



Retina MacBook 2017 Teardown

Teardown of the Retina Macbook 2017 performed on June 7, 2017.

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INTRODUCTION

It has been just over a year since Apple unveiled its first update to the [Retina Macbook](#). A year later we hold the ~~same~~ computer second update. Join us as we teardown the 2017 Retina Macbook to try and determine where exactly Apple [thinks differently](#).

If non-draastic updates are your thing, make sure to check out the [2017 Macbook Pro Touch Bar teardown](#).

If teardowns of all shapes and sizes are your thing, make sure to catch em' all by following us on [Instagram](#), [Twitter](#), and [Facebook](#).

TOOLS:

- [P5 Pentalobe Screwdriver Retina MacBook Pro and Air \(1\)](#)
- [Spudger \(1\)](#)
- [iPad Battery Isolation Pick \(1\)](#)
- [Phillips #00 Screwdriver \(1\)](#)
- [T5 Torx Screwdriver \(1\)](#)
- [Tweezers \(1\)](#)
- [T3 Torx Screwdriver \(1\)](#)
- [T8 Torx Screwdriver \(1\)](#)

Step 1 — Retina MacBook 2017 Teardown



- We check out the Space Gray specification bump and see what this year's MacBook has to offer:
 - 12-inch 2304 × 1440 (226 ppi) IPS Retina Display
 - 1.2 GHz dual-core Intel Core m3 processor (Turbo Boost up to 3.0 GHz)
 - 8 GB of 1866 MHz LPDDR3 SDRAM
 - 256 GB PCIe-based SSD
 - Intel HD Graphics 615
 - 802.11ac Wi-Fi and Bluetooth 4.2
 - A single USB-C port and 3.5 mm headphone jack

Step 2

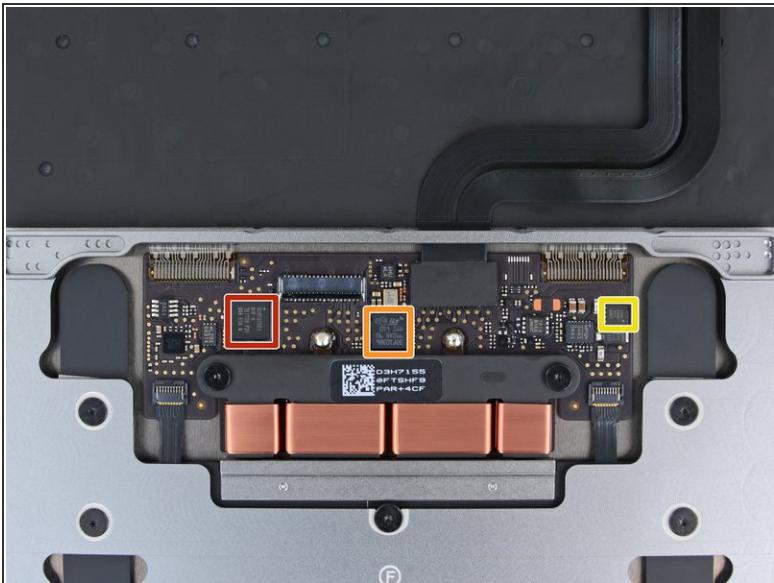


- The larger trackpad. The USB 3 port. The lone microphone jack. Why does this [all feel so familiar?](#)
- The new MacBook has model number A1534. Oh, so does the 2016 Retina MacBook. Don't forget the 2015 MacBook either. *They are all the same...*

 Can we just use last year's teardown and call it a day?

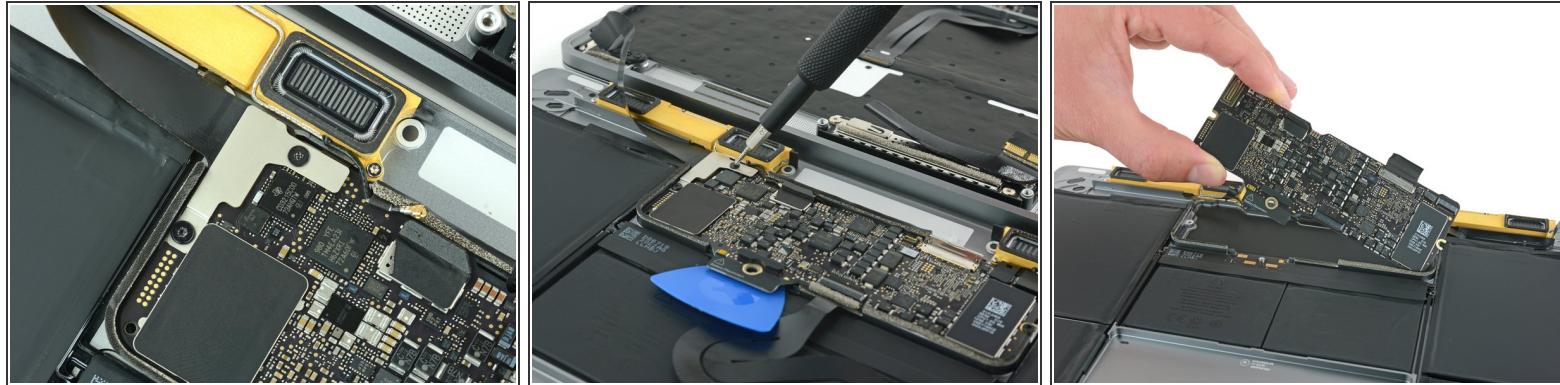
- Okay, so the EMC number is a fresh 3099. Something must be different. The investigation continues!

Step 3



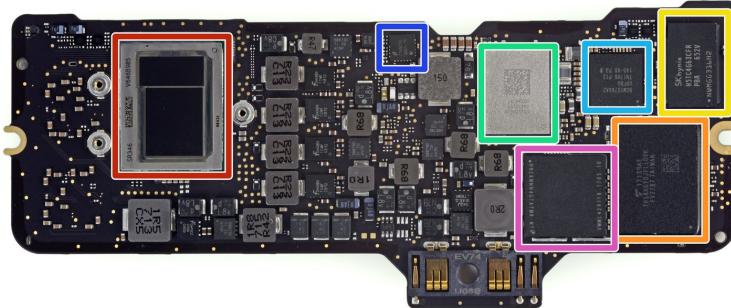
- Removing some Pentalobe screws allows us to get a peek at this MacBook's internals.
- The silicon buried underneath the trackpad doesn't appear to be any different from last year's MacBook. We find three identical IC's:
 - Broadcom [BCM5976](#) Touchscreen Controller
 - STMicroelectronics [32F103](#) ARM Cortex-M3 Microcontroller
 - International Rectifier [IRFH3702](#) Single N-Channel HEXFET Power MOSFET

Step 4



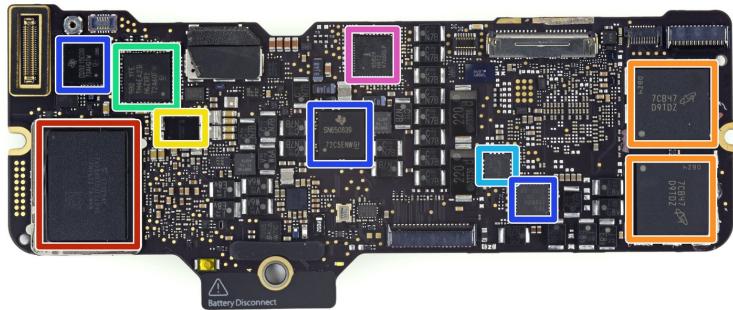
- Last year we noted that Apple moved away from its inclusion of a tri-point screw in the MacBook and replaced it with a Phillips screw.
- Tinkerers and repairers can rejoice! Even though we saw [a barrage of tri-point screws in the iPhone 7](#), we still see the Phillips screw standing strong.
- Although we were armed with our [64 Bit Driver Kit](#) and prepared for any pesky tri-point screws, it is always a relief to see the repair friendly Phillips screw.
- More of the same is always good when it comes to repair. It is not so good when it comes to permanent, soldered components. To the logic board we go!
- ...But not before we [isolate](#) that battery to safely depower the system. Speaking of which, this year's battery exactly matches [last year's](#) 41.41 Wh juice box.

Step 5



- We finally stumble across some subtle differences in the chipset:
 - Intel [SR346](#) Intel Core m3-7Y32 Processor (4M Cache, up to 3.00 GHz)
 - Toshiba TH58XGT0JFLLDVK 128 GB NAND Flash (+ 128 GB on the reverse side for a total of 256 GB)
 - SK Hynix [H5TC4G63CFR](#) 4Gb DDR3 SDRAM
 - Universal Scientific Industrial 339S0250 Wi-Fi Module
 - Broadcom BCM15700A2 (as seen in several other MacBook models, but this version has a notably different form factor)
 - National Semiconductor [48B1-11](#)
 - SK Hynix H9CKNNN4GTATMR-NTH (with SSD controller presumably layered underneath)

Step 6



- And for the opposite side:
 - Toshiba TH58XGT0JFLLDVK 128 GB NAND Flash (+ 128 GB on the reverse side for a total of 256 GB)
 - Micron 7CB47D9TDZ 4 GB 1866 MHz LPDDR3 RAM (x2, for a total of 8 GB)
 - Apple 338S00227-A0
 - Texas Instruments/Stellaris [LM4FS1EH SMC Controller](#) (Replacement codename for TM4EA231)
 - Texas Instruments [TMP513A](#) Thermal/Power Management
 - Texas Instruments SN650839, TPS51980A, and CD3215C00
 - Intersil 95828

Step 7



- [Rumor](#) has it that the second gen butterfly mechanism inherited from the Pro makes this MacBook way more usable—so what's inside?
- Comparing the space gray "new" keyboard to the rose gold MacBook of yesteryear, we can see:
 - The mechanical switch that detects the keystroke is a simpler rounder dome, not the fancy 'x' shape it once was.
 - The plastic butterfly mechanism also accommodates the new switch, swapping to a new, slightly thinner frame.
- While not really a mechanical change, the control and option keys got some new ink. They now mark keyboard shortcuts rather than translating for PC users.

Step 8



- Minimal changes in the MacBook means minimal steps in the teardown! Make sure to check out the [Retina MacBook 2016](#) and [Retina MacBook 2015](#) to see more of these machines' construction.
- If you want some more maximal changes, check out the recent [iMac 4K refresh teardown](#).

Step 9 — Final Thoughts



- Retina Macbook 2016 Repairability Score: **1 out of 10** (10 is the easiest to repair)
 - Apple did not return to tri-point screws, and instead used only Torx and Phillips screws within the computer.
 - The processor, RAM, and flash memory are *still* soldered to the logic board.
 - A large amount of strong adhesive holds the battery assembly to the lower case .
 - The Retina display is a fused unit with no separate, protective glass. If the display is damaged, it'll be arduous and expensive to repair.

 While it's no more repairable than the last two years' editions, it does benefit from sharing a lot of the same parts and [repair procedures](#) as the other Retina MacBooks.