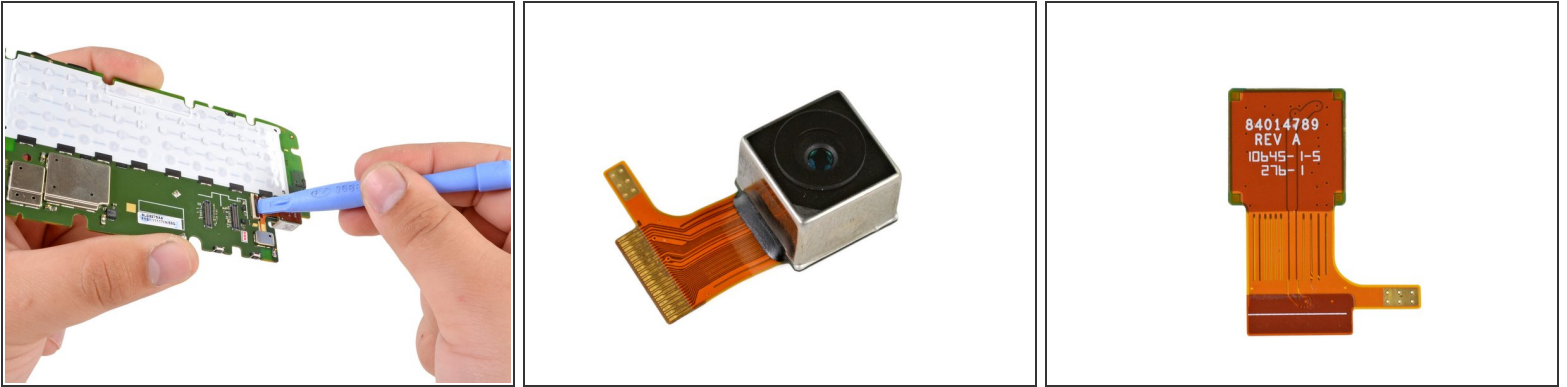
- Luckily, the plastic chassis holding the motherboard in place is held by nothing more than a handful of screws -- no more of that adhesive funny business.
- This plastic frame also houses the headphone jack, speaker, and LED flash.

Step 10



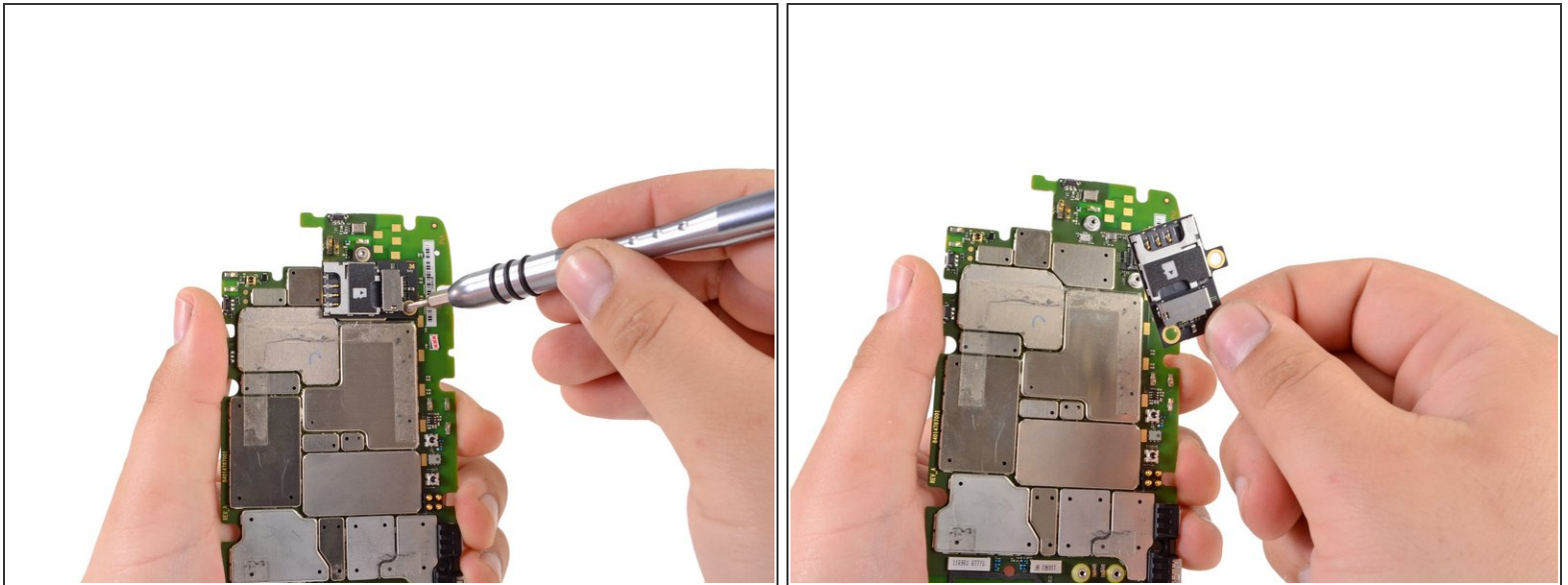
- With the rear chassis removed, we are free to begin taking out the motherboard.
- Our spudger makes quick history of the connectors holding the motherboard in place, and off it comes.
- [Unlike last year's Droid](#), the Droid 4's keyboard pressure sensors are attached to the back of the motherboard.
- ❗ Cool! The keyboard letters are printed on raised rubber atop the pressure contacts. Our guess is as good as yours as to why Motorola chose to go that route—there's no benefit we can see from having the letters printed on the rubber.

Step 11



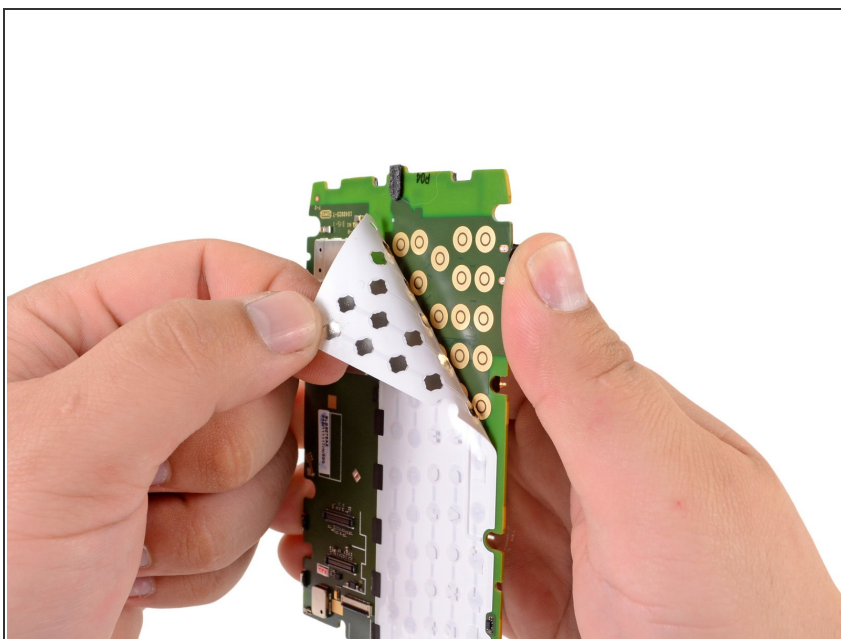
- Calling upon the help of our little friend, the [plastic opening tool](#), we remove the rear-facing camera.
- Like last year's [Droid RAZR](#)—and what seems to be the standard-issue in smartphones nowadays—the Droid 4 sports an 8 MP camera with 1080P video recording capabilities up to 30 frames per second.
- The back of the camera sports a cryptic code: 84014789. We can tell you with confidence that this is a Revision A camera unit, as opposed to any other letter.
- The side of the camera (not shown) reads SA2539 1XH00 0101650 7001 SH.

Step 12



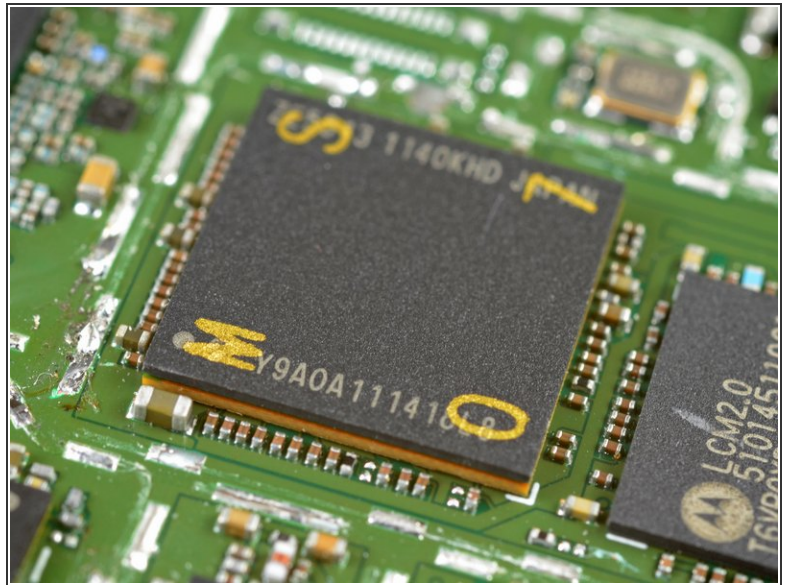
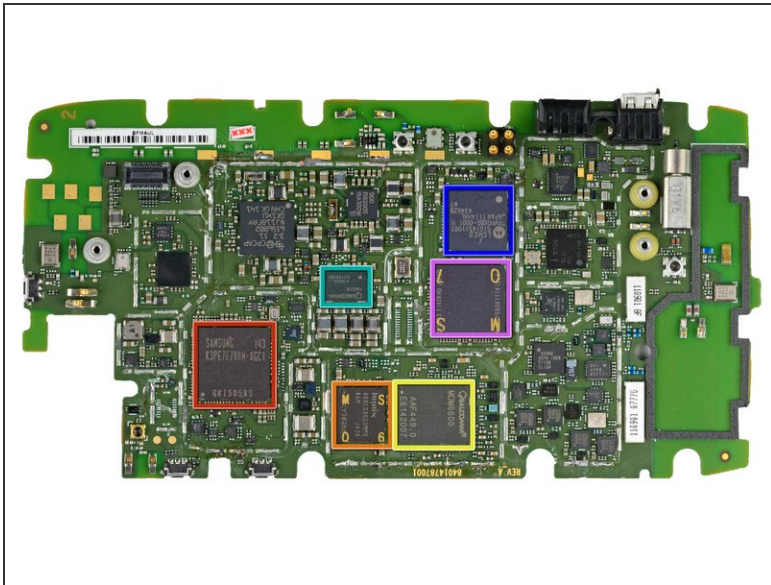
- Interesting: The microSD card slot is not soldered onto the motherboard, but instead held in place by two screws.
- The slot connects to the motherboard via some pressure-sensitive pins, as well as a rectangular multi-pin connector.

Step 13



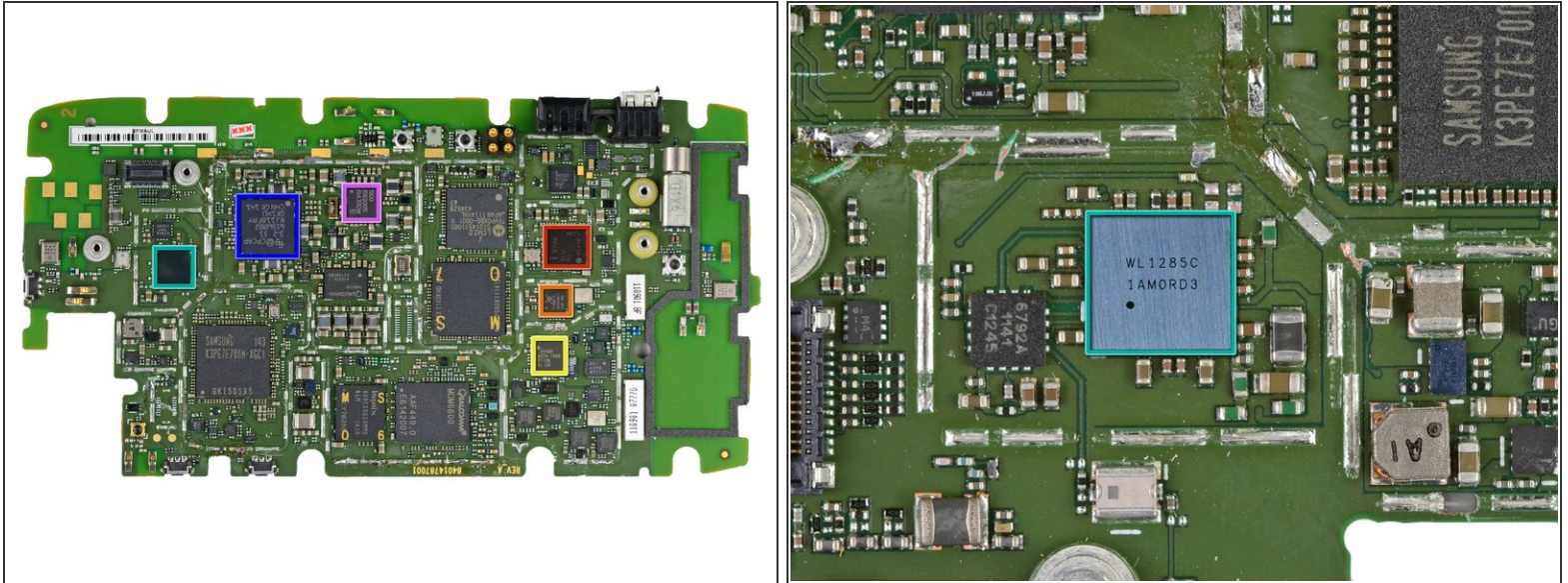
- Peeling back the rubber keyboard to reveal the keypad contacts.
- Motorola definitely understood the importance of designing a good keyboard for this phone. From our limited txt-testing, it appears to be the best Droid keyboard yet. The same shows in its internal construction.

Step 14



- Time for our favorite part, chip identification!
 - Samsung [K3PE7E00M-XGC1](#) 8 Gb LPDDR2.
 - Hynix H8BCS0QG0MMR memory MCP containing Hynix DRAM and STM flash
 - Qualcomm [MDM6600](#) supporting HSPA+ speeds of up to 14.4 Mbps
 - The Qualcomm PM8028 chip works in conjunction with the Qualcomm MDM6600 to provide wireless data connection to the phone.
 - Motorola [T6VP0XBG-0001](#) LCM 2.0 LTE baseband processor.
 - ZE55431140KHD, which appears to be the RAM sitting atop the main processor.
 - How do we know the processor is lurking beneath? Check out the chip package-on-package goodness in the second image. The processor is the orange chip beneath the RAM.

Step 15



- Infineon 5726 SLU A1.
- Skyworks [77483](#) 700MHz LTE PA module.
- Avago [ACPM-7868](#) quad-band power amplifier.
- Texas Instruments [WL 1285C](#) WiLink 7.0 single-chip WLAN, GPS, Bluetooth and FM solution
- ST Ericsson CPCAP 6556002 System on a Chip
- 5100 1582005 19A35DW

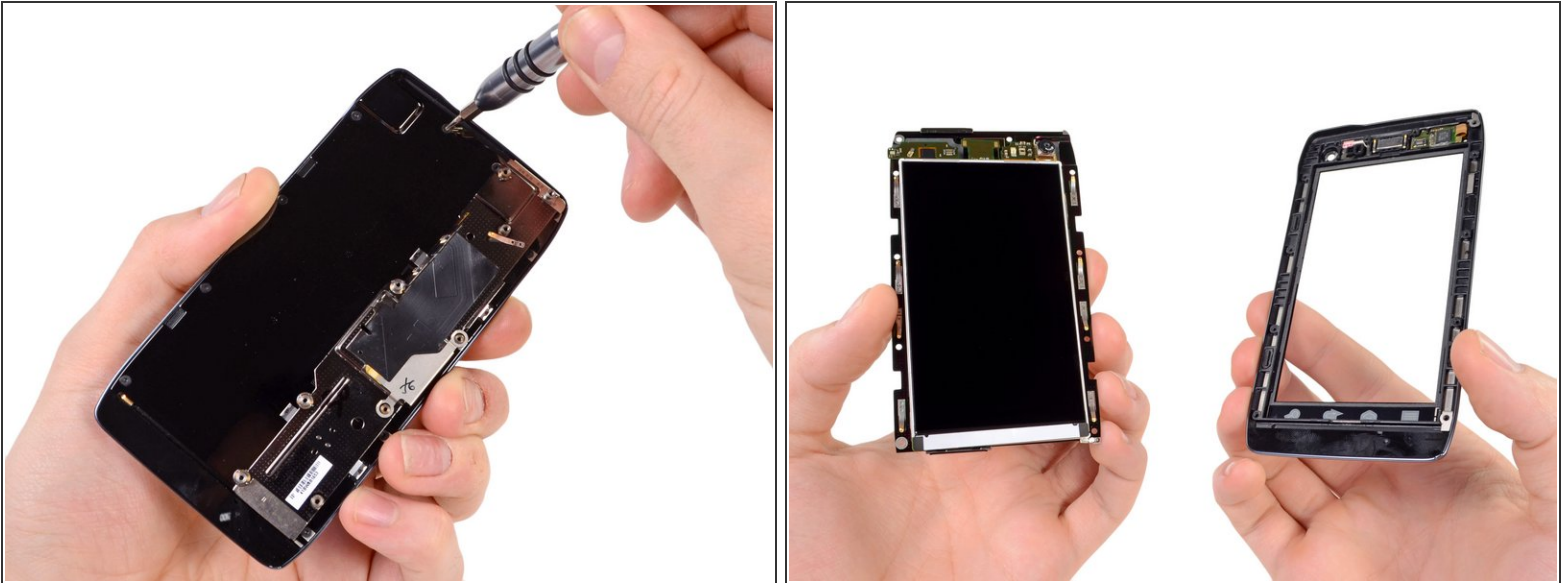
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Step 17



- Moving on, we delve deeper into the Droid to access its display.
- In order to complete this feat we have to remove some Torx screws and separate the keyboard top from the rest of the phone.

Step 18



- A couple more screws and the front panel is off!
- Good news: the LCD is not fused to the glass display. This means users won't have to purchase both the glass and LCD (which is significantly more expensive than just the glass) if they shatter their screens.
- Not-so-good news: they will have to replace the touchscreen controller when replacing the front display glass, which will add a bit of cost to the repair.

Step 19



- But what touchscreen controller does the Droid 4 sport, you may ask? The underside of the front panel reveals an [Atmel MXT224E](#) touchscreen controller, which we've found in several other phones in the past, including the Droid 3.

Step 20



REPAIRABILITY SCORE:



- The Motorola Droid 4 earns itself a not-so-stellar repairability score of **4 out of 10**.
 - The lack of security or proprietary screws is a welcome sight.
 - The LCD is not fused to the glass, which will save money to anyone who is unfortunate enough to drop their Droid.
 - The battery *is* user removable, but a significant amount of effort is required compared to earlier Droids.
 - Keyboard contacts are located on the motherboard, making keyboard replacement costly and difficult.
 - Tons of glue adheres the glue that is securing the glue to the glue that holds the phone together.
 - You have to take apart the entire phone to get to the front glass (which is most susceptible to fracture), and you'll have to replace the touchscreen controller in addition to the glass when performing the repair.

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