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)
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.
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*. 
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.
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 Droooooooiiiiid 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!

- 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
  - ATMELE 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.

ℹ️ 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.
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.