



Samsung Galaxy Nexus Teardown

We tore down the Samsung Galaxy Nexus on November 28, 2011

Written By: Jake Devincenzi



INTRODUCTION

It's here, it's here, it's finally here! The sun is shining, the birds are chirping, and the ice cream truck is driving up the street, playing its joyful tune. We have our dollars ready, and we can't wait to grab ourselves some goodies. Join us as we unwrap our favorite frozen treat, the [Ice Cream Sandwich](#)-laden [Galaxy Nexus](#).

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TOOLS:

- [iFixit Opening Picks set of 6](#) (1)
 - [Phillips #00 Screwdriver](#) (1)
 - [iFixit Opening Tools](#) (1)
 - [Spudger](#) (1)
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Step 1 — Samsung Galaxy Nexus Teardown



- The Galaxy Nexus packs some serious hardware inside. Key specs include:
 - 1.2 GHz Dual-Core Processor
 - 1 GB RAM
 - 16 GB Internal Storage
 - 4.65" Super AMOLED Display
 - 5 MP (1080P HD) Rear-Facing Camera
 - [Near Field Communication](#) (NFC) and [Wi-Fi Direct](#)
- Android 4.0 Ice Cream Sandwich

Step 2



- Like most of Samsung's smartphones, the Galaxy Nexus' 5.0 megapixel camera is perched in the middle of the phone's backside.
- "Clean" is the word that comes to mind as we look at the rear of the Galaxy Nexus. You won't find any "1080p HD" markings or model numbers here.
- Just like the Nexus S, the Galaxy Nexus features a Contour Display. The curved glass conforms to the side of your face and makes talking on the phone more comfortable.
 - Maybe, some time in the very distant future, phones will become so advanced that they [fit perfectly to the user's ear and mouth](#).
- The power button and three gold pins for multi-media docking occupy the starboard side of Google and Samsung's flagship smartphone.

Step 3



- How does the Galaxy Nexus stack up to the [iPhone 4S](#)?
- In terms of size, the Galaxy Nexus is big enough (5.33 x 2.67 x 0.35 inches) to devour the 4S, so hopefully you have large pockets.
- Though it is larger than the iPhone 4S, this Galaxy Nexus is 5 grams lighter (135 compared to 140).

Step 4



- Insert finger here, wiggle finger thusly, and pop goes the panel!
- ⓘ OK, we'll come clean; the phone shipped with the battery removed. We first had to install the battery and back cover, and *then* we did some prying. This assuredly confirms one thing: the battery **is** user-serviceable.

Step 5



- Not only does the 3.7 V, 1750 mAh battery power the phone, but the user manual states that it also doubles as the NFC antenna.
- O RLY? We had to see this one for ourselves.
- Lo and behold, there's a sweet antenna hiding underneath the battery's shiny wrapper. So if you ever want to buy a replacement battery (and keep NFC functional), ensure that the battery has the antenna.
- ① Our battery says "Near Field Communication" on it, so that might be a good indicator if it will function as an NFC antenna.

Step 6



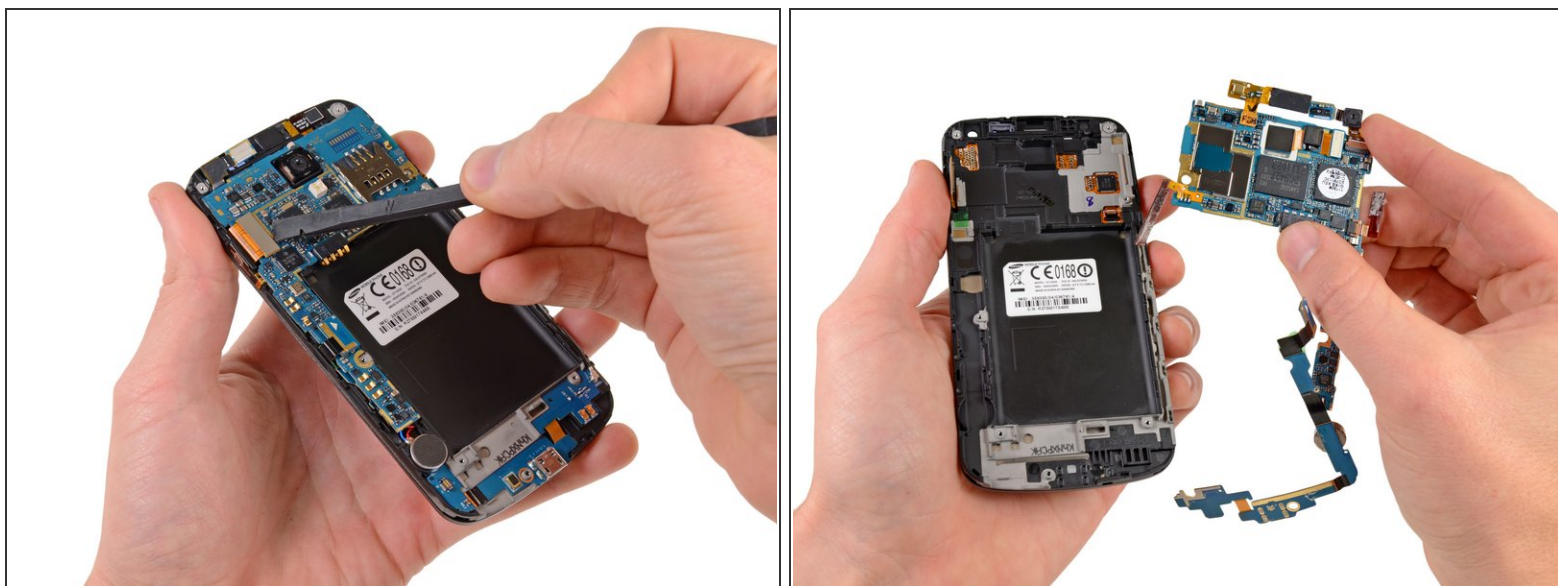
- Whipping out our handy 54 Bit Driver Kit, we reach for a Phillips #0 bit and get to work opening the phone.
- We wrenched our plastic opening tool till it was blue in the face and went through more [guitar picks](#) than Jimmy Page, but we managed to take off the back case. No device is too tough for the dexterous hands of the iFixit crew!

Step 7



- One little screw shackles the speaker and headphone jack assembly to the motherboard.
- Goodbye, little screw; hello, speaker and headphone jack assembly.
- With access to Google Music and high definition movies, there's no doubt that Galaxy Nexus owners will want their phone to make some beautiful noise. Unfortunately, our disassembled phone didn't make a single chirp.

Step 8



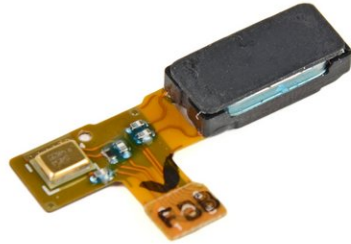
- A few connectors here, some screws there, and a wee bit of glue everywhere...nothing stands a chance against our [spudger](#)! The motherboard dislodges from its home with moderate force, but nothing too extreme.

Step 9



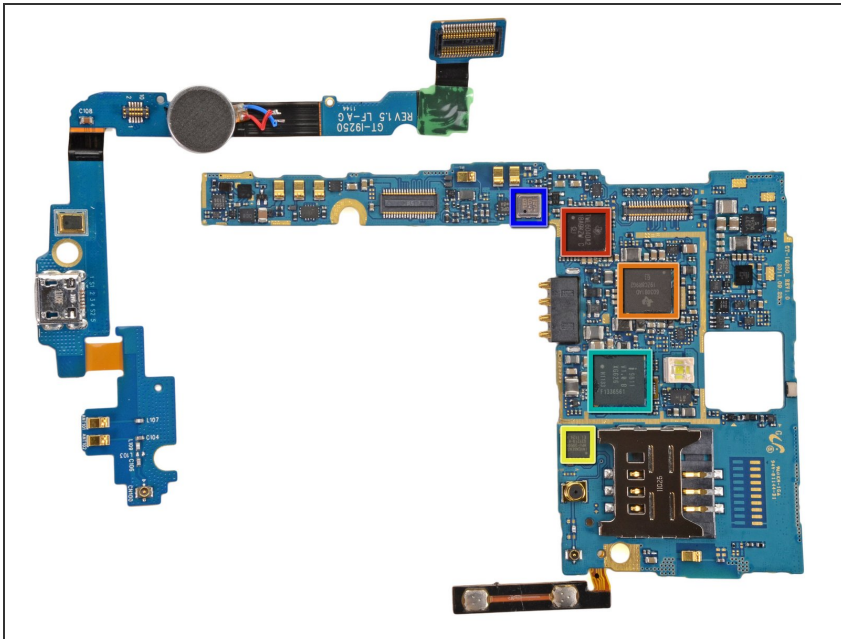
- A flick of the spudger and out come the front- and rear-facing cameras.
- The 5 megapixel rear-facing camera is optimized for low light conditions and has a handy continuous auto-focus feature that'll surely help keep those quick moments clear. If you prefer moving pictures, this camera can capture full HD 1080p "talkies."
- The front-facing camera allows for video chat and will take pictures at 1.3 MP or videos at 720p.
- The rear-facing camera has a Winbond 8 Mb Serial Flash Memory unit in line to help it buffer all the data it collects.

Step 10



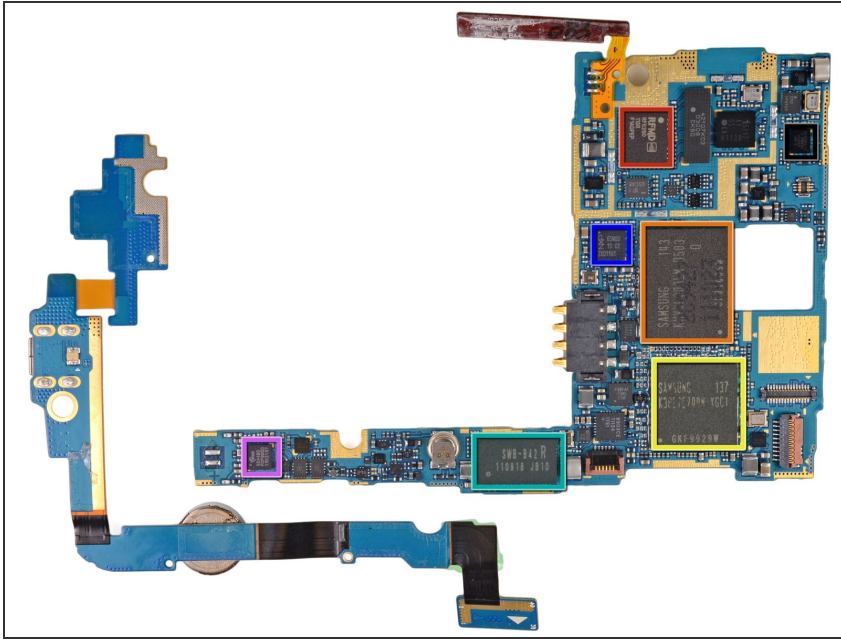
- The ear speaker pops off the motherboard without much effort.
- ⓘ The ability to replace individual components inside the Galaxy Nexus impresses us, since this will make repair less costly.

Step 11



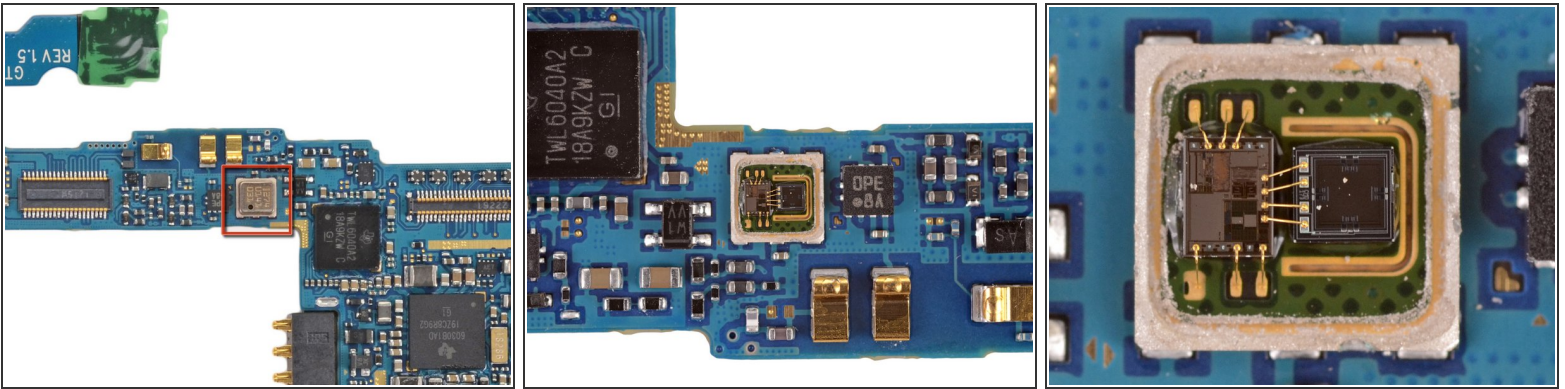
- The primary internals of the Galaxy Nexus are held on two L-shaped boards. The small board on the left holds the vibrator motor and several connections. The large board on the right is the motherboard, which houses the volume buttons, SIM slot and the following chips:
 - Texas Instruments [TWL6040](#) 8-Channel High Quality Low-Power Audio Codec
 - Texas Instruments [TWL6030](#) Fully Integrated Power Management with Switch Mode Charger
 - Invensense [MPU-3050](#) Motion Processing Unit
 - Intel [XG626](#) Baseband Modem
 - Bosch [BMP180](#) MEMS Pressure Sensor

Step 12



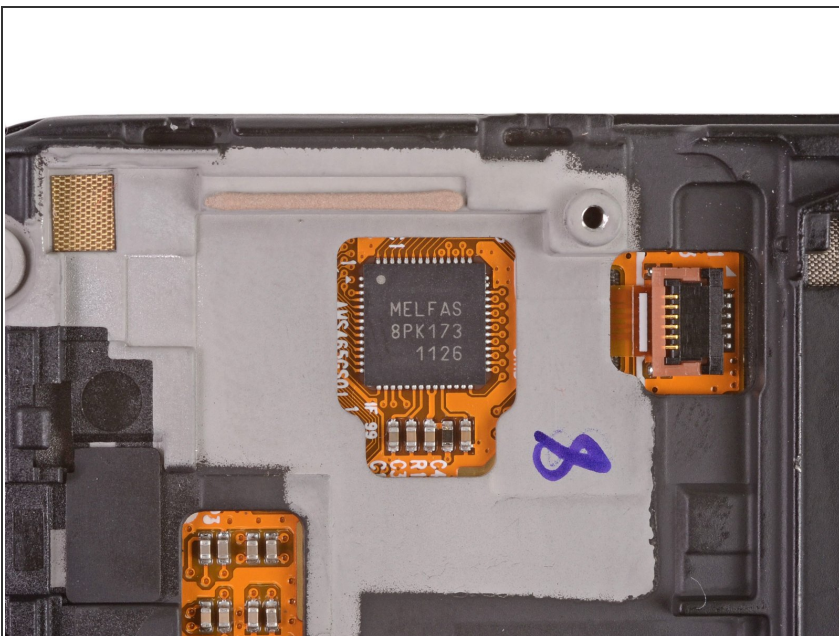
- Flipping both boards over reveals a lot of nothing on the smaller board, but a ton of chips on the motherboard—a "smörgåsar-board," if you will:
 - RFMD [RF6260](#) Quad-band Multimode Power Amplifier Module
 - Samsung KMVYL000LM Multichip Memory Package, which we believe to house 512 MB of RAM in addition to the main processor.
 - Samsung [K3PE7E700M](#) 512 MB DDR2 SDRAM
 - Samsung [SWB-B42](#) BT 4.0 Dual Band Wlan FM Tx/Rx. [Chipworks](#) says the module is actually manufactured by Murata, and houses a Broadcom BCM4330 die inside.
 - NXP [65N00](#) Smart Card IC. According to Chipworks, this two-die package houses an MCU and a PN544 NFC controller.
 - Silicon Image [9244](#) MHL transmitter
 - SiRF SiRFstarIV [GSD4t](#) GPS tracker

Step 13



- The chip labeled as 274 U141 031 hides the Bosch [BMP180](#) MEMS Pressure Sensor, which should be responsible for the "[Barometer](#)" feature inside the Nexus.
- ❗ The Bosch BMP180 is identified by its markings [CMD 173](#) as noted by our friends at Chipworks.
- Check out the *wire bonds* on the [third image](#). This is a very, very small chip.
- Just how small is it? Well, here's how a [U.S. dime looks like](#) next to the chip (indicated by red arrow)

Step 14



- A [Melfas](#) 8PK173 1126 Touch Screen Controller allows users to control the Galaxy Nexus with "[...fun, consistent gestures.](#)"

Step 15



- Samsung Galaxy Nexus Repairability Score: **6 out of 10** (10 is easiest to repair).
 - Battery replacement is incredibly simple thanks to the removable rear panel.
 - Minimal adhesive makes removal of the motherboard and other components a snap.
 - Headphone jack and speaker assembly are not soldered to the motherboard, so replacement is easy.
 - The only soldered components are the volume switch and vibrator motor.
 - Removing the rear case to access the motherboard and other internals requires *a lot* of careful prying and guitar-picking.
 - The glass is fused to both the display and the display frame. So *don't crack the glass* unless you're good with a heat gun, or you're fond of replacing the glass, display, and frame together (\$\$\$).

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