



# iPad Air 3 Teardown

Teardown of the iPad Air 3 performed by iFixit on April 2, 2019.

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## INTRODUCTION

A couple weeks ago, Apple surprised us with two new iPad announcements. The first iPad on our teardown table only held some [Mini](#) changes, so we're hoping this one has something a little bigger in store. Join us for a teardown as we jump into the Air!

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### TOOLS:

- [iOpener](#) (1)
  - [Phillips #00 Screwdriver](#) (1)
  - [Suction Handle](#) (1)
  - [iFixit Opening Picks set of 6](#) (1)
  - [Battery Blocker](#) (1)
  - [Tweezers](#) (1)
  - [Spudger](#) (1)
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## Step 1 — iPad Air 3 Teardown



- Before we pop it open and let all the air out, let's check the *official* hardware specs:
  - 10.5-inch LED-backlit Retina True Tone display with 2224 × 1668 resolution (264 ppi)
  - A12 Bionic SoC with embedded M12 motion coprocessor, Neural Engine, and quad-core GPU
  - 8 MP rear camera + 7 MP FaceTime HD camera
  - 802.11a/b/g/n/ac Wi-Fi with dual band (2.4 GHz and 5 GHz) and MIMO support + Bluetooth 5.0
  - Up to 10 hours battery life
  - 64 or 256 GB of on-board storage
- Go ahead and switch to X-ray vision ... oh, you can't? Don't worry—we can't either. Luckily, [Creative Electron](#) has our back.

## Step 2



- This new Air hails from the Pro line, inheriting its dimensions, a Smart connector, and a handful of other features from the [2017 10.5" Pro](#).
- ⓘ It does however feature a new model number: [A2152](#).
- Other differences include: a new, darker *Space Gray* color, the absence of a camera bump, and two speakers compared to the Pro's four. (Landscape stereo sound is a Pro-only feature.)
- Compared to its Mini brother, it's pretty much just ... bigger.

## Step 3



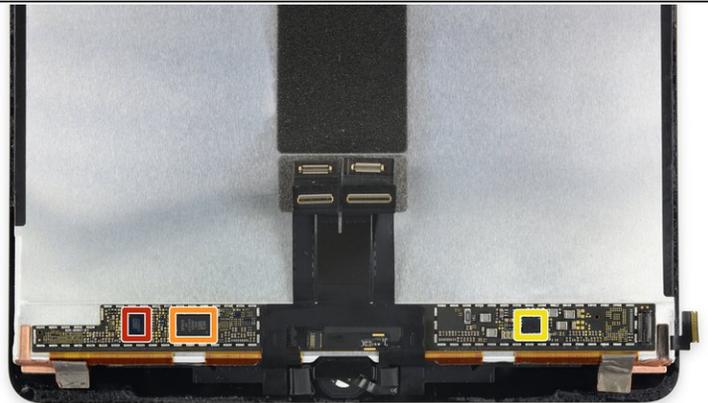
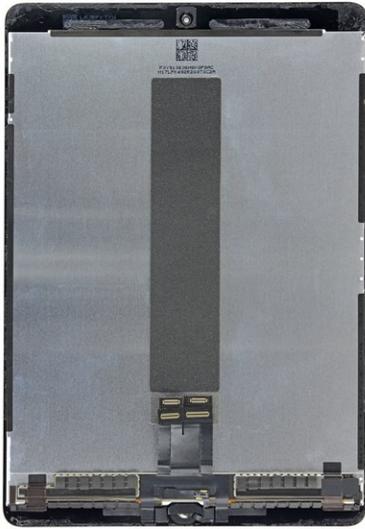
- iPads continue to be tough nuts to crack, so we raise the stakes—or rather, the iOpeners.
  - ★ Since the log cabin method works so well for building fires, maybe it'll help our iOpeners heat up this iPad.
- With their powers combined, plus some suction and slicing, we get into this fused display and start to lever it open.
- Our first peek inside reveals an internal layout that's rather different from [Airs past](#), featuring a central logic board—as seen in certain [Pro iPads](#).

## Step 4



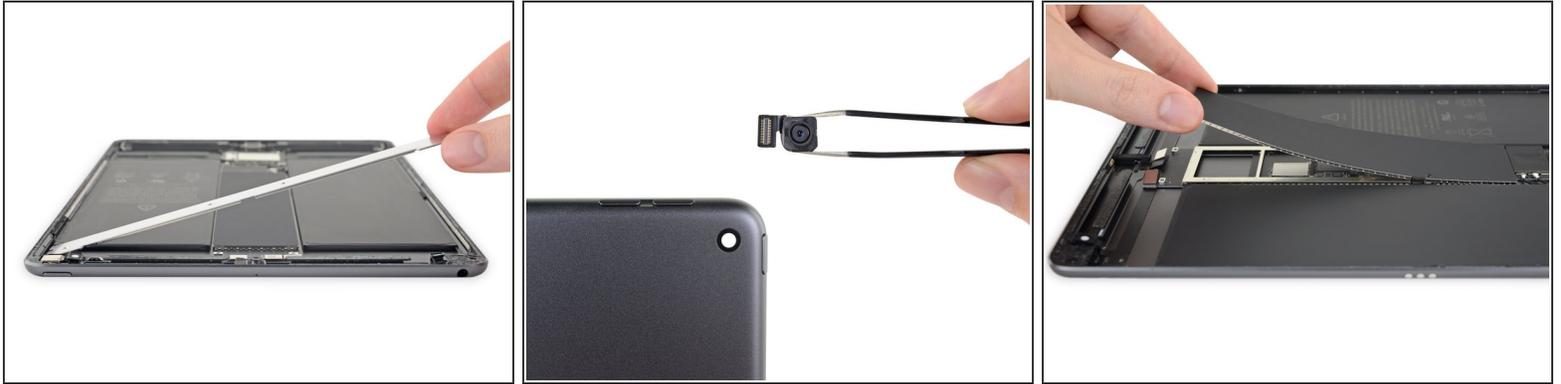
- Safety first! This battery disconnection is definitely not as foolproof as the bracket in the [iPad Mini 5](#).
- ⓘ To protect yourself and your device, the battery should be disconnected as soon as possible. In this case, the connector is trapped under the logic board, so it needs a little help from [a friend](#).
- It feels like the display cables are *just* too short to easily free the cable bracket, making for a thrilling balancing/unscrewing act.
- The dual-celled 30.8 Wh battery is a little bigger than the 30.2 Wh [Apple promised](#), taking after the [10.5" Pro](#), and a big upgrade from the 27.6 Wh battery in the [Air 2](#).
  - If only it had also inherited the highly-coveted stretch-release [adhesive pull tabs](#) ... *sigh*.

## Step 5



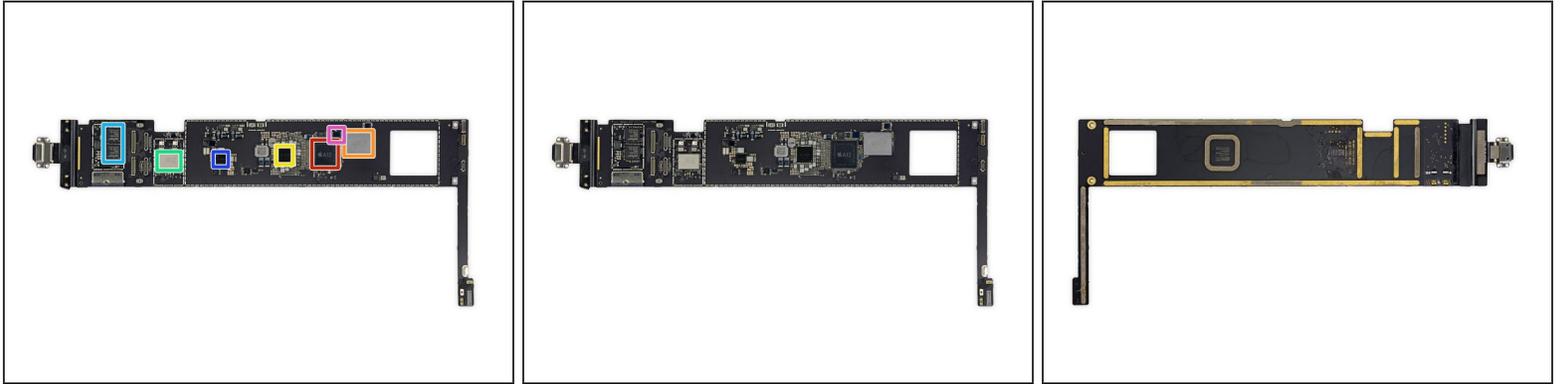
- With the 10.5-in. version of this Air, the updated display gets Apple Pencil support—but only second-class, leaving the new Pencil 2 exclusively to the Pro line.
- ⓘ We also spot some extra adhesive near the top of the screen— *aww*, Apple you shouldn't have. No, seriously.
- Responsible for turning your finger pokes into ones and zeroes, we have:
  - Likely Renesas (formerly Intersil) ISL24882B 8-Ch. TFT-LCD reference voltage generator w/ integrated EEPROM (seen in the [10.5" Pro](#))
  - Parade Technologies DP825 timing controller (previously seen in the [10.5" Pro](#))
  - Texas Instruments [TPS65195](#) level shifter (seen in the [Mini 5](#))
- The size is similar, the Pencil support is similar, and the chips are similar to the 10.5" Pro. However, the Air is missing one notable Pro feature—the cool ProMotion 120 Hz display.

## Step 6



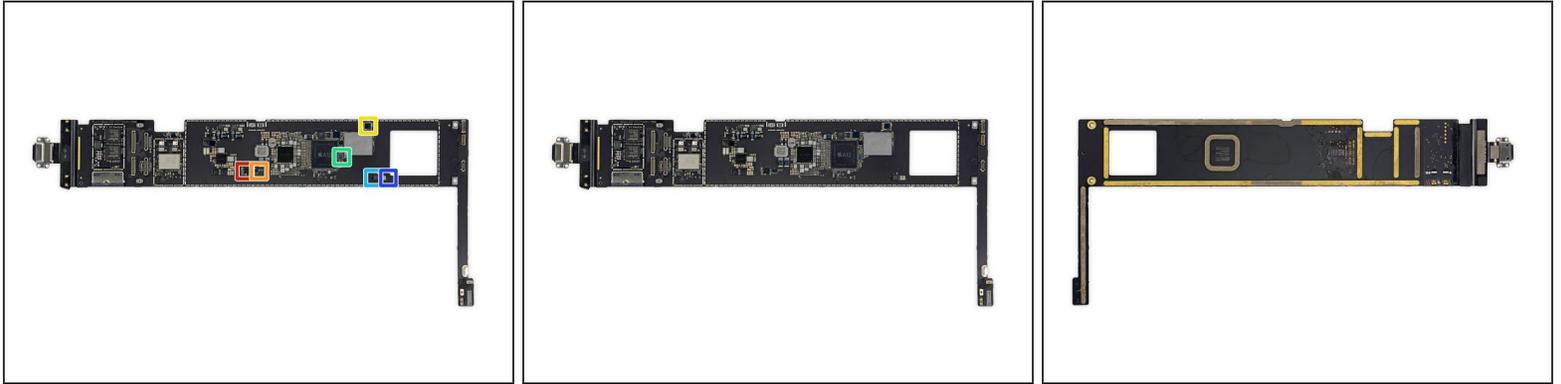
- In place of the 10.5" Pro's surround sound speakers, we find a large metal bracket and two posts built into the case.
  - These little metal mesas likely support the display and hold additional antennas in the LTE models.
- While the Mini's front-facing camera got a significant [upgrade](#), the Air's rear camera holds steady at 8 MP—meaning the Pro's 12 MP still reigns supreme in the 10.5" tablet photo arena.
- We do away with a single screw and peel back a huge shield from the logic board, exposing that sweet silicon underneath.
- ⓘ The single screw here is a tenth of the fastening power we saw on the [10.5" Pro's logic board shield](#).

## Step 7



- Shields dispatched, we've got some ~~air-fried~~ chips for you!
  - Apple [APL1W81](#) A12 Bionic SoC layered over 3 GB SK Hynix [H9HKNNNDBMMUYR](#) LPDDR4X RAM
  - Toshiba TSB3243V40755TWNA1 64 GB NAND flash
  - Apple 343S00281-A0 Power Management
  - Apple/Universal Scientific Industrial USI 339S00551 Wi-Fi/Bluetooth Module (as seen in the [iPhone XS](#))
  - 2x Broadcom [BCM15900B0](#) touch screen controllers
  - Apple 343S00264-A0 power management IC
  - NXP Semiconductor SN100V NFC controller (likely)

## Step 8



- IC identification, continued:
  - NXP Semiconductor CBTL1612A1 Display Port multiplexer
  - Cypress Semiconductor [CYPD2104](#) USB-C port controller
  - Cirrus Logic CS42L83A audio codec
  - Cirrus Logic audio amplifier
  - Bosch Sensortec accelerometer/gyroscope
  - Bosch Sensortec pressure sensor

## Step 9



- Not to sound like a broken record, but your eyes don't deceive you! That Air 3 looks an awful lot like the [10.5" Pro!](#)
  - A central logic board, dual-cell battery, Apple Pencil support, and Smart connector all say "Pro" to us—we're just missing the second set of speakers!
  - The Air 2 and the 10.5" Pro both have pretty miserable repairability scores. Could this tablet break the mold? Scroll down to find out!
- i** And in case you missed it, there was a whole other iPad released only recently. Take a peek at the [iPad Mini 5 teardown here!](#)

## Step 10 — Final Thoughts

### REPAIRABILITY SCORE:



- iPad Air 3 earns a **2 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, but the Lightning port is soldered to the logic board.
  - Battery replacement is possible, but still unnecessarily difficult.
  - Gobs of adhesive hold many parts and cables in place, complicating all repairs.