Samsung Galaxy S8+ Teardown

Teardown of the Samsung Galaxy S8+.

Written By: Sam Goldheart

INTRODUCTION

Samsung is back, baby! The world's biggest smartphone maker kicks off 2017 by launching what is very nearly the world's biggest smartphone—with its monster 6.2-inch display, the Galaxy S8+ packs a visual wallop. But how will it fare on the teardown table? Let's get the exploded view.

Oh, were you looking for our standard Galaxy S8 teardown? Well, look no further.

Want to get the edge on future teardowns? Follow along on Twitter, make friends with us on Facebook, and check out our Instagram for all the latest!

[video: https://www.youtube.com/watch?v=x8ipQ-4n0fc]

🔧 TOOLS:

- iOpener (1)
- Suction Handle (1)
- iFixit Opening Picks set of 6 (1)
- Spudger (1)
- Phillips #00 Screwdriver (1)
- Plastic Cards (1)
- Tweezers (1)
- Halberd Spudger (1)

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Step 1 — Samsung Galaxy S8+ Teardown

- You've seen the slick exterior of the S8+ in Samsung's promotional imagery, but we're going deeper. A few of this teardown's expected waypoints include:

  - 6.2-inch, dual-edge, Super AMOLED display with 2960 × 1440 resolution (529 ppi)

  - Qualcomm Snapdragon 835 (or Samsung Exynos 8895) processor, with 4 GB RAM

  - 12-megapixel rear camera with dual pixel autofocus and 4K video capture; 8-megapixel selfie camera

  - 64 GB internal storage, expandable via MicroSD card (up to 256 GB additional)

  - IP68 water resistance rating

  - Android 7.0 Nougat

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Step 2

- Ports on the bottom include a headphone jack, USB-C connector, microphone port, and speaker grille.

- The front face is smooth and very nearly featureless—the physical home button has been replaced by a pressure sensor that lives under the display, making this a truly [monolithic](#) device.

  ⓘ Meanwhile, the fingerprint reader has been moved to an [awkward](#) new home on the rear. Apparently Samsung found an easier solution than [Apple](#)'s rumored in-screen sensor.

- Lastly, frequent SIM-swappers take note: there are two nigh-identical openings in the top of the S8+. One is for your SIM eject tool, and the other houses a microphone. Don't mix those up.

Step 3

- ● Time for a few quick comparisons before we get down to brass tacks.

  - ● In the three-fer, we've got the S7 Edge on the left, S8+ in the center, and S8 on the right.

  - ● Thanks to its thinner bezels and unusual 18.5:9 aspect ratio, the S8+ manages to pack a 6.2" display in *about* the same form factor as the 5.5" S7 Edge.

- ● Stacked against last year's offerings, the only noteworthy difference is the migrating flash assembly and relocated fingerprint reader.

Step 4

- Enough delay—we're eager to see inside. Luckily, by now we know the drill.
    - ⓘ This isn't our first time opening a Galaxy phone.

- Plenty of heat from our iOpener softens the adhesive enough to pry the rear glass up and start battling our way in.
    - ⓘ *We're definitely making it look easy here—Samsung made opening this phone the hardest part of any repair. For the unabridged version, check out our S7 repair video guide.*

- And we're almost in...
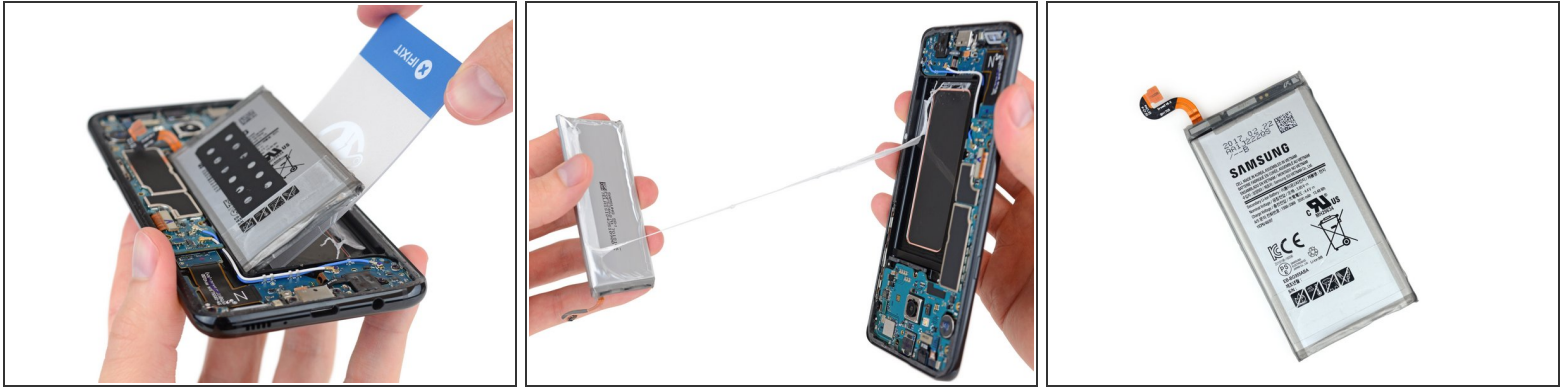
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Step 5

- ...But for all our talk, this rear panel does present something new. The fingerprint reader lives in the rear panel, with a very short cable tying it to the motherboard.
  - It looks like Samsung designed this cable to safely pull free with the rear panel. With almost no slack in the cable, the gentlest lift of the panel yanks the cable right out from its tiny pop connector. This makes it decidedly less damage-prone than certain fingerprint sensor cables we've seen before.

- Cable dispatched, and we've got the glass out of the way. The S8+ and S8 follow the S6's move to a glass rear panel. This design has saved Samsung the engineering effort that goes into integrating antennas into a metal-backed phone, at the cost of durability and repairability.
  - Twice the crackability and a heck of an opening procedure won't help when it's time to score the repairability.

Step 6
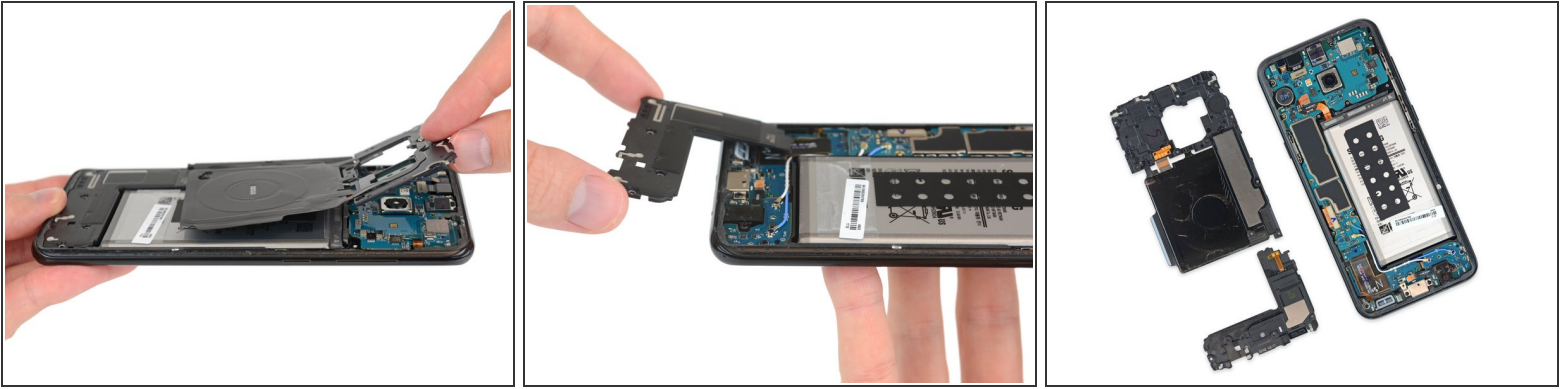
(i) We would have liked to start by disconnecting the battery, but its connector lies trapped beneath the midframe.

- With the midframe coming out in pieces, things are looking very similar to the S7 and S7 Edge.

- This time the upper antenna assembly is combined with the NFC/wireless charging panel, like on the Note7.

  - The coil should also perform Samsung Pay functions, duplicating MST—presumably using the coil as an electromagnet to act as a credit card strip would on a card reader.

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Step 7

- Let's hope that Samsung's improved testing procedures are what the Note7 was missing, because this design looks about the same to us.

  - And it's still a bear to pry it off that adhesive. Even with the battery fully removed, the glue won't let go.

- The S8+ features a 13.48 Wh (3500 mAh at 3.85 V) battery—the exact same capacity as the Note7, and a little less than the S7 Edge's 13.86 Wh.

- Samsung continues to beat Apple in the battery capacity wars, with the iPhone 7+ weighing in at 11.1 Wh (2900 mAh at 3.82 V).

  - ⓘ However, the iPhone may make better use of its smaller battery, outlasting the S8+ in use testing.

Step 8
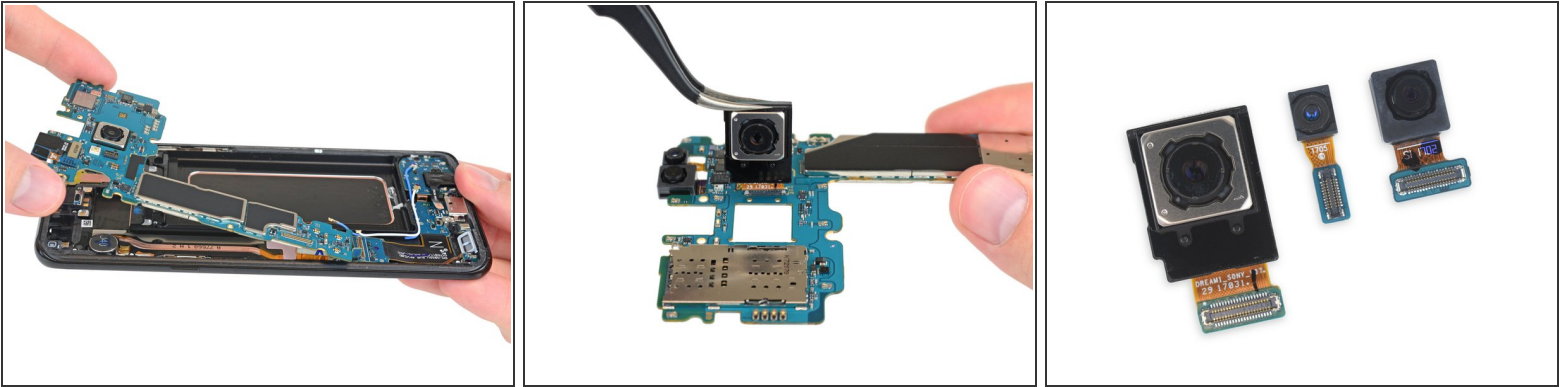
- We pop out the action-packed motherboard and start plucking off cameras.

- The "Hero" Sony of old has been traded in for the "Dream1" Sony in the rear-facing/main camera. Labeling variations aside though, this purports to be the same camera hardware as in the S7/S7 Edge—Samsung has refined the software, nothing more.

- Next we have the front-facing camera and another iris scanning camera, previously seen in the Note7.

Step 9
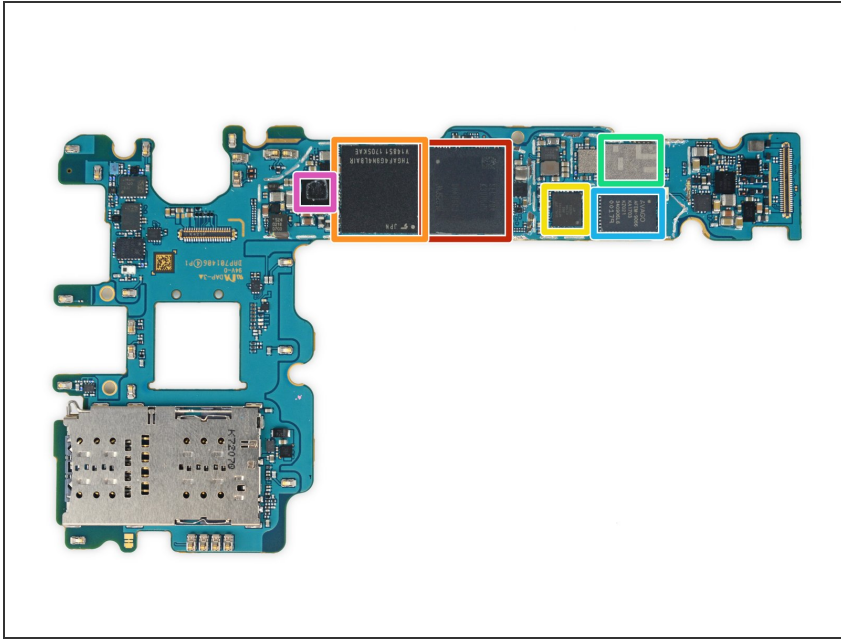
- We push the cameras off to the side in order to pore over this motherboard's silicon. Our findings include:

  - Samsung K3UH5H50MM-NGCJ 4 GB LPDDR4 RAM layered over the MSM8998 Snapdragon 835

  - Toshiba THGAF4G9N4LBAIR 64 GB UFS (NAND flash + controller)

  - Qualcomm Aqstic WCD9341 audio codec

  - Skyworks 78160-11

  - Avago AFEM-9066

  - Silicon Mitus SM5720 Interface PMIC

Step 10
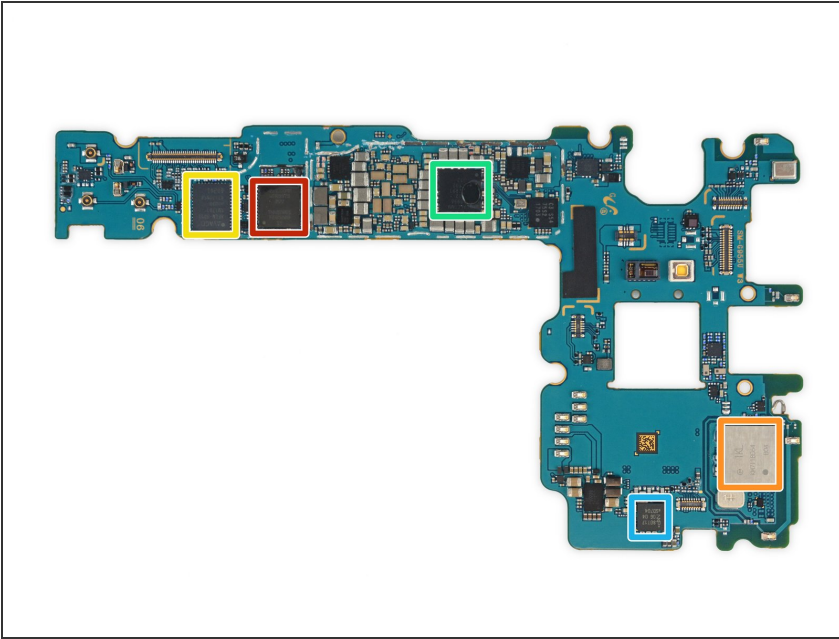
- And on the reverse side:
  - Qualcomm [WTR5975](#) RF transceiver
  - Murata KM7118064 Wi-Fi module
  - Avago AFEM-9053
  - Qualcomm PM8998 (similar to [PM8920](#))
  - NXP 80T71 NFC controller

Step 11
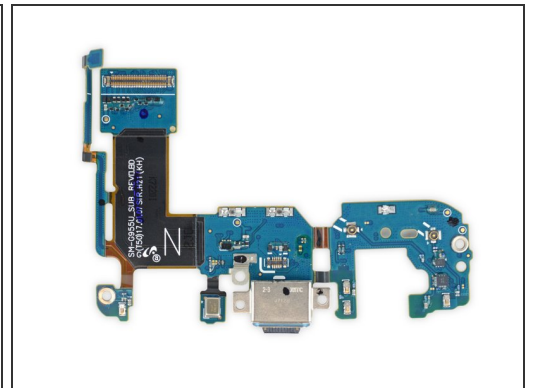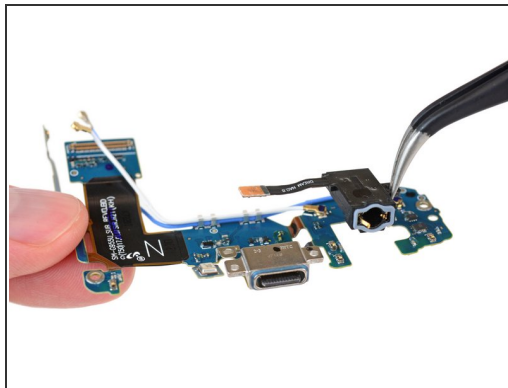
- We extract the I/O daughterboard. There's lots of ingress proofing in evidence here, including the speaker grille surround and the tiny seals on the USB Type-C connector and headphone jack—all part of that IP68 rating.

- The headphone jack itself remains a modular affair—good news for repairability, as this is a high-wear component.

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Step 12

- After a peek at the heat pipe and contact pad button cables, we extract a few more bits from the chassis.

- Out comes ye olde vibrator motor.

- Also the nifty sensor array (with moisture indicator):

  - RGB LED (probably)

  - IR emitter (for the iris scanning camera, maybe)

  - Rangefinder (probably) for dimming the screen during calls.

Step 13

- On a hunt for the mysterious home not-button, we dig into the display despite previous... difficulties.

- Luckily this fused display/digitizer peels up from its frame with a decent struggle, but no damage.

- Hoping to find some hidden detail under the display cabling, we peel it up and find—zilch. No model info and no visible pressure sensor. Better luck next time.

Step 14

- That's it for the S8+. If you're still hungry for more teardown, warp on over to our analysis of the standard Galaxy S8.

- Meanwhile, it's time to give this phone a score.

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Step 15 — Final Thoughts

- The Samsung Galaxy S8+ earns a **4 out of 10** on our repairability scale (10 is the easiest to repair):

  - Many components are modular and can be replaced independently.

  - The battery *can* be replaced, but tough adhesive and a glued-on rear panel make it unnecessarily difficult.

  - Front and back glass make for double the crackability, and strong adhesive on both makes it tough to access the internals for any repair.

  - Because of the curved screen, replacing the front glass without destroying the display is extremely difficult.

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