



# iPod Shuffle 4th Generation Teardown

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# INTRODUCTION

This is the first of three iPod teardowns this week! We'll be taking apart the new [iPod Touch](#) and [iPod Nano](#) the moment we get our hands on them. Stay in the loop [on twitter](#) as the week progresses.

In case you missed it, last week we celebrated a major milestone. In addition to enabling Apple repair, we now have [parts](#) and [repair manuals for most game consoles](#)! We decided to celebrate by taking a trip through time and ripping apart five [retro consoles](#):

- [Magnavox Odyssey 100](#) released August 1975
- [RCA Studio II](#) released January 1977
- [Atari 2600](#) released October 1977
- [Nintendo Famicom](#) released July 1983
- [Nintendo Virtual Boy](#) released August 1995

Still want to keep your old Shuffle running? We have complete [iPod Shuffle repair manuals](#) and [parts](#).

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## TOOLS:

[Tweezers](#) (1)

[Phillips #00 Screwdriver](#) (1)

[iFixit Opening Tool](#) (1)

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## Step 1 — iPod Shuffle 4th Generation Teardown



- Apple's latest incarnation of the Shuffle bears little resemblance to its immediate predecessor.
- Although the Shuffle features "new, smaller packaging," it doesn't feature a similarly resized shipping box. Apple could have shipped 30 iPod Shuffles in this box. Literally.
- Its Apple model number is A1373, updated from the previous Shuffle's A1271 designation.

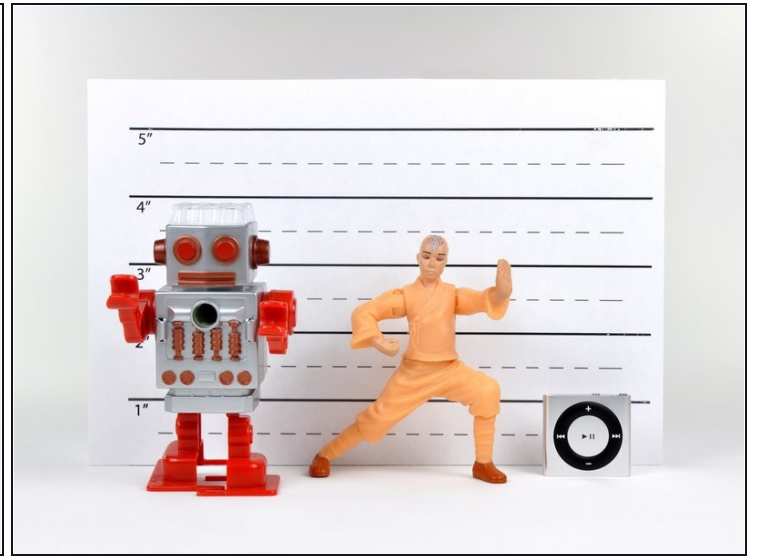
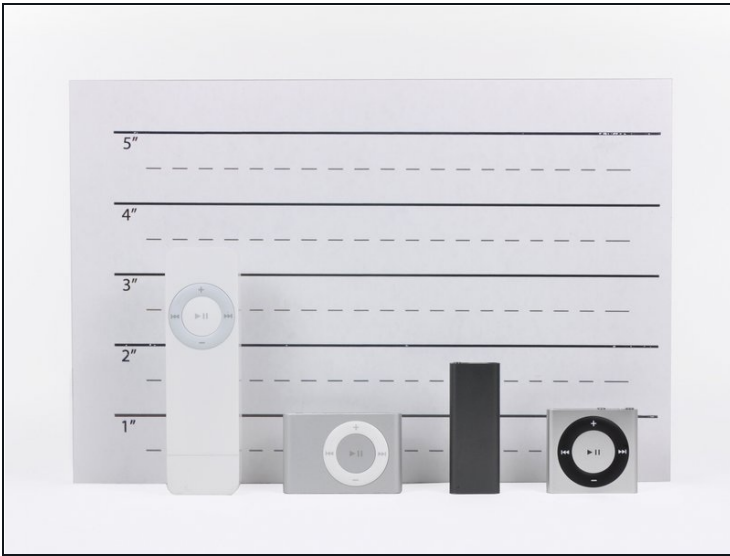
## Step 2



To	Do this	Status light response
Play	Click the Center button once.	● Blinks green once
Pause	Click the Center button once.	● ● ● Blinks green for 30 seconds
Change the volume	Click the Volume Up (+) or Volume Down (-) button to increase or decrease the volume. You hear a tone when you change the volume while iPod shuffle is paused.	● Blinks green for each volume increment ● ● ● Blinks orange three times when the upper or lower volume limit is reached
Go to the next track (or audiobook chapter)	Double-click the Center button.	● Blinks green once
Go to the previous track (or audiobook chapter)	Triple-click the Center button within 6 seconds of the track starting. To restart the current track, triple-click after 6 seconds.	● Blinks green once
Fast-forward	Double-click and hold the Center button.	● Blinks green once
Rewind	Triple-click and hold the Center button.	● Blinks green once
Hear song title and artist names	Click and hold the Center button.	● Blinks green once
Hear playlist menu	Click the Center button until you hear a tone, and then release to hear the playlist menu. When you hear the name of the playlist you want, click to select it. You can click + or - to move quickly through the playlist menu.	● Blinks green once
Exit the playlist menu	Click and hold the Center button.	● Blinks green once

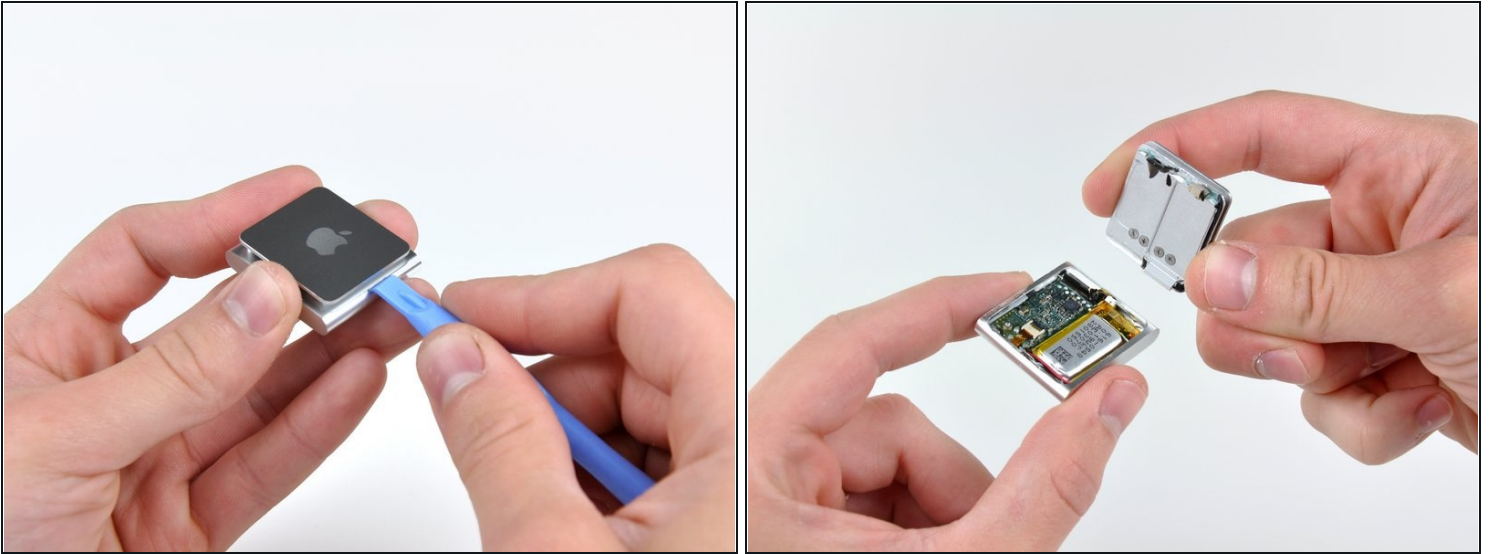
- The 4th Gen Shuffle is priced at a paltry \$49.99! The [original iPod shuffle](#) cost \$99, and had only 512 MB of storage.
- There's a button just for VoiceOver: push once for [artist and song](#), twice for [battery status](#), and hold for [playlist menu](#).
- Apple admitted that people actually like buttons and brought them back for this generation.
- Pshhh! Those of us with 3rd Gen Shuffles just printed out this convenient chart and carried it around for reference.

### Step 3



- Here's the full lineup.
  - There seems to be pattern here: skinny, fat, skinny, fat. It seems like Apple can't decide what shape they like best.
- iPod Shuffle 4th Generation:
  - Height: 1.14"
  - Width: 1.24"
  - Depth: 0.34"
  - Weight: 0.44 oz.
- A bank was robbed last week in [Ba Sing Se](#). Witnesses were given this lineup to identify the perpetrator.

## Step 4



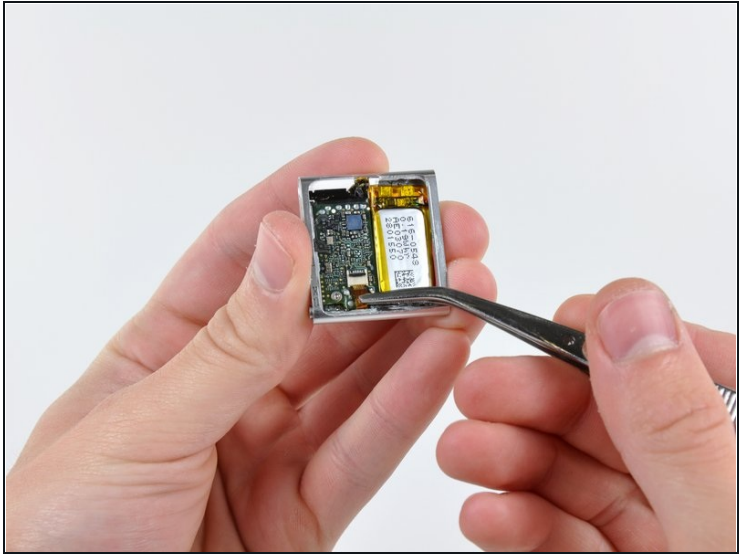
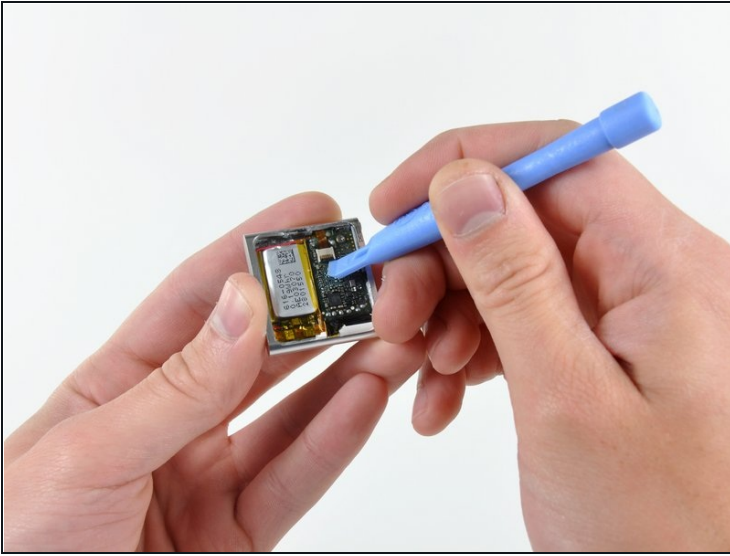
- Although this step makes it look super-simple to open the Shuffle, it's not. It took us a good half hour of prying and heat-gunning to open the little guy.
  - ⓘ Pro tip: Aluminum gets hot when it's heated!

## Step 5



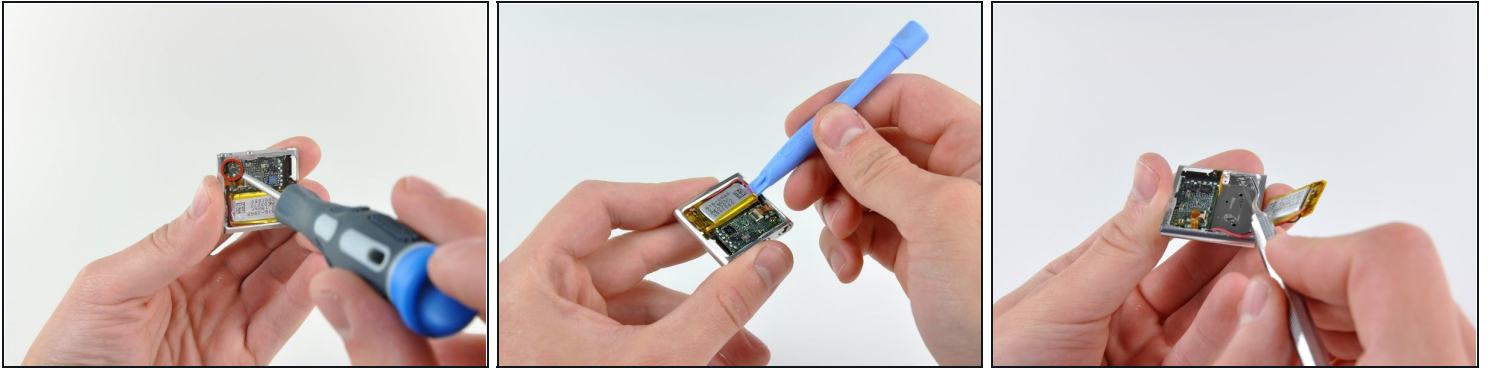
- The exposed internals.
- The logic board is stuffed alongside the battery in the outer case.
- Notice the glue residue along the edges of the opening.
- Apple press-fit *and* glued the back clip onto the body. No wonder it was such a doozy to open!

## Step 6



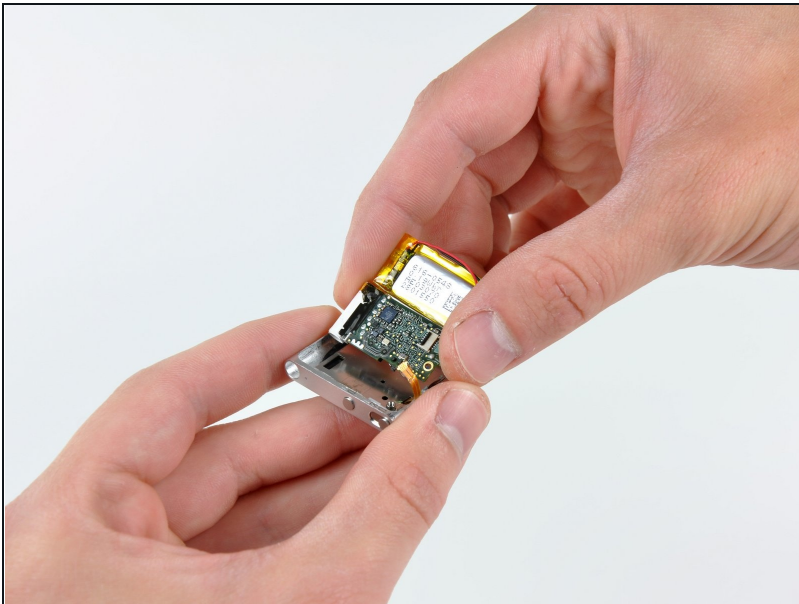
- Even the seemingly simple task of disconnecting the control pad ribbon cable turns out to be quite a chore when the connector is 1/8" wide.
- We have a feeling that as technology advances, we'll need smaller and smaller tools to take devices apart. You won't be able to see our hands in pictures, just little pointy [tweezers](#).
- We already have a microscope ready and waiting in the back room for when that time comes -- but we're not there quite yet (thankfully).

## Step 7



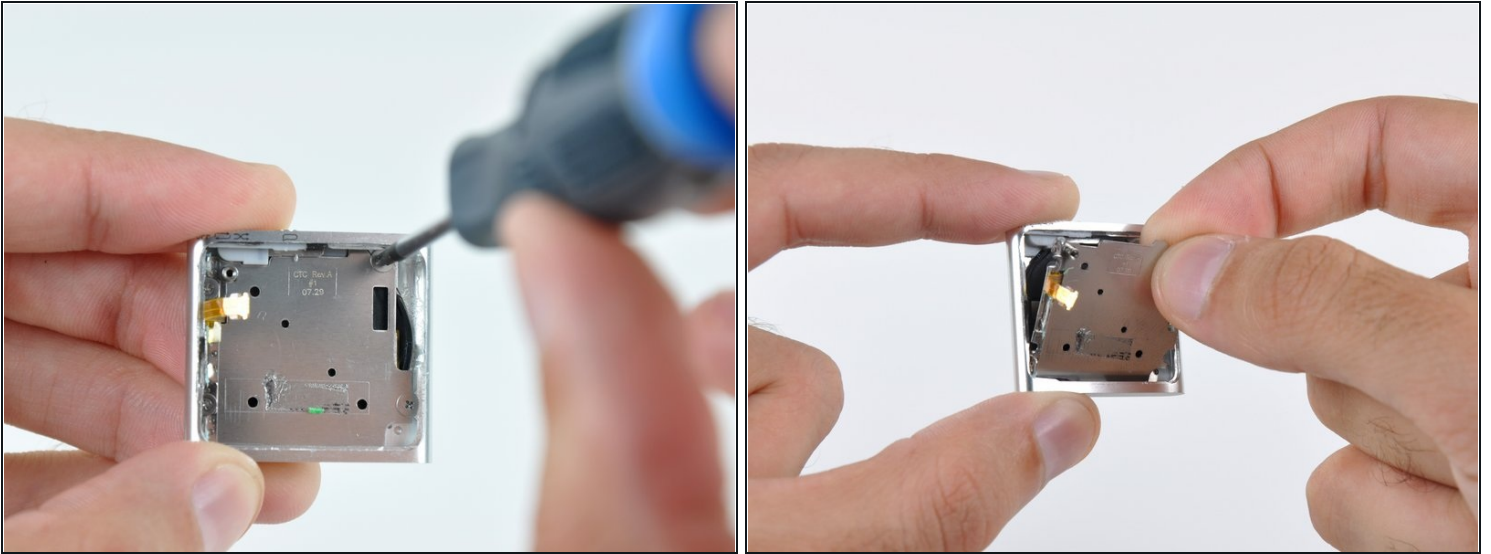
- Our huge #00 screwdriver makes short work of *the* logic board screw.
- A plastic opening tool is needed to lift the battery off the light adhesive holding it to the case.
- After the battery is out, a small plastic logic board retainer must be removed with none other than a dental pick.

## Step 8



- We remove the logic board and battery together from the iPod, because Apple once again chose to solder the battery to the logic board.
- The loss of user-serviceability is the price we pay for small, sleek design.

## Step 9



- Removing the last four screws in the iPod Shuffle, which secure the control pad to the front of the iPod.
- The button and control pads pop out together with a gentle push.

## Step 10



- The control pad comes out of the front case without any additional trouble.

## Step 11



- With a listed capacity of .19 Whr, this small 3.7V lithium-ion battery pumps out 15 hours of audio playback.
- To calculate the capacity in amp-hours, we know  $P(\text{power}) = I(\text{amps}) * V(\text{volts})$ , so  $I = P/V$ . That yields a capacity of about .051 amp-hours, or 51 mAh. To say the least, that's diminutive in the world of batteries.
- It's remarkable how long a battery lasts when it doesn't have to power a backlight.

## Step 12



- APPLE 338S0860 C0AN1021 TWN
- 339S0128 / K9GA608U0E BC80 / FDEF26QV 1025 / 8443 ARM / N2N63MQ1 1031
- Unsurprisingly, the date codes on this package indicate die manufacture dates in late June (1025) and early August 2010 (1031).
- "K9GA6" indicates Samsung 16Gb flash, unlike the Nano and touch which use Toshiba flash.

## Step 13



### REPAIRABILITY SCORE:



- iPod Shuffle 4th Generation Repairability: **2 out of 10** (10 is easiest to repair)
  - Good: The control pad is attached to the logic board via a connector, allowing it to be easily separated.
  - Good: The lack of a screen eliminates a large weak point of other devices, making the Shuffle more resilient to falls. Just don't flush it down the toilet.
  - Bad: You essentially have to break it to open it.
  - Bad: The battery is soldered to the logic board, making replacement that much more difficult.
  - Bad: Apple keeps shrinking connectors. These super-small cable connectors are increasingly difficult to open without breaking them.

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