



# Motorola Droid Bionic Teardown

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## INTRODUCTION

The Motorola Droid Bionic is the first dual-core smartphone operating on Verizon's 4G LTE network. Join us as we take a peek inside this behemoth of a phone.

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### TOOLS:

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



- After nearly 8 months since its revealing at CES 2011, the Droid Bionic is finally here! And it's packing some serious hardware:
  - 1 GHz Texas Instruments Dual-Core Processor
  - 32 GB storage capacity (16 GB internal, 16 GB external)
  - 1 GB RAM
  - 4.3" qHD Display with Corning Gorilla Glass
  - 8 MP (1080p HD) Rear-Facing Camera
  - Verizon 4G LTE Network Capability

## Step 2



- The Bionic features two ports on its left side:
  - micro-USB
  - micro-HDMI
- Verizon advertises the Bionic as the slimmest 4G LTE phone at 0.43 inches thick.
  - ⓘ We find that the little hump towards the top of the device actually adds to the advertised 0.43" thickness (or thin-ness), making the phone 0.52" at its fattest point.
- In comparison to the [Motorola Droid](#), the Bionic is definitely thinner and lighter (158 to 169 grams), but also longer and wider.
- The top side of the Bionic is adorned by the headphone jack and the power button.

## Step 3



- The Droid Bionic turns around to give us a peek at its logo-filled back side, including the long-awaited 4G LTE logo.
- Our eager hands cannot wait to get inside this behemoth bionic-being as we remove the back cover with relative ease. An opening tool comes in handy here, but you can also use your fingers.
- Our first look inside the Bionic gives us a view of the 16 GB microSD card, the 4G LTE SIM card, and the Li-Ion 1735 mAh battery.

## Step 4



- To our pleasure as DIY-ers, the battery is easily removable and therefore replaceable.
- The Bionic's battery boasts nearly 11 hours of continuous talk time and over 240 hours of standby time.
- 240 hours on standby happens to be the perfect amount of time for respectfully silencing your cellphone and refraining from texting or talking during the showing of [Modern Times Forever](#).

## Step 5



- Next, we enjoy the pleasure of removing the 16 GB microSD card generously included with the purchase of a Motorola Droid Bionic.
  - ⚠ **CAUTION:** Keep this card away from small children and hungry adults. It's easily swallowed, but contains nothing of value to our digestive systems.
- The Bionic comes with 16 GB internal flash memory and a 16 GB microSD card (with the option to swap in a 32 GB microSD) for a grand total of 32 GB of included storage, or 48 GB expanded storage.



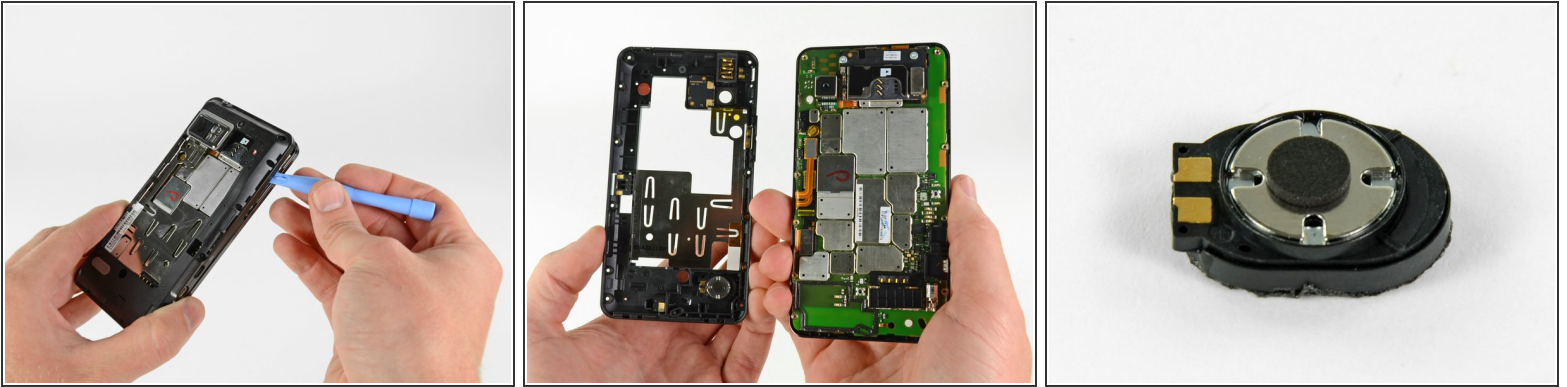
## Step 6



- We've found the elusive 4G LTE SIM card! Hidden beneath the microSD card, the 4G LTE SIM card sits... and waits.
- The Verizon LTE network sure is impressive, but high costs of tiered data plans have left many folks wondering if the price of the service is worth the hype.

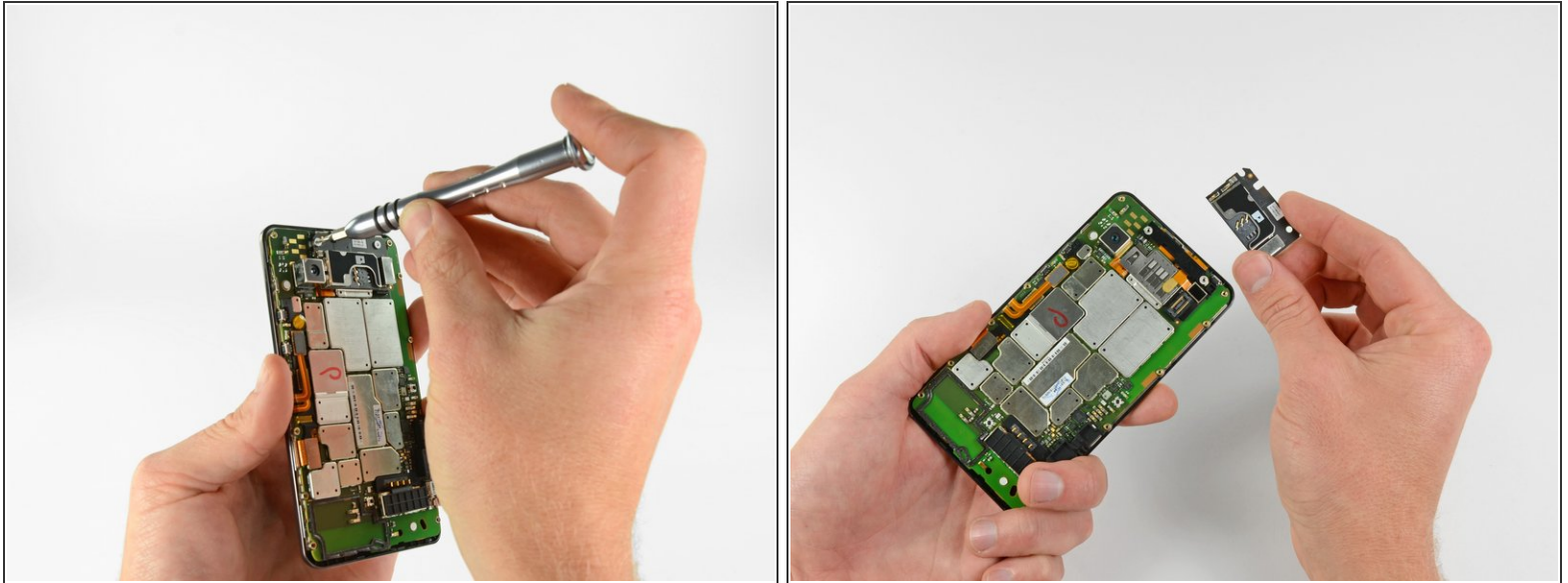


## Step 7



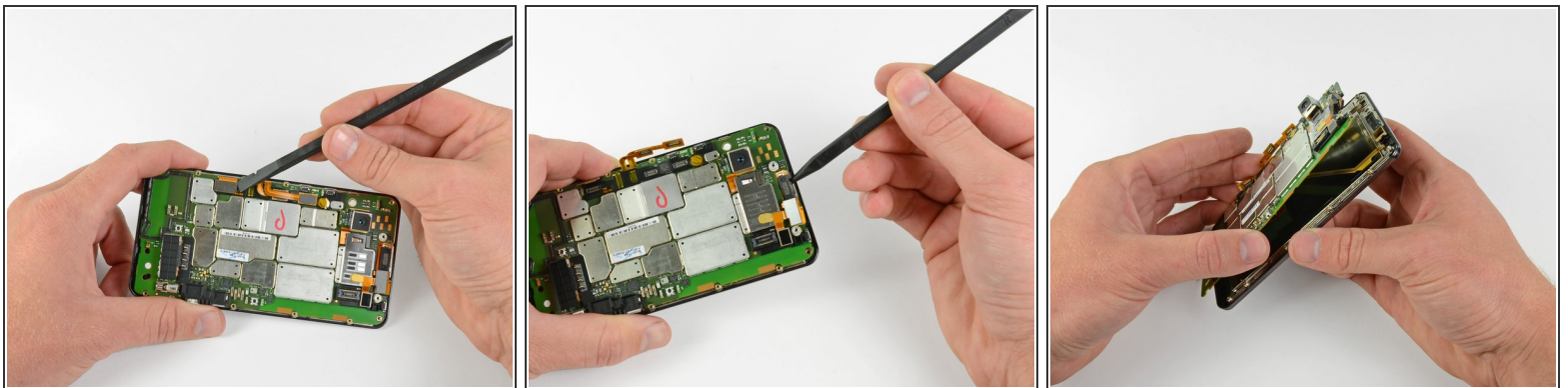
- A sticker, some clips, and a few—ahem, ELEVEN—screws around the perimeter of the Bionic are all that prevent us from peeking inside.
- Stickers have [never stopped us before](#) and a few T5 Torx screws or metal clips are no match for our 54-piece bit driver kits, plastic opening tools, and nimble fingertips.
- We remove the rear case and are instantly greeted by a forest of EMI shields.
- We remove the loudspeaker from the otherwise unexciting rear case, a speaker ideal for proclaiming the characteristic *Droooooooooiiiiid* upon powering on the phone.

## Step 8



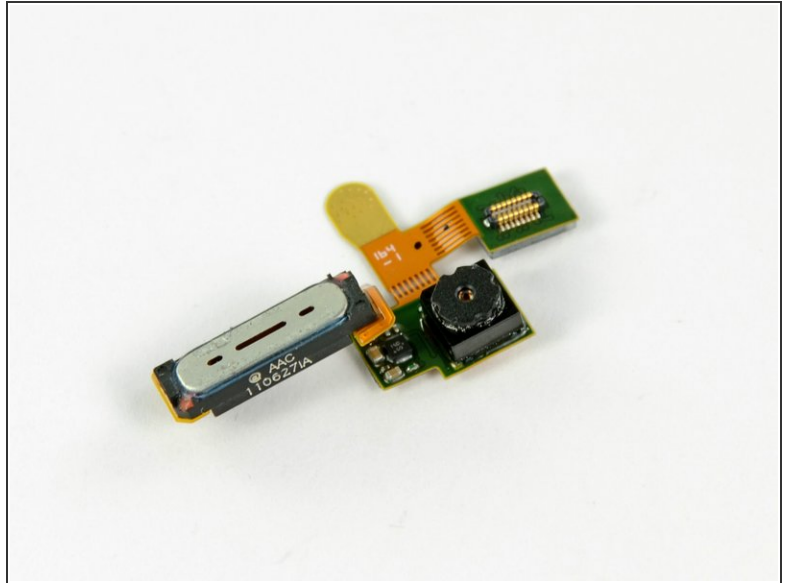
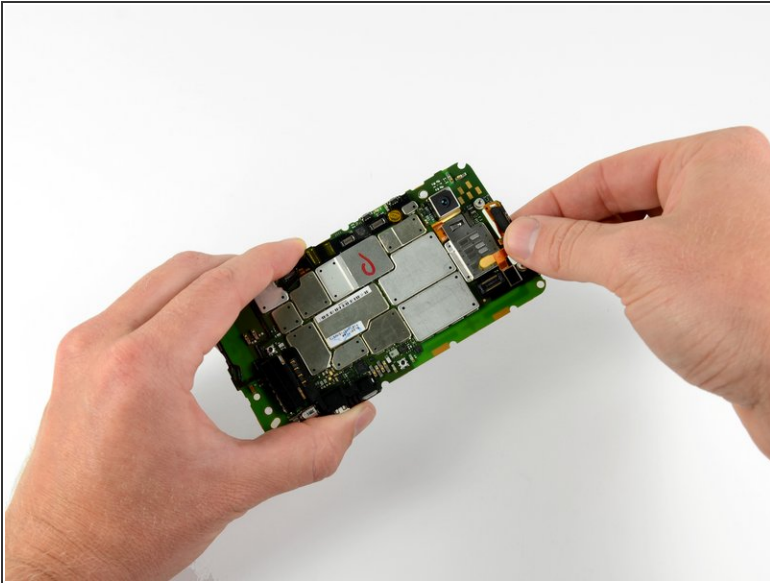
- The 4G LTE SIM card board is held on by a few screws.
- Another board bites the dust...good riddance LTE SIM card board...

## Step 9



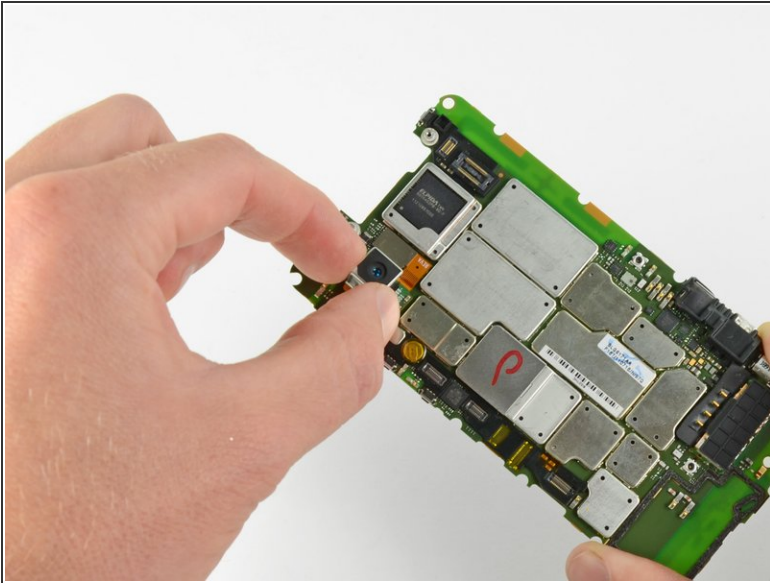
- The display ribbon cable connector is in the way. Let's find a way to remove it.
- We continue our quest of ridding the Bionic of its connectors with the help of our trusty [spudger](#).
- With stickers unstuck, screws unscrewed, and connectors disconnected, we lift the motherboard away from the display assembly.

## Step 10



- First thing off the motherboard: the front-facing camera/ear speaker assembly.
  - ❗ We're relieved to see that Motorola isn't using the same long ribbon cables found in some of their [other devices](#).
- Although Motorola/Verizon never divulged the exact megapixel count of the front-facing camera, its "VGA" quality suggests it to be 0.3MP.

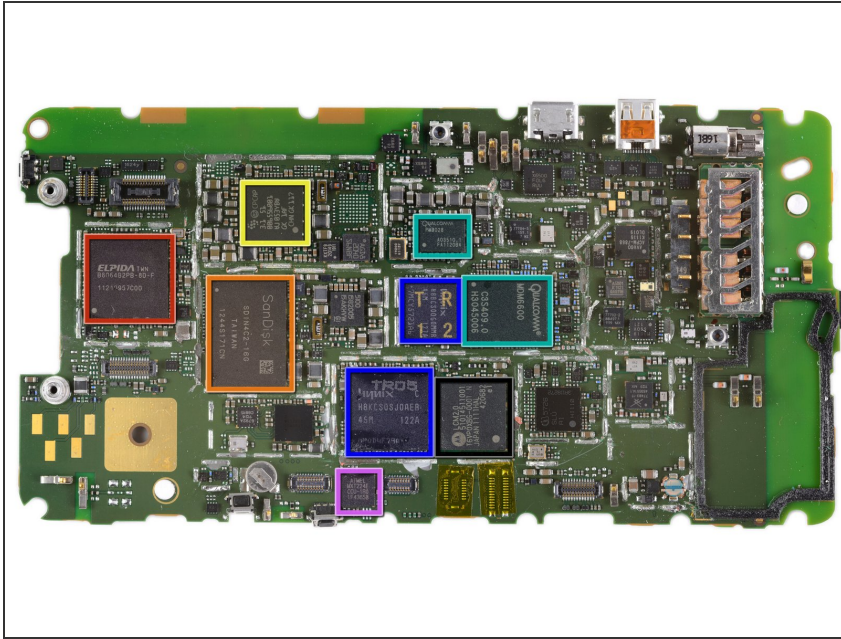
## Step 11



- The rear-facing camera simply pops out. Inscription on the component is this wonderful gem: "NCAABA 65161 0100698 2001 SH."
  - The Bionic sports an 8 MP camera capable of capturing video at a resolution of 1920 x 1080 (1080p) along with a dual-LED flash.
  - The camera measures in at 7.1 mm x 9.3 mm (length x width) and weighs an astonishing 1.2 grams!
- i** Much like the Droid X and Droid X2, the large camera seems to be the main reason behind the "hump" at the top of the phone.

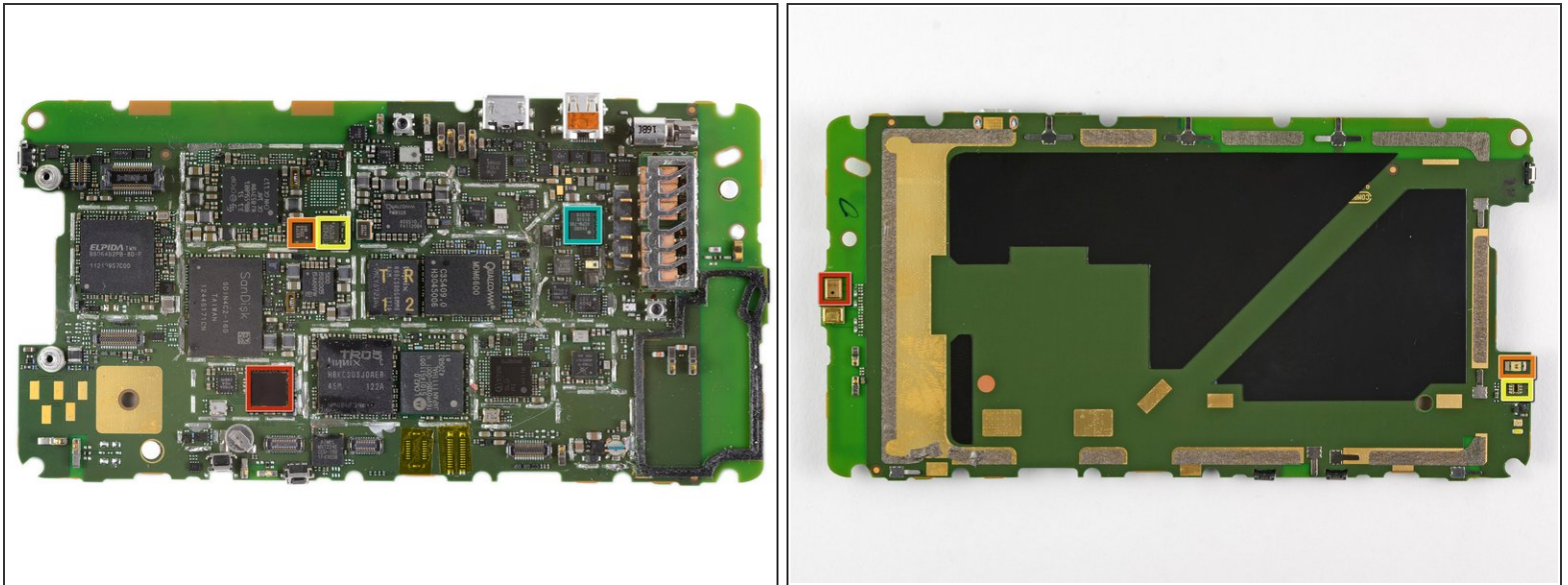


## Step 12



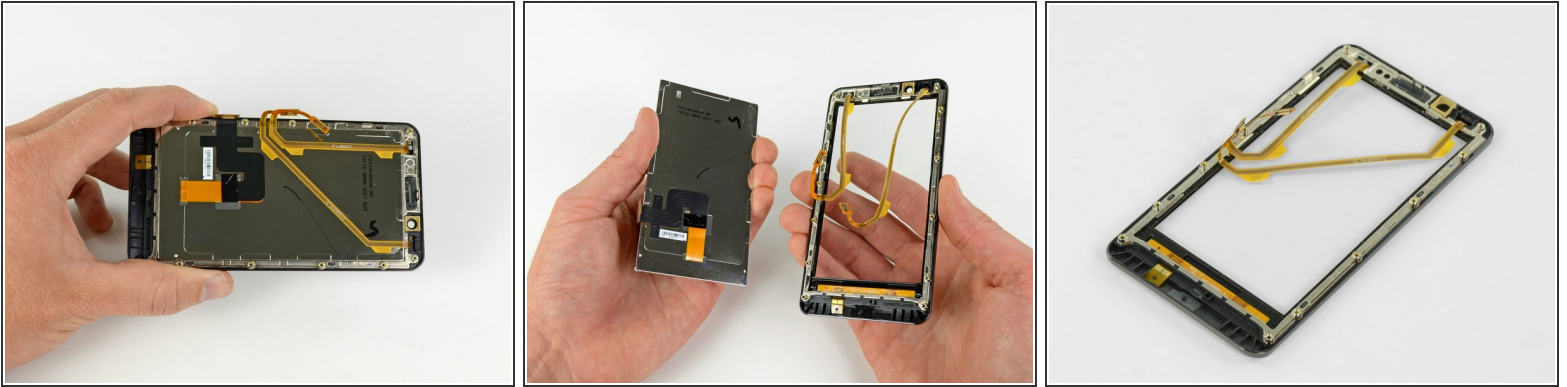
- After some slash-and-burn on the EMI shield forest, we found the big players on the motherboard:
  - Elpida B8064B2PB-8D-F 1 GB DRAM and TI OMAP 4430 processor
  - SanDisk SDIN4C2-16G 16GB Flash memory
  - ST Ericsson CPCAP 006556001
  - The Qualcomm PM8028 power management chip works in conjunction with the Qualcomm MDM6600 to provide CDMA connectivity.
  - Hynix H8KCS0SJ0AER and Hynix H8BCS0QG0MMR memory MCP containing Hynix DRAM and STM flash
  - [ATMEL MXT224E-CCU](#) Touchscreen Controller
  - Motorola T6VP0XBG-0001, believed to be the (LCM 2.0) LTE baseband processor.

## Step 13



- There's tons of chips on the front of the board. Other chips of interest include:
  - Texas Instruments WL1271 chip that supports WiFi (802.11 b/g/n), Bluetooth 2.1, FM and GPS technologies (thanks [Chipworks!](#))
  - [Kionix KXTF9](#) accelerometer
  - ST Micro AGD8 2040 S6NBF gyroscope
  - [Avago ACPM-7868](#) quad-band power amplifier
- What's this? Did we use Content Aware to remove all of the chips from the back of the motherboard? The answer is no; there just isn't much going on with the backside of the board.
  - We find a microphone (red), proximity sensor (orange), ambient light sensor (yellow) on the back.
- ❗ It is possible that Motorola placed all of the chips on one side of the board to keep the thickness of the device to a minimum.

## Step 14



- Hello there, display assembly. It's time for your monthly checkup.
- A little turn, a push, and a pop and the LCD is free.
- The Gorilla Glass front panel houses the capacitive touch Android function buttons and the status LED.

## Step 15



- The Bionic features a 4.3-inch 960x540 pixel qHD LCD, the same size found in the Droid X2.
- The qHD display originally appeared in the [Motorola Atrix](#) earlier this year, and we've seen one in every Motorola Android phone since.



## Step 16



## REPAIRABILITY SCORE:



- Motorola Droid Bionic Repairability Score: **9 out of 10** (10 is easiest to repair).
  - No tools are necessary for changing the SIM and microSD cards.
  - The battery can be removed in seconds.
  - The phone is held together with a limited number of screws and plastic clips. Adhesive is minimally used in its construction.
  - Many components can be replaced individually, and are not located on large, delicate ribbon cables.
  - The LCD is separable from the glass front panel, making them independently replaceable.
  - You must disassemble the entire phone to replace the LCD or front panel.
  - Replacing the rear-facing camera requires removing one of the motherboard's EMI shields.

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