



# iPhone 5c Teardown

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# INTRODUCTION

The tornado of new Apple devices has taken us over the rainbow, and we have landed in the world of technicolor. We now "c" the light, but what will we "c" inside? Only tools, time, and tenacity will tell.

We know you are as anxious as we are to find out exactly what the "c" means. Here at iFixit, we like to answer the hard questions in life: "Why is it called the c? Why can't Apple name devices in a way that makes sense? What will the insides be like? What **does** [the fox](#) say?" You asked; we answered. So join us for a colorful taste of the Apple rainbow as we tear down the iPhone 5c.

Color your internet experience by following us on [Instagram](#), [Twitter](#), and [Facebook](#).

[video: <http://youtu.be/4E55-y7s7Ek>]



## TOOLS:

- [64 Bit Driver Kit](#) (1)
  - [iOpener](#) (1)
  - [Spudger](#) (1)
  - [Suction Handle](#) (1)
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## Step 1 — iPhone 5c Teardown



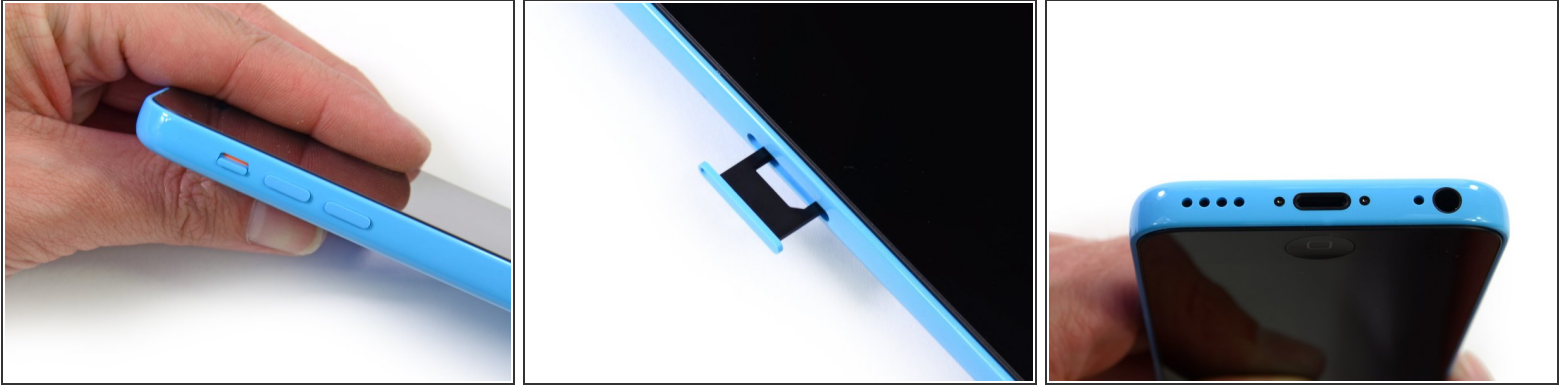
- It's a big day, today. We just finished the [iPhone 5s teardown](#), and now it's time to move on to the iPhone 5c.
- This is the second teardown of today's tear-a-thon, and though this device may be feeling blue, Teardown Team morale is higher than ever! Nothing can bring us down on such a beautiful night—if only the same could be said for [these guys](#).
- We've said it before, but we really want you, our adoring public, to know how grateful we are for our good friends at [MacFixit Australia](#) for letting us use their office in Melbourne for the second teardown. Remember, they stock Mac and iPhone upgrades/accessories.

## Step 2



- With an array of colors to choose from (White, Blue, Pink, Green, and Yellow), we decided upon [blue](#).
- What makes the iPhone 5c different from the iPhone 5s? We're bent on finding out. For starters, the rear case is composed of plastic—looks like our work here is done...
- Technical Specs include:
  - Apple A6 system on a chip (SoC)
  - 4-inch Retina display with 326 ppi
  - 8 megapixel iSight camera
  - 4G LTE connectivity
  - 16 or 32 GB Storage

## Step 3



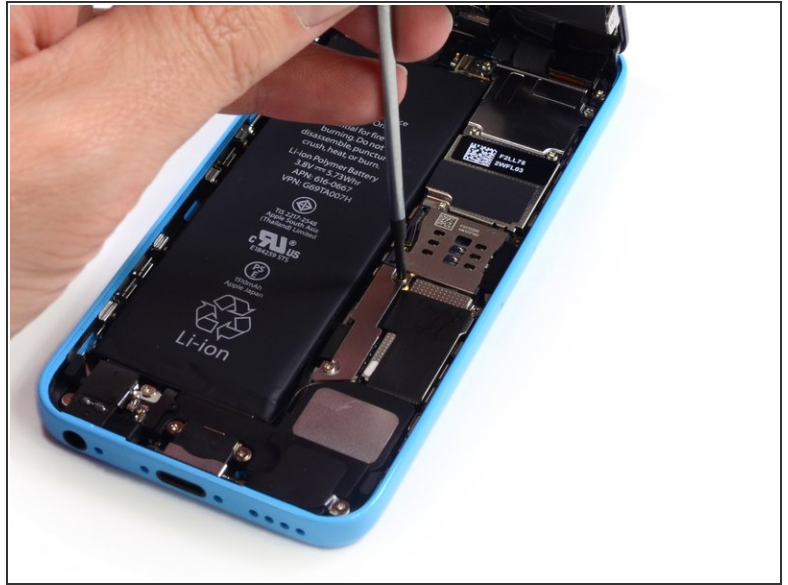
- So what does the "c" really stand for? We've already identified a major difference in "color," but we aren't ready to close the book on this mystery, just yet!
- As promised, every port, button, and slider has had its metal swapped out for plastic.
  - "Cheaper," per chance?
- Not only are these parts made of plastic, they also look a lot more..."childish."
  - The volume buttons are considerably larger, and the 10-hole microphone grille and 16-hole speaker grille have been replaced with 1- and 4-hole grilles, respectively.

## Step 4



- These super tiny Pentalobe screws are slightly different than the ones we found in the iPhone 5 and 5s.
- ⓘ Here's how the Pentalobe screws compare in size to an Australian coin of undetermined value.
  - And if any of our friends down-under know what the denomination is, we would love to know!
  - EDIT: it's a 50 cent coin roughly an inch in diameter for the yanks.

## Step 5



- The front panel assembly is dispatched using a [small suction cup](#). Despite the plastic backing, the display assembly of the 5c fits just as snug as the 5s and 5.
  - ❗ We are beginning to wonder if the "c" stands for "copycat".
- Though it may look like we are performing painful dental procedures on a Smurf, we assure you that removing the 5c screws is as quick and painless as Novocain.

## Step 6



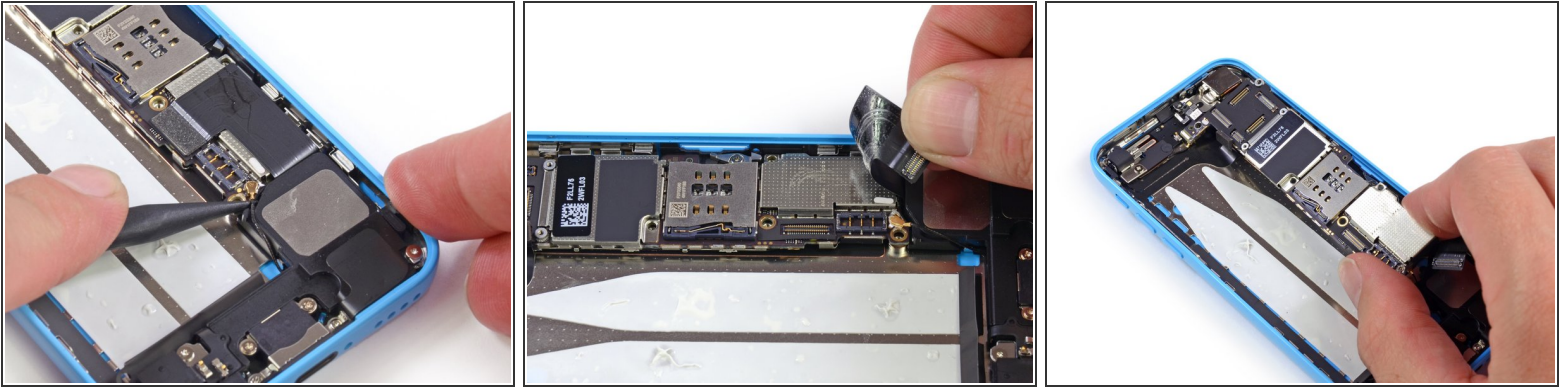
- Removing the battery requires the assistance of our [iOpener](#), a departure from the easy battery replacements of [yester-year](#).
- After a few minutes of heat and some diligent spudgering, we leave our iPhone 5c black and blue in a pile of pieces.
- Too bad we didn't know in advance about these fancy new strips of stretch-release adhesive, or we'd have had a much easier time.

## Step 7



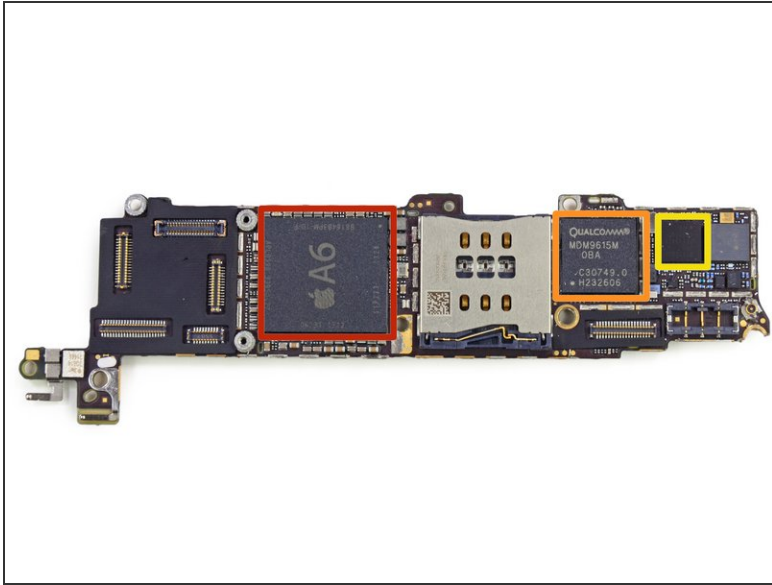
- Checkpoint reached—battery released!
- Though the 5c is essentially a repackaged iPhone 5 (in colored plastic, in case that hadn't been made apparent, yet), the battery *has* been beefed up a bit, clocking in at 3.8 V—5.73 Wh—1510 mAh, compared to the 3.8 V—5.45 Wh—1440 mAh battery of the iPhone 5.
- ① Hopefully, this will address [some issues](#) with battery life brought about by the iOS 7 update.
- Larger battery...Hmmm, could the "c" stand for battery "capacity?" It's a theory; it's probably wrong.

## Step 8



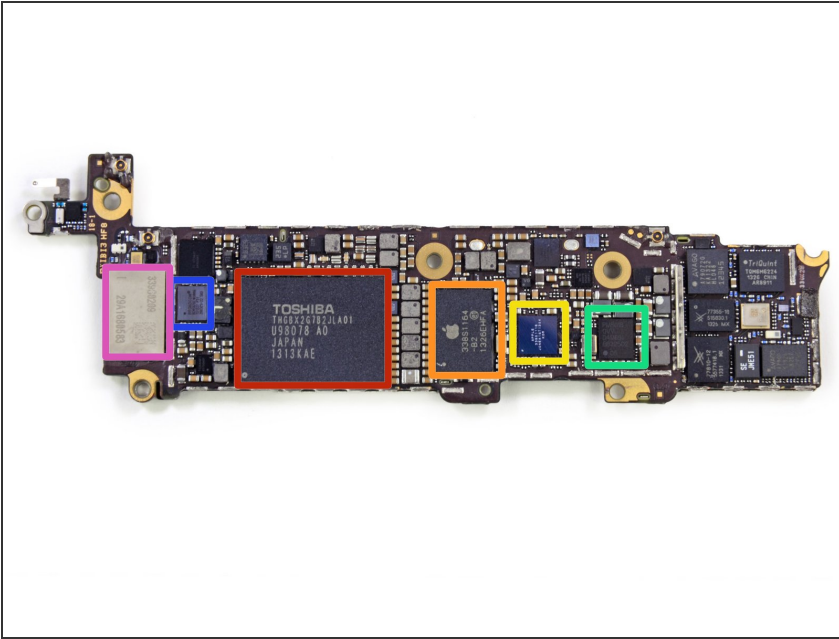
- As we go to remove the antenna connectors with our trusty [spudger](#), we notice something we haven't seen in any recent iPhone: adhered connectors.
- In case our years of teardown tirades were too subtle, we'll reiterate: *we strongly dislike glue*.
- On a scale from 1 to [taking selfies with an iPad](#), strongly adhered devices rank right up there with proprietary screws and people who don't appreciate cheesy puns.
- Annoying adhesive aside, we get to removing the logic board from our little blue iFriend.

## Step 9



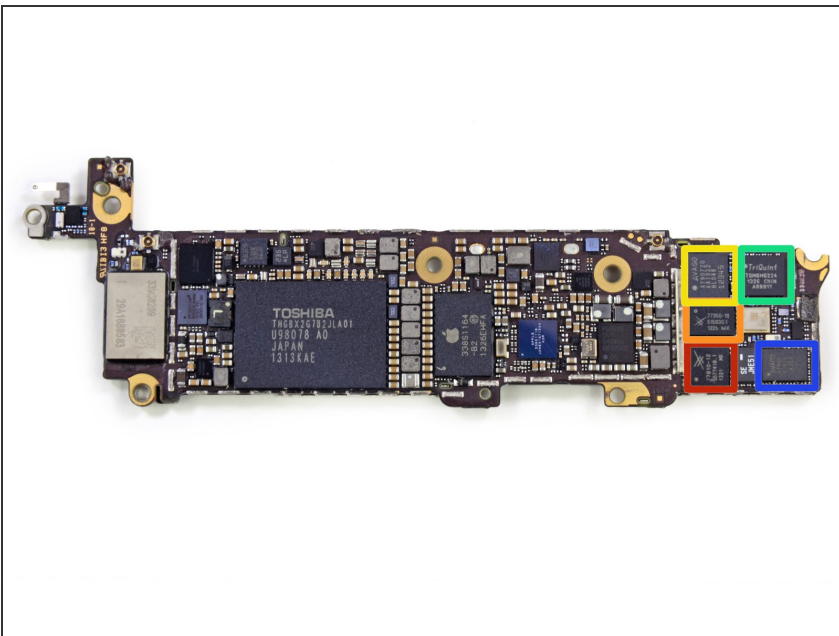
- Front side of the logic board:
  - Apple A6 APL0598 application processor
  - Qualcomm [MDM9615M](#) LTE Modem
  - Qualcomm [WTR1605L](#) LTE/HSPA+/CDMA2K/TDSCDMA/EDGE/GPS transceiver.
- While it's not as flashy as its newer counterpart, we have to admit a certain fondness for the [A6](#).
- The iPhone 5c contains Elpida B8164B3PM-1D-F 8 Gb (1 GB) DDR2 RAM under the A6 system-on-a-chip.

## Step 10



- The back of the logic board:
  - Toshiba THGBX2G7B2JLA01 128 Gb (16 GB) NAND flash
  - Apple 338S1164
  - Apple 338S1116 Cirrus Audio Codec
  - Qualcomm PM8018 RF power management IC
  - Broadcom [BCM5976](#) touchscreen controller
  - Murata 339S0209 (based on the Broadcom [BCM4334](#)) Wi-Fi module.

## Step 11



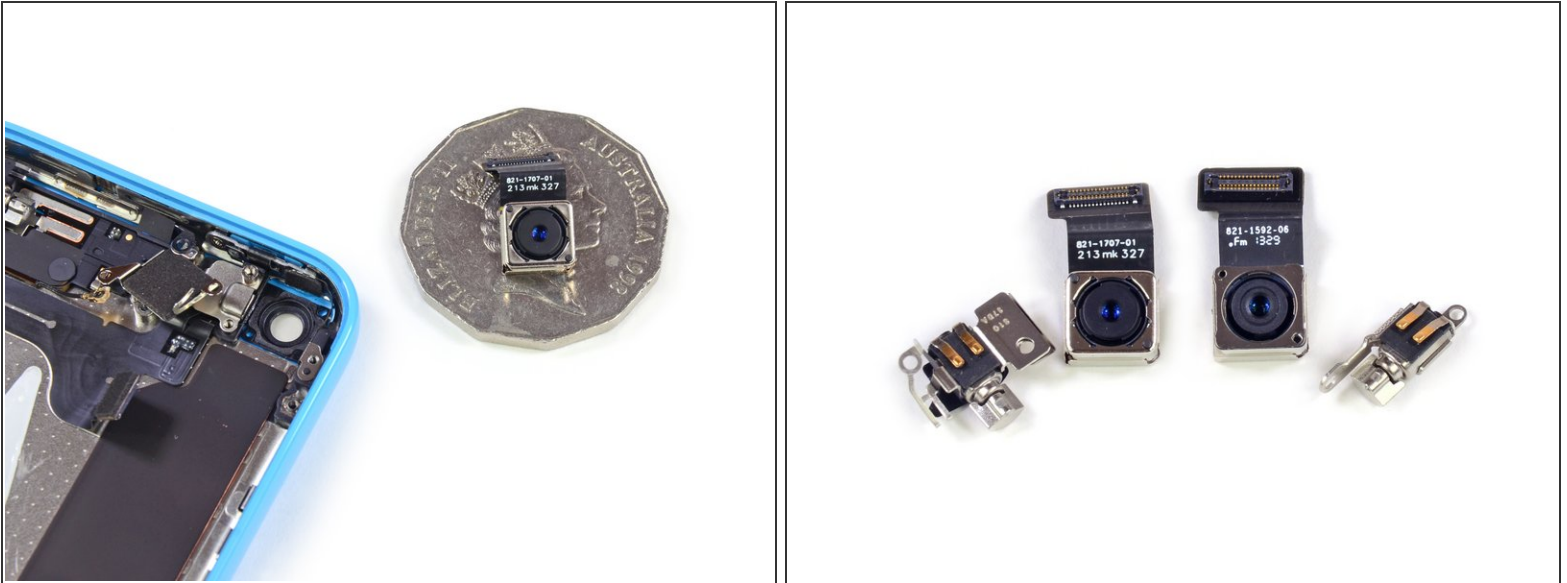
- Backside of the logic board continued:
  - Skyworks 77810-12
  - Skyworks 773550-10
  - Avago A790720
  - TriQuint TQM6M6224
  - Avago A7900

## Step 12



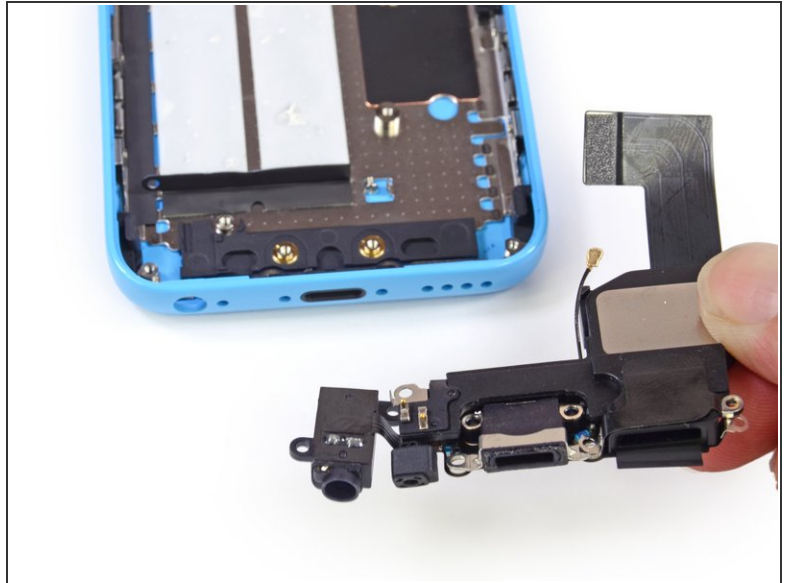
- Since we have both of the new iPhones on the table, we'll take a little comparison tour:
  - ❗ Interestingly enough, the 5s (on the right) sports a slightly lighter display assembly, despite the addition of a fingerprint sensor and luxurious sapphire home button.
  - The 5c's 1510 mAh battery is just a hair slimmer than the [1560 mAh](#) battery of the 5s.
- We've been wondering if there's any chance of cross-compatibility of display assemblies between the 5c and 5s.
  - Alas, the FaceTime/speaker connectors are different sizes, killing hope of that plan.
  - We are sorry to crush any hopes and dreams, but in the mean time, our Googling has revealed the answer to a [question that has been haunting us for weeks](#).

## Step 13



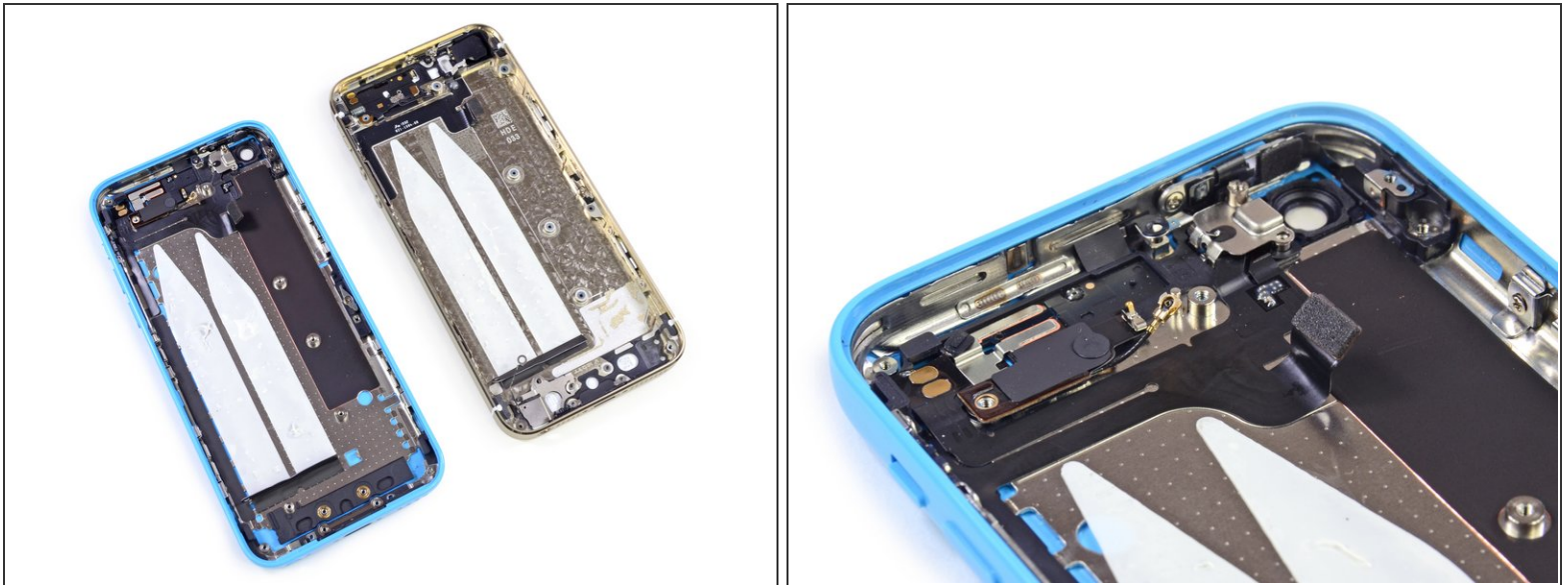
- Flip you for it! Tails or rear-facing camera?
- Comparing the cameras on the iPhone 5c (left) and 5s (right), we see little difference between the two. The one difference between the 8 MP rear-facing cameras is the aperture. The 5c boasts an aperture of f/2.4 compared to the f/2.2 of the 5s.
- Additionally, the vibrator motor assembly in the 5c is actually slightly larger than that of the 5s, despite its similar component design.

## Step 14



- You've seen the internals, but a new question remains...Will it bend?
- We may not have super strength, but we put this case to the muscle test, anyway. The results: this lacquered plastic is as strong and blue as [Captain Planet](#).
  - It's good to know that, though the rear panel is made with plastic to presumably cut costs, Apple did not compromise build quality in the process.
- Next we rip out the 5c's still-beating heart ports.
- Much like internal organs, these ports are connected, so there is no easy way to get at just one of them.
  - Continuing this analogy, our ideal person, much like our ideal device, would be modular [like this](#) (work safe, we promise).

## Step 15

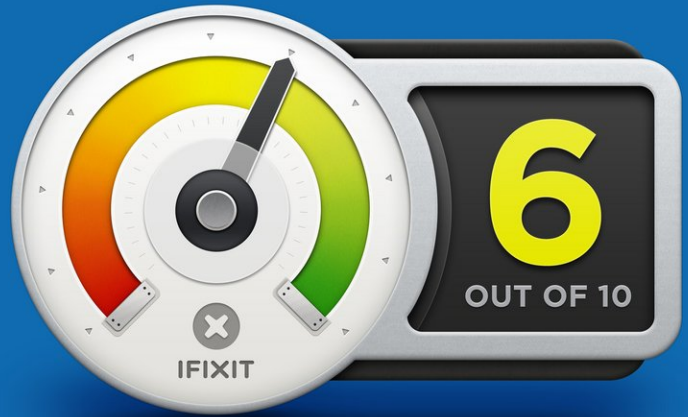


- All we're left with is a serious case of the blues.
- Standing next to its sibling, iPhone 5s, the colorful 5c case looks very similar in structure.
- The most noticeable difference is (unsurprisingly) the material.
  - The less *visibly* noticeable difference is weight: A greater mass of plastic is required to match the strength and durability of a lesser mass of aluminum. The 5c rear case is way heavier: 43.8 g vs 25.9 g for the 5s.
- Nestled within the polycarbonate backing, is a steel frame that serves as an antenna and structural support.
- As we approach the end of our teardown, we think we have solved the mystery of iPhone naming convention: [and here it is.](#)

## Step 16



## REPAIRABILITY SCORE:



- iPhone 5c Repairability: **6 out of 10** (10 is easiest to repair)
- Just like in the iPhone 5, the display assembly is the first component out of the phone, simplifying screen replacements.
- The battery is still fairly easy to access, even though it's not technically "user replaceable."
- Adhesive on the antenna connectors hinder disassembly.
- The battery has lost the 5's convenient pull tab, and gained more resilient adhesive—it now requires heat and prying to remove.
- The iPhone 5c still uses Pentalobe screws on the exterior, making the 5c difficult to open.
- The front glass, digitizer, and LCD are all one component, thereby increasing cost of repair.