



iPod Touch 1st Generation Teardown

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INTRODUCTION

We disassembled this iPod on September 14, 2007.



TOOLS:

- [Metal Spudger](#) (1)
 - [Phillips #00 Screwdriver](#) (1)
 - [Spudger](#) (1)
-

Step 1 — iPod Touch 1st Generation Teardown



- Behold, the iPod Touch.

Step 2



- Side by side with the iPhone, you can see how similar the devices are.
- ① At 8 mm thick and 4.2 ounces, the iPod Touch is smaller and lighter than the iPhone (11.6 mm and 4.8 ounces).

Step 3



- Inside the box: iPod Touch, headphones, USB cable, dock adapter, and cheap plastic stand.

Step 4



- The new iPod is 0.2 inches (5 mm) shorter than its older cousin.
- The box is also quite a bit smaller. According to Papa Steve, smaller packaging is more environmentally friendly. We're not completely sold on that.

Step 5



- The rear panel is shiny again, just like the new [3rd Gen. iPod Nano](#).

Step 6



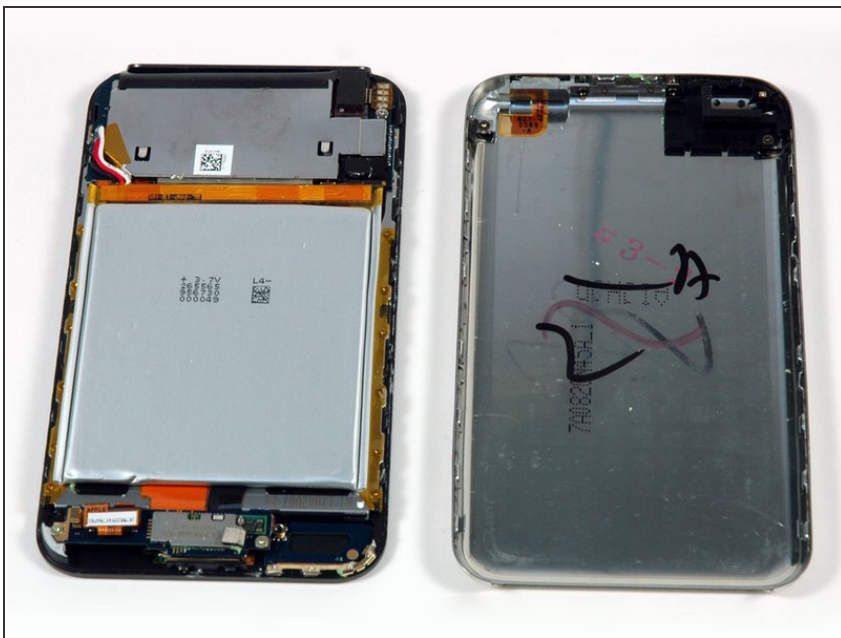
- The official stare down...

Step 7



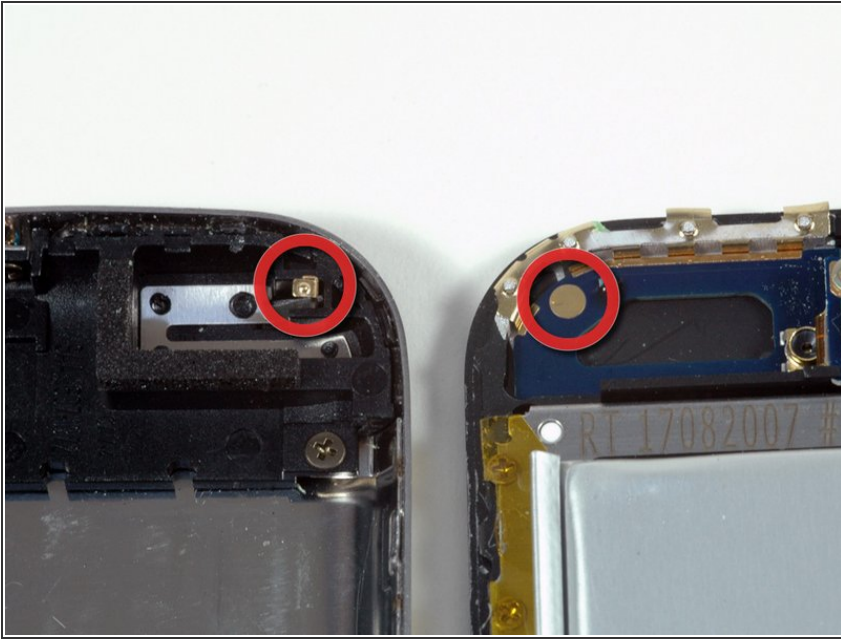
- Hey, the stand works!
- We're working on getting it open. We're being careful and taking our time.

Step 8



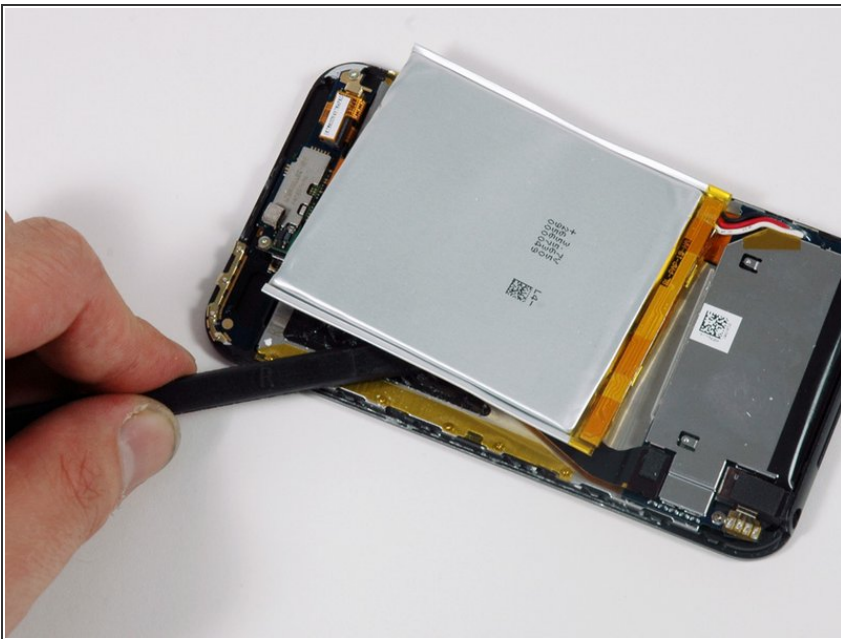
- We got it apart! We used a [metal spudger](#). There are metal tabs along each side of the iPod.
- The iPod Touch doesn't need a large speaker or microphone, so the battery occupies a larger portion of the internals than the iPhone's battery.

Step 9



- ❗ There are no wires connecting the rear panel to the iPod. Apple used an elegant contact connection to make assembly and disassembly easier.
- The circled points are contacts for the WiFi antenna.

Step 10



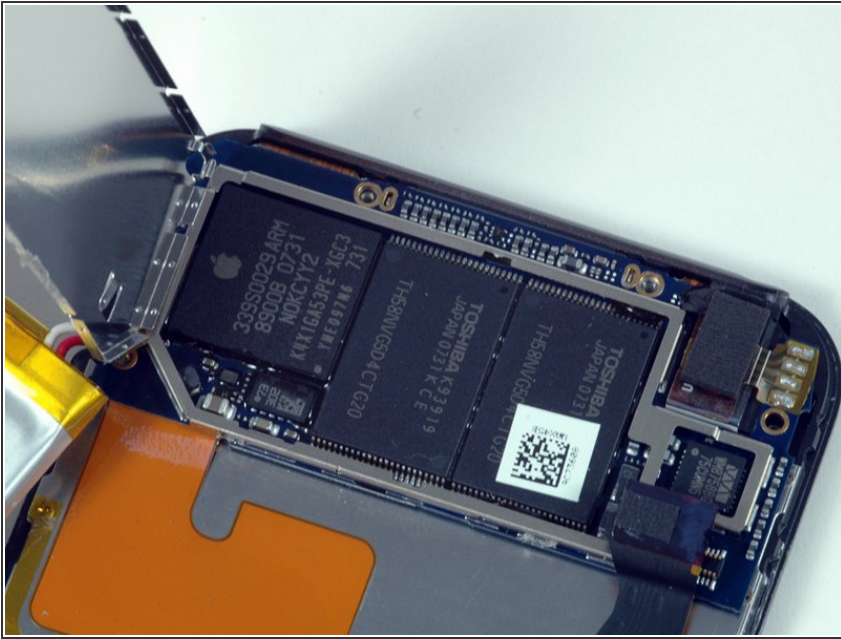
- The large battery is soldered to the logic board, like the iPhone and many of Apple's recent iPods.
- The battery is very flat and thin.

Step 11



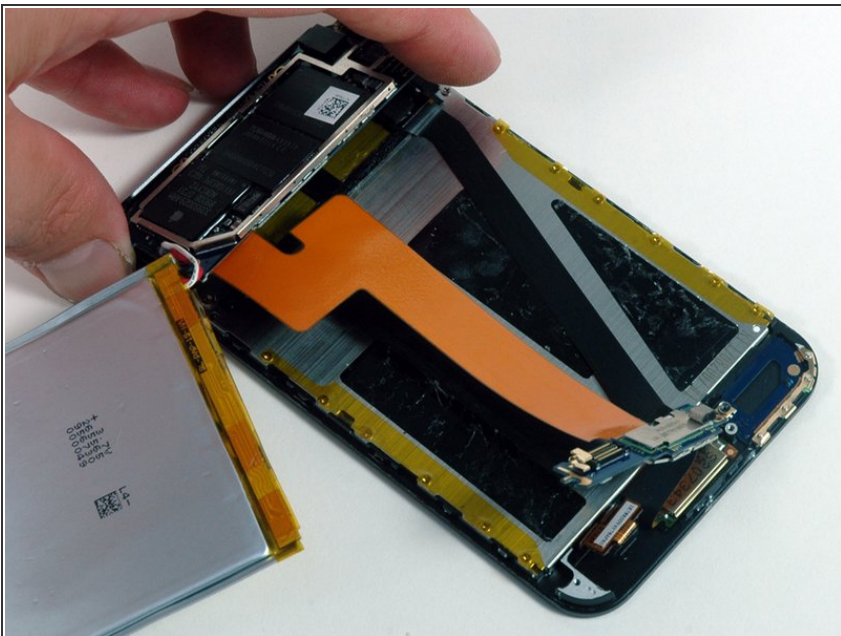
- The huge touch-display lies beneath the battery.
- The logic board is beneath the metal shield at the top of the image (under the 2D barcode).
- ⓘ The Touch battery is 54.0 x 64.1 x 2.8 mm, while the iPhone battery is 43.6 x 50.5 x 5.4 mm. That puts the volume of the Touch battery (9588 mm³) at 81% that of the iPhone (11780 mm³).

Step 12



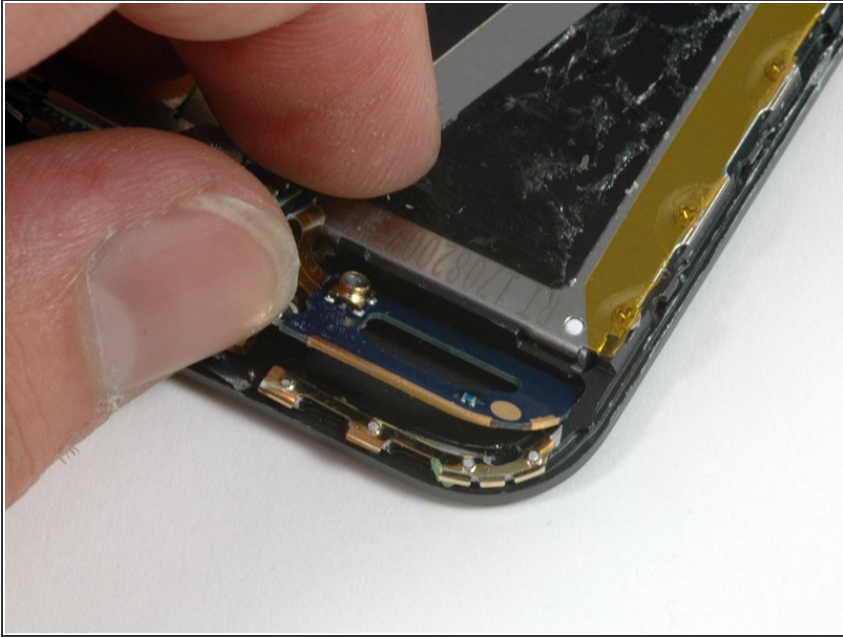
- The top of the logic board. Apple really sandwiched everything in here. This shot is dominated by the Apple ARM chip and the stacked Toshiba (!) flash chips.
- ❗ It will be interesting to see how many of the Touch's NAND Flash chips come from Toshiba. Apple has been predominately using Samsung memory in the iPhone.

Step 13



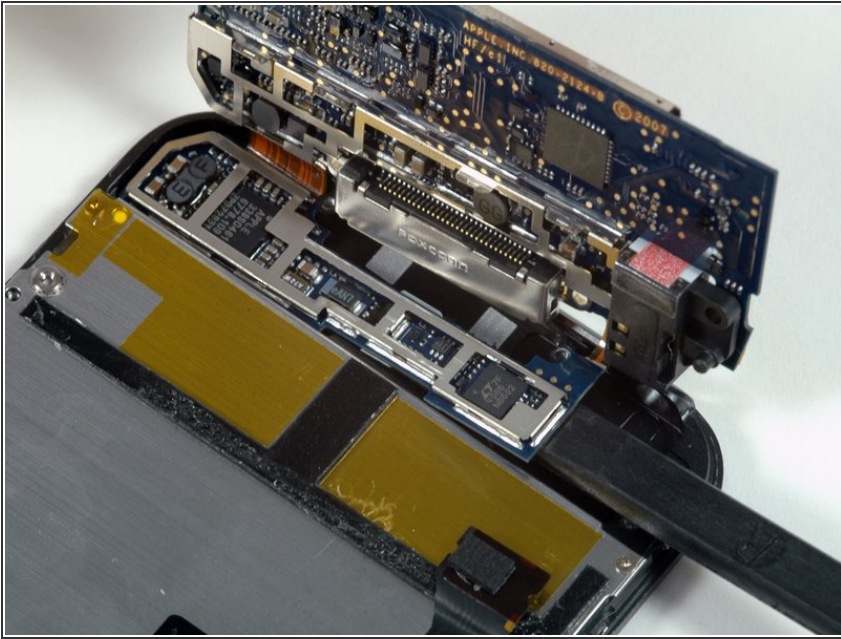
- Lifting the logic board up to see what's beneath.

Step 14



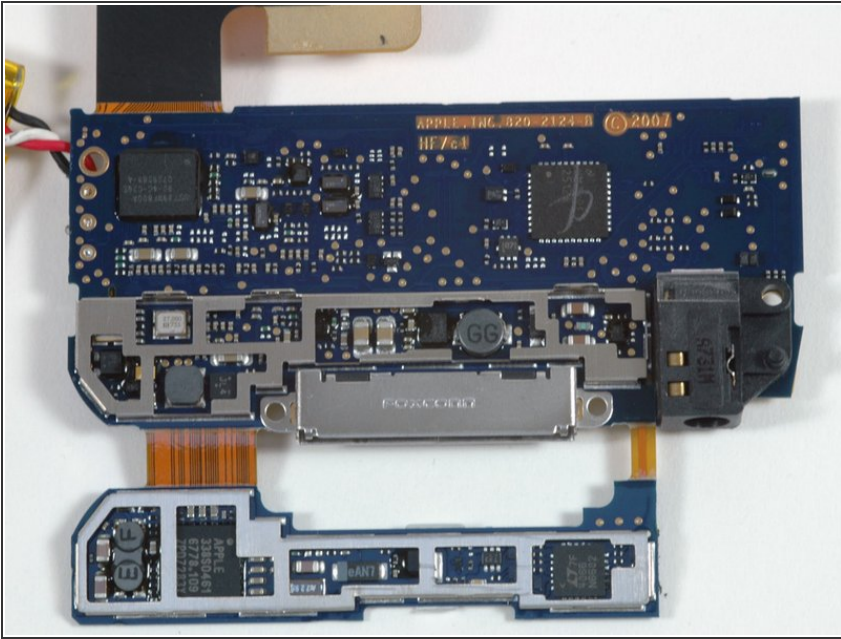
- There is a copper rim on the small antenna connect board that contacts the antenna.

Step 15



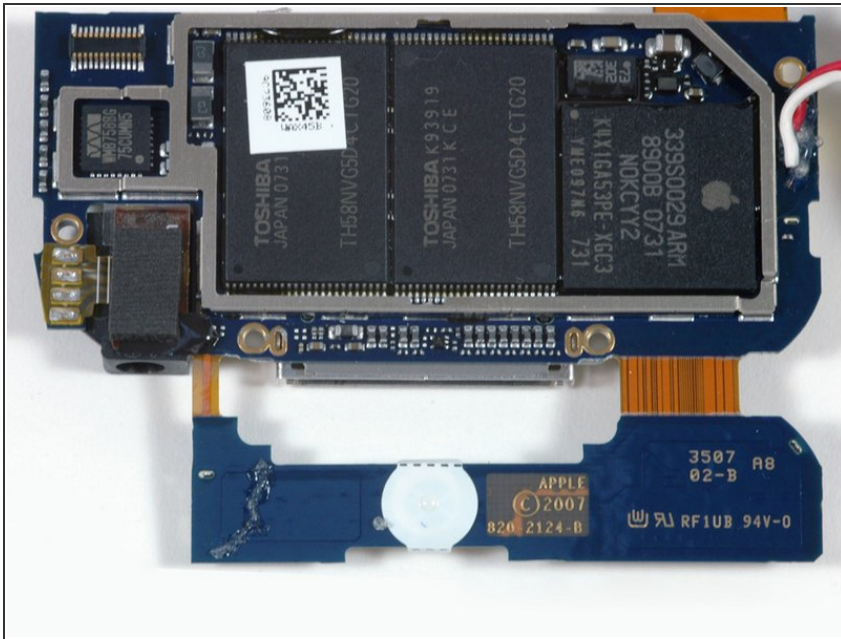
- We rotated the logic board up, and we're using a spudger to pry up the PCB underneath the logic board. This board probably houses the components for processing touch screen input.
- You can clearly see the Foxconn stamp on the dock connector. Apple has used Foxconn extensively to assemble their iPod line.

Step 16



- The bottom of the logic board, with the attached display processing board.
- The ribbon cables are soldered into each board, so you cannot easily replace just one of the boards-- they seem destined to spend their lives chained together.
- You can see the headphone jack on the lower-right side of the logic board. Apple has decided to integrate it into the logic board, which may make repair more difficult.
- Notice the Foxconn logo on the 30-pin connector, indicating Apple's manufacturing partner.

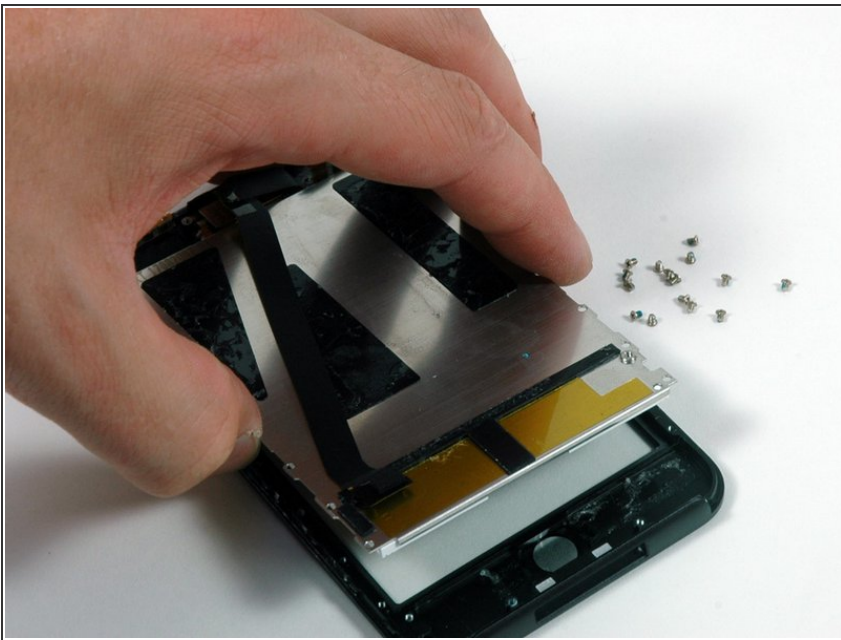
Step 17



- The top of both boards. You can see the Wolfson chip to the left of the flash. This is interesting because the iPod Classic had a Cirrus audio chip, which has caused some initial concerns about audio quality. The iPod touch should not suffer from these problems. The chip is the same as that in the iPhone, WM8758BG.
- The Toshiba flash has part # TH58NVG5D4CTG20. Since we have an 8 GB iPod, each of those stacks has 32 Gb (4 GB) of memory.
- The Apple-branded ARM has chip markings 339S0029ARM 8900B 0731 NOKCYY2, while the on-stack memory has markings K4X1GA53PE-XGC3 YME097N6 731. The K4 indicates this is Samsung memory, so the chip is probably Samsung manufactured just like the iPhone.

- Here's a comparison of Touch and iPhone processor markings. Touch: 339S0029ARM 8900B iPhone: 339S0030ARM 8900B (very similar) Touch: 0731 (manufactured week 31 of 2007) iPhone: 0719 (week 19 of 2007). Touch: NOKCYY2 iPhone: NOD4BZ02. The last number is probably a lot id, which explains why they are so different. What does this mean? The iPod Touch and iPhone processors are very, very similar.

Step 18



- Removing the display from the front bezel. The display attachment is completely different from the iPhone.
- The display is attached to the front of the iPod by 16 Phillips #00 screws. On the iPhone, the display and front bezel are fused together with very strong adhesive which makes it impossible to separate the display from the front glass.
- ⓘ This design will be very nice for repairs, as removing the display is very doable. The LCD just comes right out after you remove the screws.

Step 19



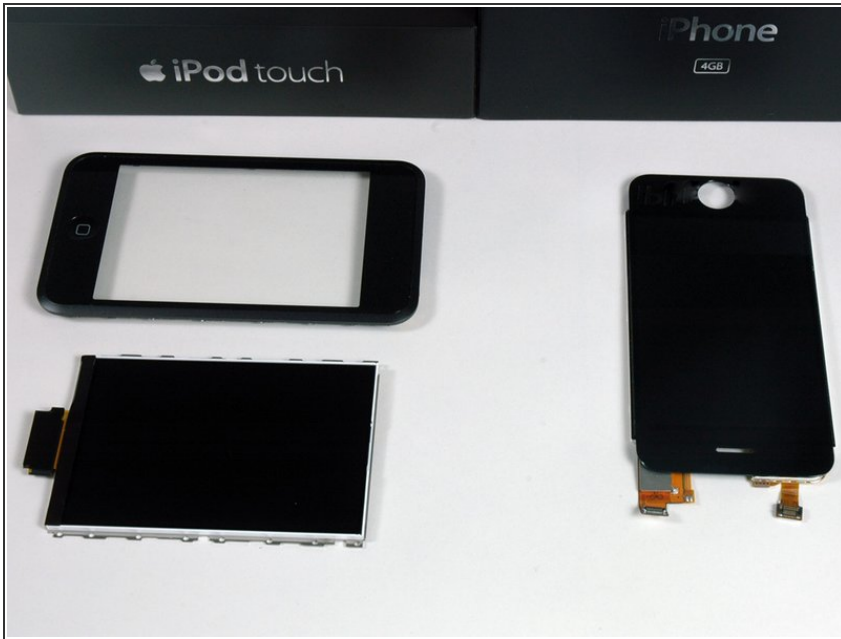
- The touch-screen LCD on the left, and display bezel on the right.

Step 20



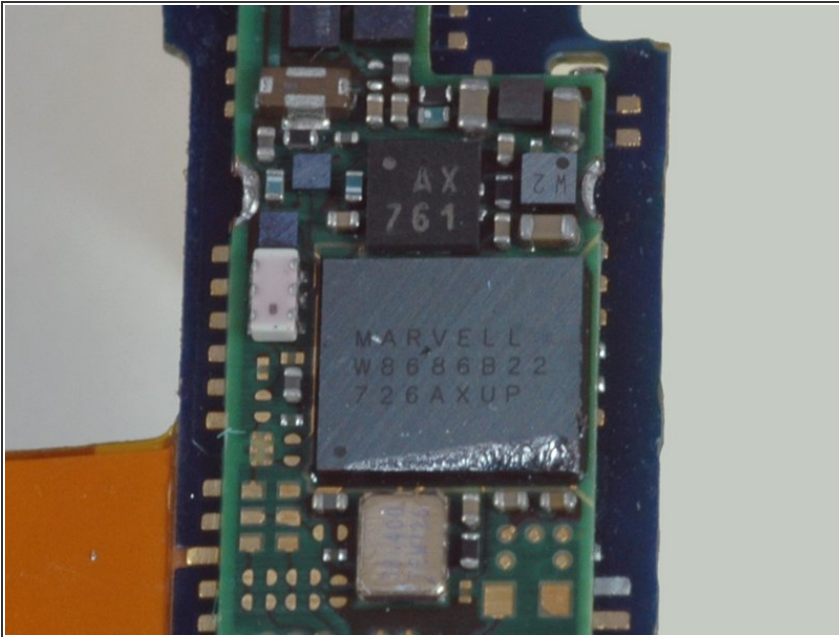
- The iPod touch internals.
- Apple has integrated a lot of components into the logic board assembly on this iPod. This iPod sports only five main parts, held together by lots of tabs, adhesive, and 22 screws.

Step 21



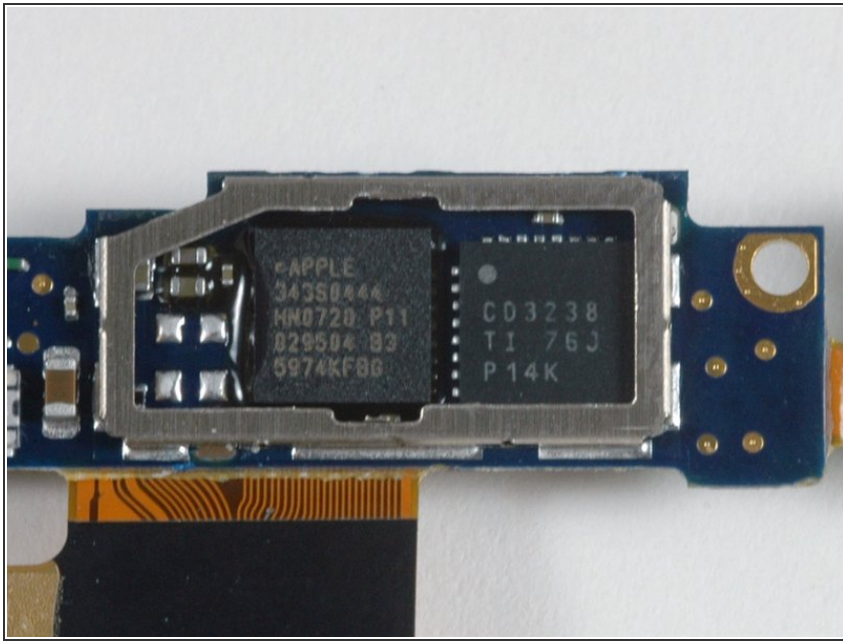
- Left: iPod Touch front bezel and LCD. Right: iPhone LCD and integrated bezel.
- The difference in display assemblies between the iPhone and iPod Touch made us wonder if the Touch uses a glass front like the iPhone. After seeing no official word from Apple, we resorted to a scratch test. We used a key to scratch the front of an iPod Video, iPod Touch, and iPhone. We're happy to report that the iPod Touch came out completely unscathed, while the iPod Video received a large gouge on its plastic front.

Step 22



- This is a Marvell W8686B22. The Marvell W8686 family is a [802.11a/b/g WLAN](#) system-on-chip. The iPhone has a W8686B13, which is likely a very similar part.
 - We did not find the CSR Bluetooth chip that the iPhone has. However, there are several Apple-branded chips that we didn't identify, so we cannot completely rule out the presence of a Bluetooth chip.
 - From what we are told, a Bluetooth antenna (if it existed) could be [integrated](#) into a PCB like this one, making identification difficult. The 'RF1UB' marking on the back of the board indicates that it's been designed for RF, and probably tested at frequency. So, while we don't see evidence of a Bluetooth antenna, we cannot rule out its existence.
- ⚠ To make it [perfectly](#) clear: We cannot confirm nor deny the presence of Bluetooth in this device.

Step 23



- This is the communications board. The smaller board connected by an orange ribbon at the right connects to the antenna on the rear bezel.

To reassemble your device, follow these instructions in reverse order.