



# Samsung Epic 4G Touch Teardown

We took apart the Samsung Epic 4G Touch on 9/19/11.

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## INTRODUCTION

Meet the Samsung Epic 4G Touch, a.k.a. the [Samsung Galaxy S II](#), the newest addition to Samsung's Galaxy line. Join us as we investigate if this Galaxy truly is of another world.

See how the Epic 4G Touch strays in design from its European brother, the [Galaxy S II](#).

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### TOOLS:

- [Heat Gun](#) (1)
  - [iFixit Opening Picks set of 6](#) (1)
  - [Phillips #00 Screwdriver](#) (1)
  - [iFixit Opening Tools](#) (1)
  - [Spudger](#) (1)
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## Step 1 — Samsung Epic 4G Touch Teardown



- At last, the long awaited Samsung Galaxy S II—branded the Epic 4G Touch by Sprint—has arrived in the excited hands of the iFixit crew!
- Some key features of the Epic 4G Touch include:
  - 1.2 GHz dual-core processor
  - 4.52" [Super AMOLED Plus](#) display—0.22" bigger than the [Galaxy S II](#)
  - 1 GB RAM
  - 8 MP rear-facing camera able to shoot videos at 1080p paired with a front facing 2 MP camera
  - 16 GB onboard memory with a microSD card slot for up to 48 GB total memory
  - Android 2.3.4 Gingerbread.

## Step 2



- When compared to the T-Mobile [Samsung Galaxy S 4G](#), the Micro USB port has been relocated from the top to the bottom of the Epic 4G Touch. Sadly, they also removed the [sliding door](#) that keeps it free from lint and micro dust bunnies.
- The Epic 4G Touch has slightly more girth than its overseas counterpart, the Galaxy S II. At 9.65 mm and 4.55 ounces, the Epic 4G Touch seems to have gained a millimeter and a half-ounce during its trip to the U.S.
- The Galaxy S II that is available overseas features only three buttons on the front, including a physical home button. Our yankee version, however, has four capacitive touch function buttons, like many Android devices sold here.
- ⓘ If the yankee-added search button is the bane of your existence, you may always opt for an unlocked version of the original Galaxy S II.

### Step 3



- The user-removable back cover comes off quite easily with some prying.
- Unfortunately, Samsung and Sprint decided not to include [NFC](#) support in this variant of the Galaxy S II, which means no [Google Wallet](#) support either.
- ⓘ Unsure what an NFC module looks like? Check out the [Nexus S](#) teardown.
- We love phones with batteries that are easy to replace, and this device fits that mold.
- The 1800 mAh Li-ion battery in the Samsung Epic 4G Touch has a claimed battery life of 8.7 hours of continuous talk time and 10.5 days on standby.
- ⓘ Compare this with the [Galaxy S II's 1650 mAh battery](#).
- 🔗 For those of you who prefer real world battery life tests, [Engadget's reviewers](#) easily managed 12 hours of moderate usage without any need to charge the battery.

## Step 4



- Before diving in any further, we take a brief moment to admire the 8.0 megapixel rear-facing camera and microSD slot.
- ⓘ Notice that the camera orientation and microSD slot location have been altered from that of the [Galaxy S II](#).
- Unfortunately, the Samsung Epic 4G Touch does not come with a microSD card. If 16 GB of internal memory isn't enough for you, you're going to have to spring for your own card.

## Step 5



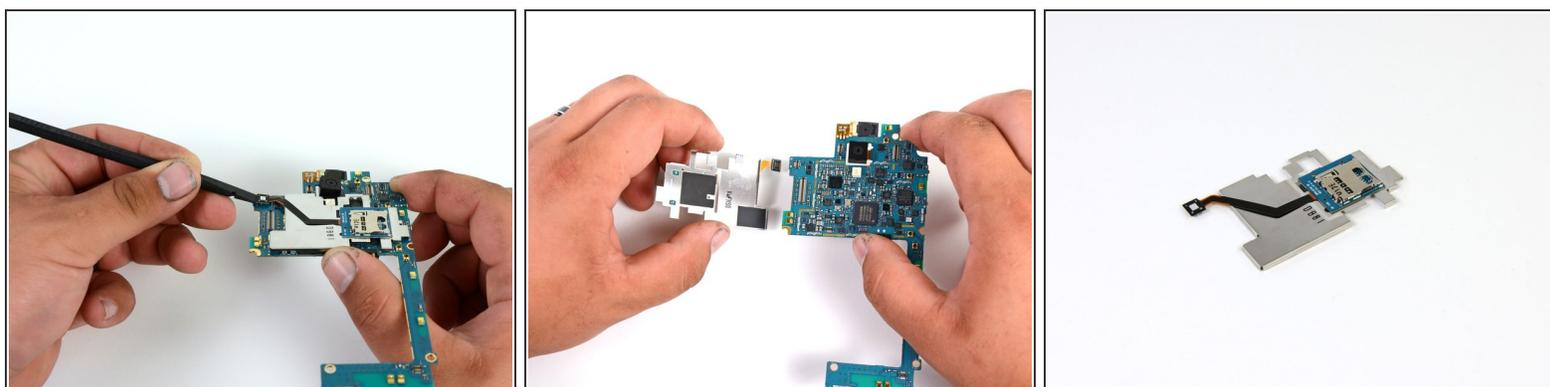
- Break's over! A Phillips #00 screwdriver from our 54 piece bit driver kit and some plastic opening tools allow us to separate the rear case from the display assembly.
- ⚠ It's a good idea to work gently as you pry around the display glass. Excess force may result in, well, pokey shards of glass.

## Step 6



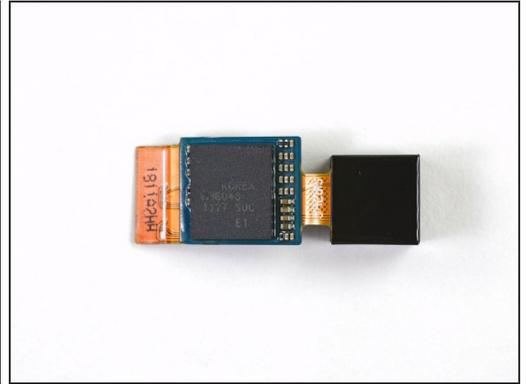
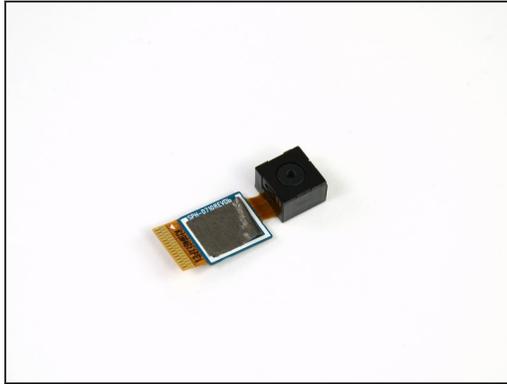
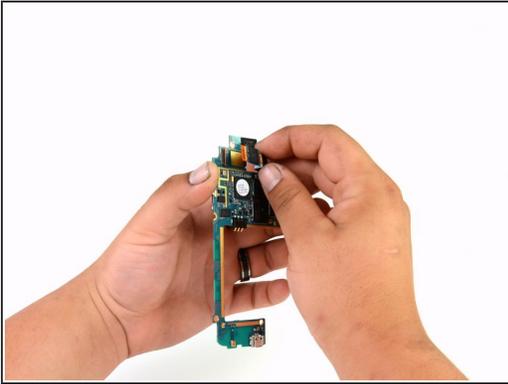
- After freeing a few more Phillips #00 screws, a handful of connectors, and a sticker from the firm grips of the Epic 4G's Touch, off comes the motherboard.
- Cool your soldering stations everybody, we are pleased to announce that the device doesn't house a [smorgasbord of EMI shields](#) and that its single EMI shield is removable with only a few gentle pries.

## Step 7



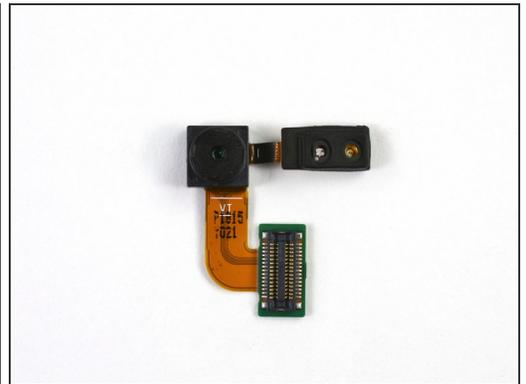
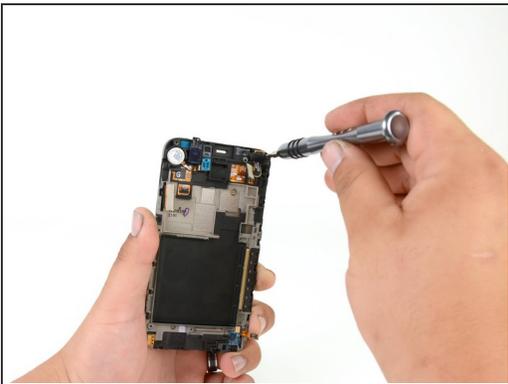
- With the help of our [spudger](#), we remove a connector to get to the EMI shield.
- In an unusual twist, the SD card reader is attached to an EMI shield that requires no desoldering to remove. That made our job easier this time around.

## Step 8



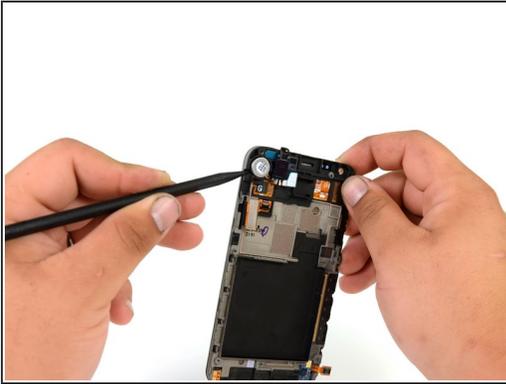
- The next thing off the motherboard is the rear-facing camera.
- 8.0 megapixels and HD video recording, while impressive, are pretty run-of-the-mill for newer Android phones.
- What appears to be the image processor is attached to the camera ribbon cable and bears the marking MBG043.

## Step 9



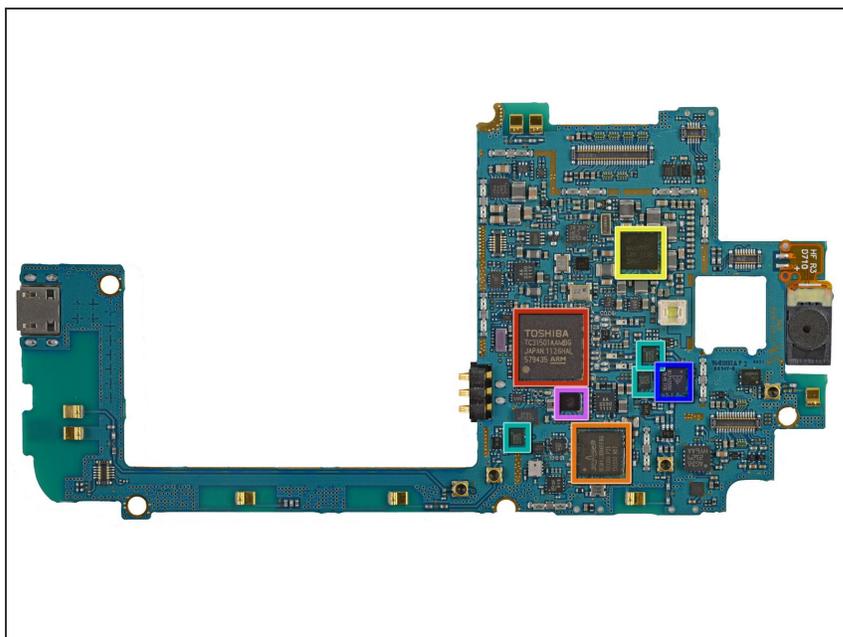
- Pesky screws! As soon as you are all gone, the front-facing camera shall be freed.
- Huzzah! Alas the front-facing camera gains its independence from the innards of the Epic 4G Touch.
- The front-facing camera assembly is paired along with what seems to be the LED/ambient light sensor.

## Step 10



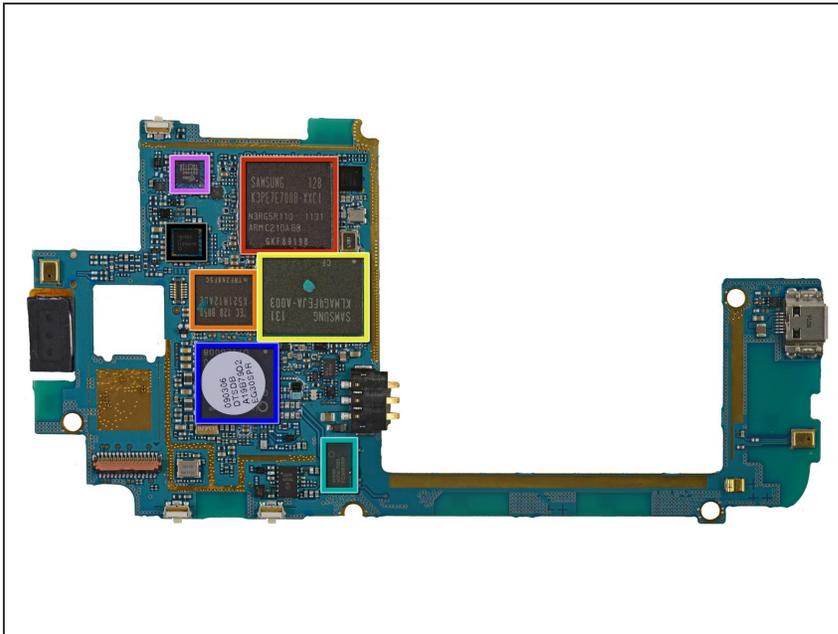
- Gentle prying allowed the headphone jack and vibrator motor to be freed from the rear inner framework.
- The vibrator motor is labeled 36CZB8QADHF.
- The headphone jack/vibrator motor assembly is manufactured by Samsung, labeled as SPH-D710\_EAR.

## Step 11



- The front side of the motherboard contains the following major chips:
  - Toshiba TC31501AAMBG WiMax package. According to [Chipworks](#), "This device operates in the 2.5GHz frequency band and offers high-speed connectivity in the mobile environment with low power consumption." (Thanks guys!)
  - Broadcom [BCM4330XKFFBG](#) 802.11 a/b/g/n MAC/Baseband/Radio with Integrated Bluetooth 4.0+HS and FM Transceiver/Receiver
  - Maxim [MAX8997](#) Power Management IC
  - WIP4255H
  - Avago CFI120 223713
  - Maxim [MAX8893C](#) Power Management IC

## Step 12



- We continue identifying the chips located on the rear-side of the motherboard:
  - Samsung K3PE7E700B-XXC1 Dual-Core 1.2 GHz Processor
  - Samsung Electronics Corporation (SEC) K521H12ACE
  - Samsung KLMAG4FEJA-A003 16 GB Flash Memory
  - [Avago ACFM-7325](#) Band Class 14 PCS/Band Class 10 Cellular Band Quadplexer
  - Qualcomm QSC6085 CDMA Processor
  - Silicon Image 924480
  - Yamaha YMU823 Audio Codec

## Step 13



- We had to rely on some heat gun action to proceed further, as the glass panel and LCD are fused to the midplane.
- Tons of [heat](#) and a set of [guitar picks](#) later, we separated the two components.
- ⓘ Newsflash: The display on this Samsung phone is manufactured by Samsung. How about that!
- AMS452GN05 is the official designation on the ribbon cable, and it looks to be manufactured around January 11th of 2011.
- We found the [Atmel mXT224E](#) mutual capacitance touchscreen controller, located on the rear side of the display assembly.

## Step 14



- Samsung Epic 4G Touch Repairability Score: **7 out of 10** (10 is easiest to repair).
  - Battery and microSD card can be accessed by simply removing the back cover.
  - There's a total of 9 Phillips #00 screws to remove to gain access to the majority of the device.
  - Most of the disassembly was straightforward and easy, and accomplished with standard tools.
  - Some components share the same ribbon cable (front-facing camera and ambient light sensor, for example), thereby increasing repair costs.
  - Speaker is soldered to the motherboard, making replacement more difficult.
  - Glass panel and Super AMOLED Plus display are fused, making cracked screens a costly repair (and requires the use of a heat gun).

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