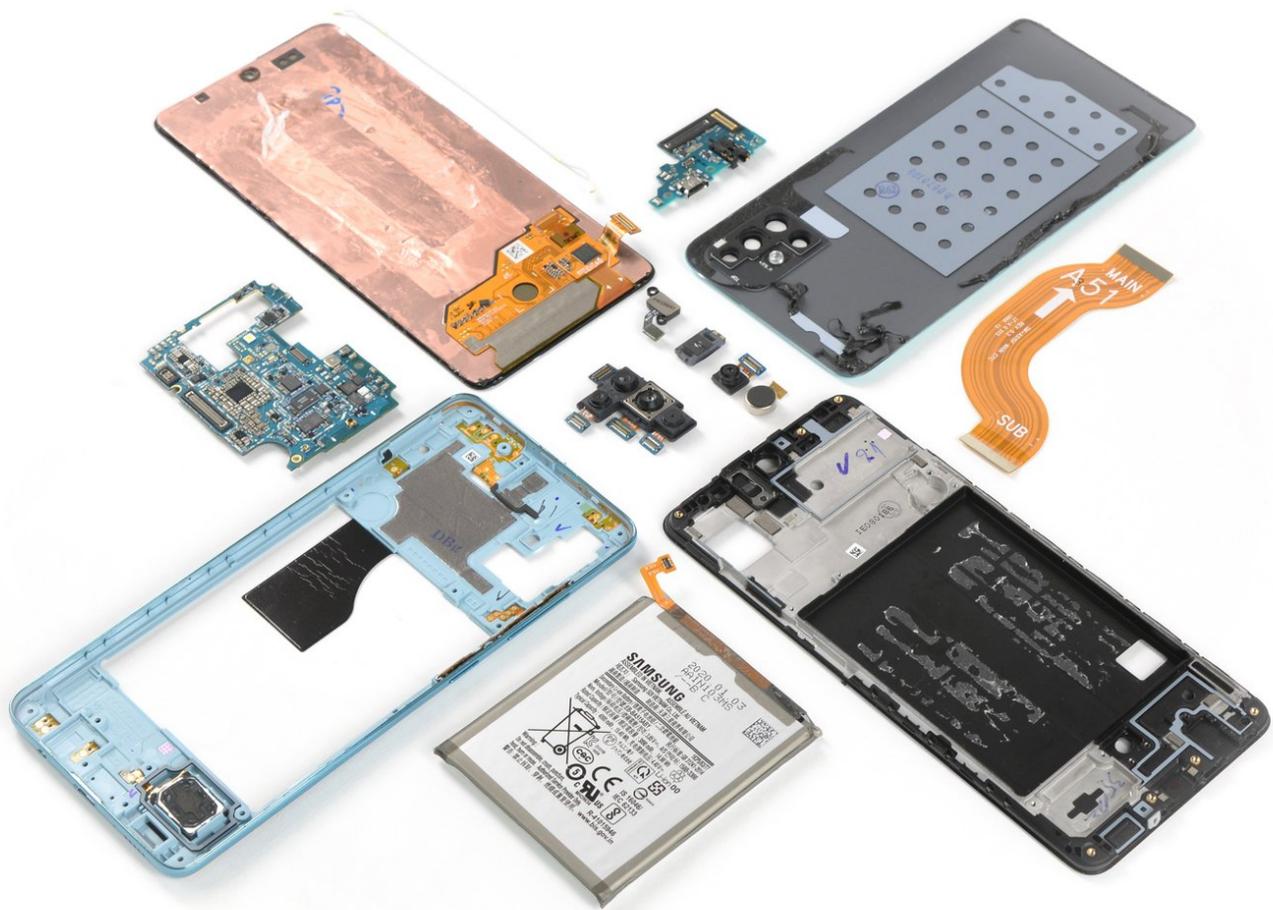




Samsung Galaxy A51 Teardown

Teardown of the Galaxy A51, performed February 2020.

Written By: Adriana Zwink



INTRODUCTION

Samsung Electronics launched a new family member for its Galaxy A series: The Galaxy A51. The expectations for this new mid-range smartphone are huge, after all the predecessor—[Galaxy A50](#)—was one of the [most successful smartphones](#) Samsung released in 2019. Can the successor keep up? A teardown might be the only way to find out!

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TOOLS:

- [Tweezers](#) (1)
 - [iOpener](#) (1)
 - [iFixit Opening Picks set of 6](#) (1)
 - [Spudger](#) (1)
 - [Phillips PH000 Screwdriver](#) (1)
 - [Suction Handle](#) (1)
 - [Plastic Cards](#) (1)
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Step 1 — Samsung Galaxy A51 Teardown



- The specs may not impress at first sight, but there's quite a lot here for the price:
 - 6.5" Super AMOLED capacitive touchscreen (1080 × 2400px) and Infinity-O Display
 - 48 MP *f*2.0 main camera, 12 MP *f*2.2 ultra wide camera, 5 MP *f*2.4 macro camera for close-ups and a 5 MP *f*2.2 depth camera for multiple live focus effects; 32 MP *f*2.2 front-facing camera
 - Exynos 9611, octa-core (4×2.3GHz Cortex-A73, 4×1.7GHz Cortex-A53)
 - Built-in storage: 64GB/4GB RAM, 128GB/4GB RAM, 128GB/6GB RAM
 - Android 10.0
 - Fast wired charging with 15W
 - USB-C and a nearly extinct 3.5 mm headphone jack

Step 2



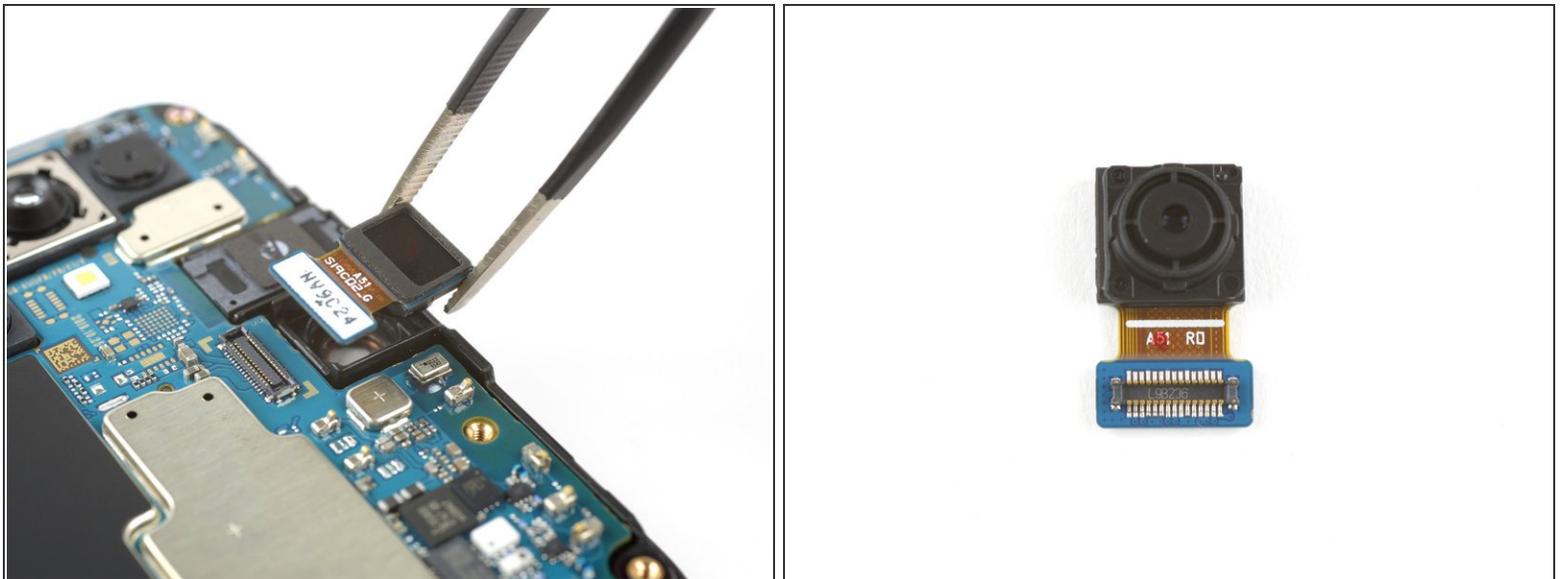
- The back cover shines like glass, but it's a ruse! It's plastic—perhaps a cost-saving measure? Whatever the reason, we're happy to see it. This plastic makes the A51 less shatter-prone than [the glass-backed Galaxy S phones](#).
- Plenty of heat from our [iOpener](#) softens the adhesive and we can start battling our way in.
- And we come through it unscathed! The back side lifts off cleanly (with a little gentle force). No booby-trap cables here.

Step 3



- An unlucky 13 [Phillips screws](#) later we can release the midframe from its captivity.
- This plastic midframe houses the NFC antenna (among a handful of other antennas), the volume and power buttons and the speaker on the bottom.

Step 4



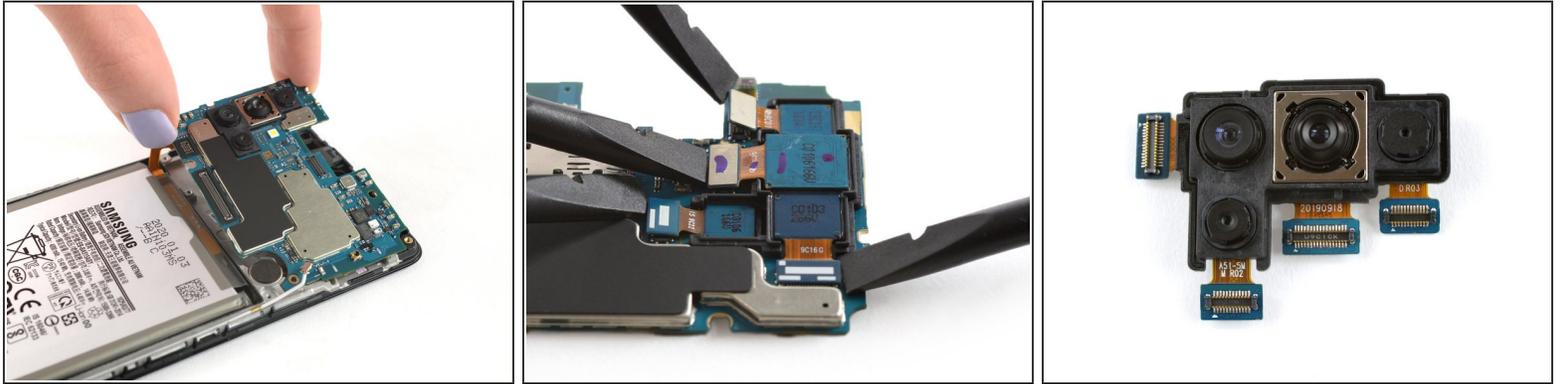
- Samsung sends the A51 into the selfie-race with a 32 MP $f2.2$ front camera. That's a 7 MP increase from its predecessor—quite instagrammable.
- ⓘ For comparison: The [iPhone 11 Pro Max's](#) rear and selfie cameras provide 12 MP each while the [Samsung Galaxy Note 10+](#) offers 16 MP/12 MP for the rear cameras and 10 MP on the front. But more doesn't always mean better.

Step 5



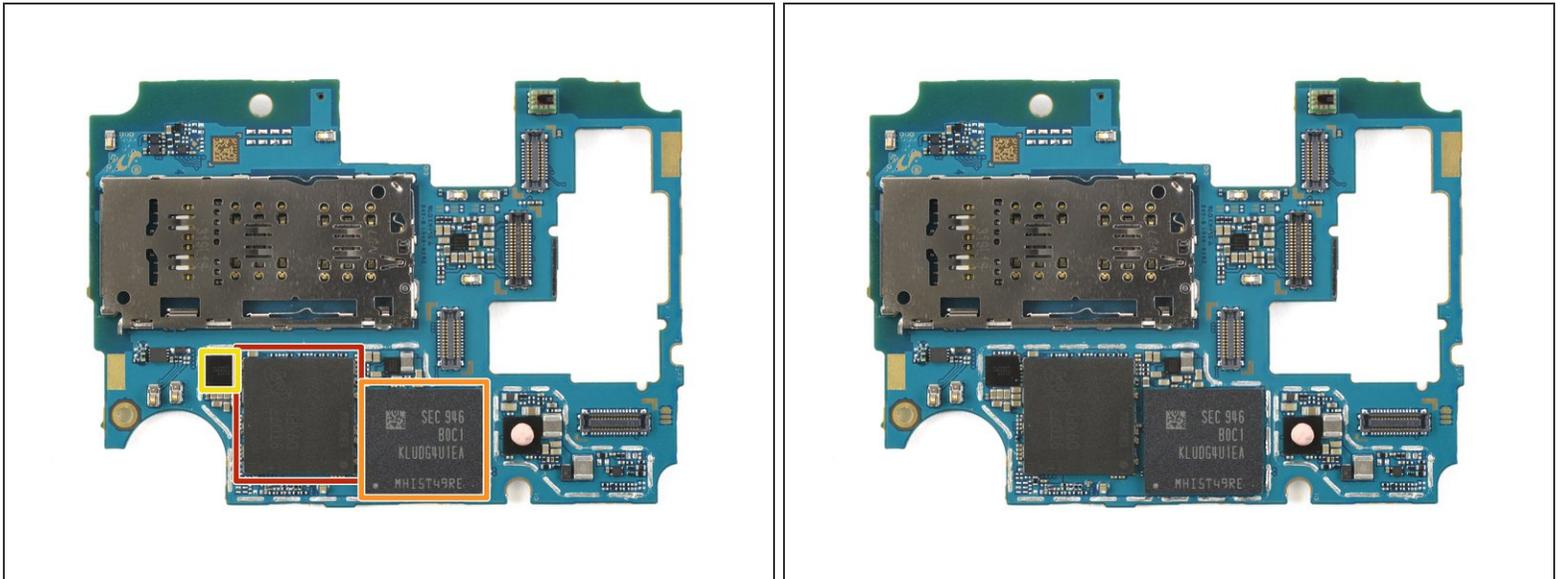
- Just like its predecessor, the A51 also features an optical in-display fingerprint scanner which is placed near the daughterboard.
- ⓘ Optical fingerprint sensors work by illuminating the finger and taking an image of the bright and dark areas representing the ridges and valleys of the fingerprint. ([More on fingerprint sensor technology.](#))
- The daughterboard comes out without a fuss and brings the USB-C plug and the beloved 3.5 mm audio jack to light.
 - A dedicated audio jack reduces wear and tear on the USB-C port, which is nice. Both ports are soldered in place though, so replacing one individually will require soldering skills.
 - That said, this configuration is better than the [single-board Galaxy S10](#)! At least this tiny daughterboard can be swapped out with relative ease should one or both ports fail on you.

Step 6



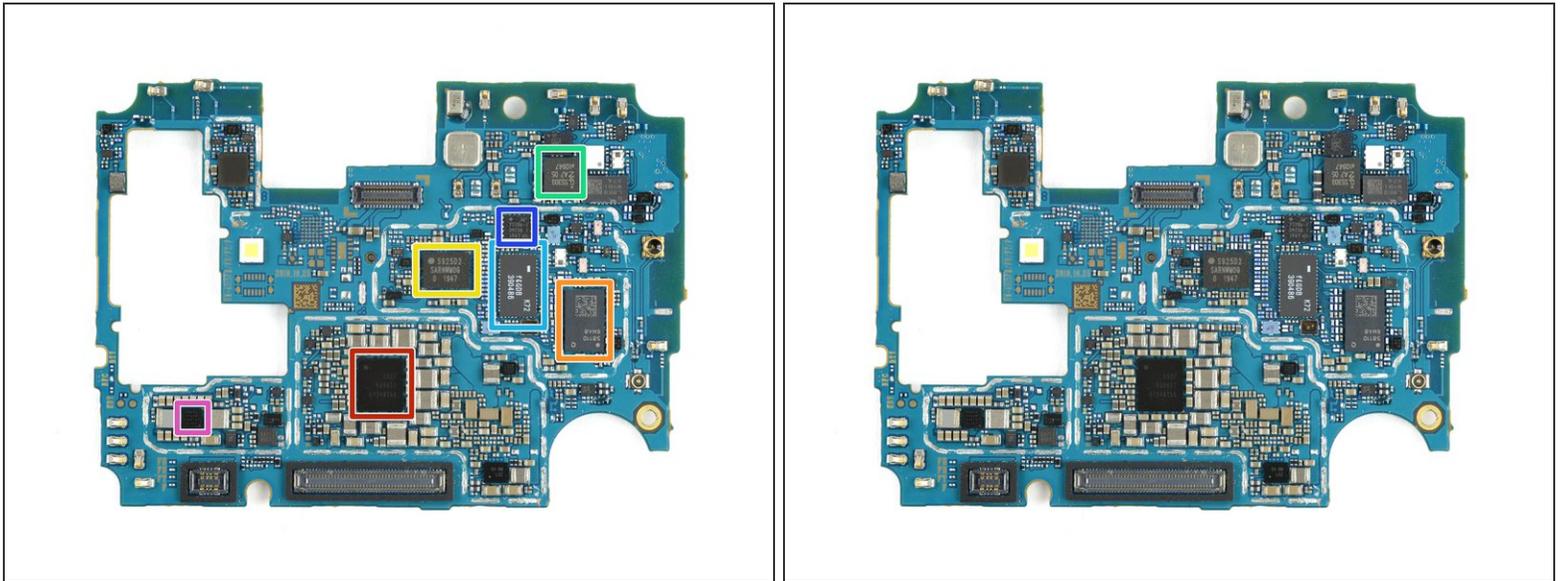
- The motherboard is held down by just one screw. Once it's out, we start plucking up the cameras right away.
- Although the A51 is a mid-range smartphone, its camera setup can supposedly keep up with the more expensive ones. Samsung claims that its four cameras ensure perfect everyday photography.
- Starting at top left: a 12 MP ultra wide cam, a 48 MP main cam, a 5 MP depth cam, and last but not least the 5 MP macro cam on the bottom left.

Step 7



- Let's see what goodies we can find on the motherboard:
 - Micron MT53D1024M32D4BD-046 LPDDR4 memory covering the Exynos 9611, octa-core CPU with Mali-G72 MP3 GPU
 - KLUDG4U1EA-B0C1 128GB UFS 2.1 flash storage
 - Realtek ALC5665 Audio Codec

Step 8



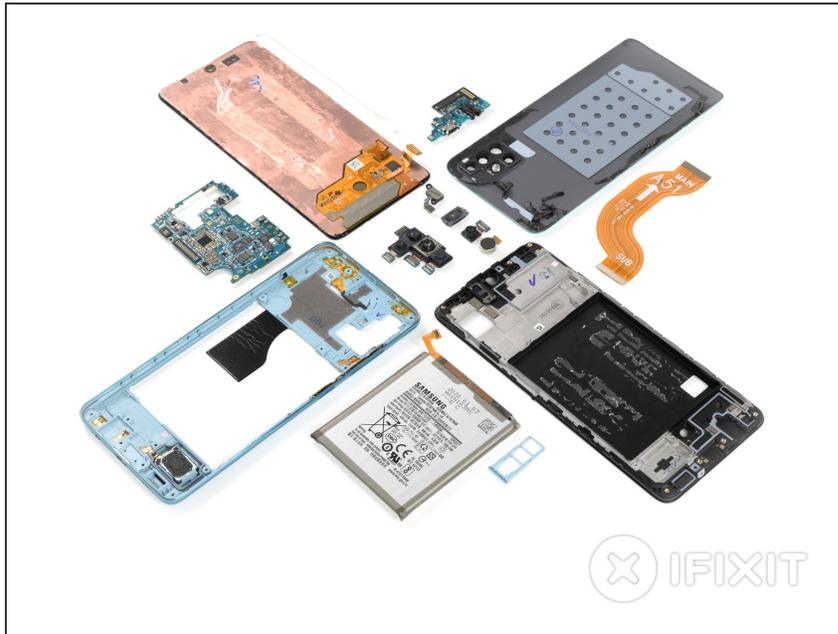
- The other side reveals:
 - S537 609651 G1944Y55 (likely a power IC)
 - Qorvo QM58110 Envelope Tracking
 - S925D2 Intermediate Frequency Chip
 - NXP PN553 NFC controller
 - fkGDB 390486
 - Skyworks [SKY77786-11](#) High Band Multimode Multiband Power Amplifier Module
 - Samsung S2DOS15 Display Power Management

Step 10



- With the phone empty we turn to the screen... and it puts up a real fight!
- After an initial round of heating, we didn't get very far with our [Opening Picks](#) before we heard that dreaded noise...
 - **Crack!**
 - Like all Samsung phones, the A51's screen is strongly glued to the frame. There's a reason that Samsung sells screen replacements pre-adhered to brand new frames, and this is it!
- The good news is once you crack it, you can't go back! The rest of our removal procedure is infinitely less stressful. We use a [Plastic Card](#) to carve away the rest of the screen.
- Once we finally break it free, we find the culprits: two thick adhesive strips that cover a large area of the screen.

Step 11



- This is it! The battle is over, the screen is broken, the adhesive is beaten. We retreat to our corner and prepare for the next battle.
- But no need to be sad. We've prepared a nice souvenir for you. Here you can download a see-through teardown [wallpaper](#) for your Galaxy A51.
- Feast your eyes on all the bits and stay tuned for a score.

Step 12 — Final Thoughts

REPAIRABILITY SCORE:



- The Samsung Galaxy A51 earns a **4 out of 10** on our repairability scale (10 is the easiest to repair):
 - A single Phillips driver takes care of all the screws.
 - Many components are modular and can be replaced independently.
 - The plastic back cover is glued in place, but can be removed fairly easily with heat.
 - The battery is accessible but heavily glued in place.
 - Screen repairs require a lot of disassembly while battling tough adhesive.