



Nexus 7 Teardown

The Nexus 7 was dismantled into pieces on July 3, 2012.

Written By: Jake Devincenzi



INTRODUCTION

Google announced the Nexus 7 at their I/O keynote on June 27, 2012. Five days later, we tore one down. Some are calling the Nexus 7 a 'Kindle Fire killer,' but can it stack up to the Fire's impressive 8 out of 10 [repairability score](#)? We just had to find out.

Want to be kept in the loop with the latest teardowns? Follow us on [Twitter](#)!

Want to natively view our repair manuals on your Android device? [Download the iFixit app now!](#)

[video: <http://www.youtube.com/watch?v=xZL1mly7rZ0>]



TOOLS:

- [Phillips #00 Screwdriver](#) (1)
- [iFixit Opening Tools](#) (1)
- [Spudger](#) (1)



PARTS:

- [Google Nexus 7 \(1st Gen\) Midframe](#) (1)
- [Nexus 7 \(1st Gen\) Power & Volume Button Covers](#) (1)

Step 1 — Nexus 7 Teardown



- The Nexus 7 is the latest challenger in the ever-expanding 7-inch tablet arena. Let's see what the folks at Google and Asus packed into this little package.
 - 8, 16, or 32 GB storage
 - 1 GB RAM
 - Quad-core Tegra 3 processor
 - 7" 1280x800 (216 ppi) back-lit IPS display
 - 1.2 megapixel front-facing camera
 - Android 4.1 "Jelly Bean"

Step 2



- The only ports on the exterior of the Nexus 7 lie on its lower edge. Sorry port junkies, micro USB and 3.5 mm audio are the only gateways you'll find here.

Step 3



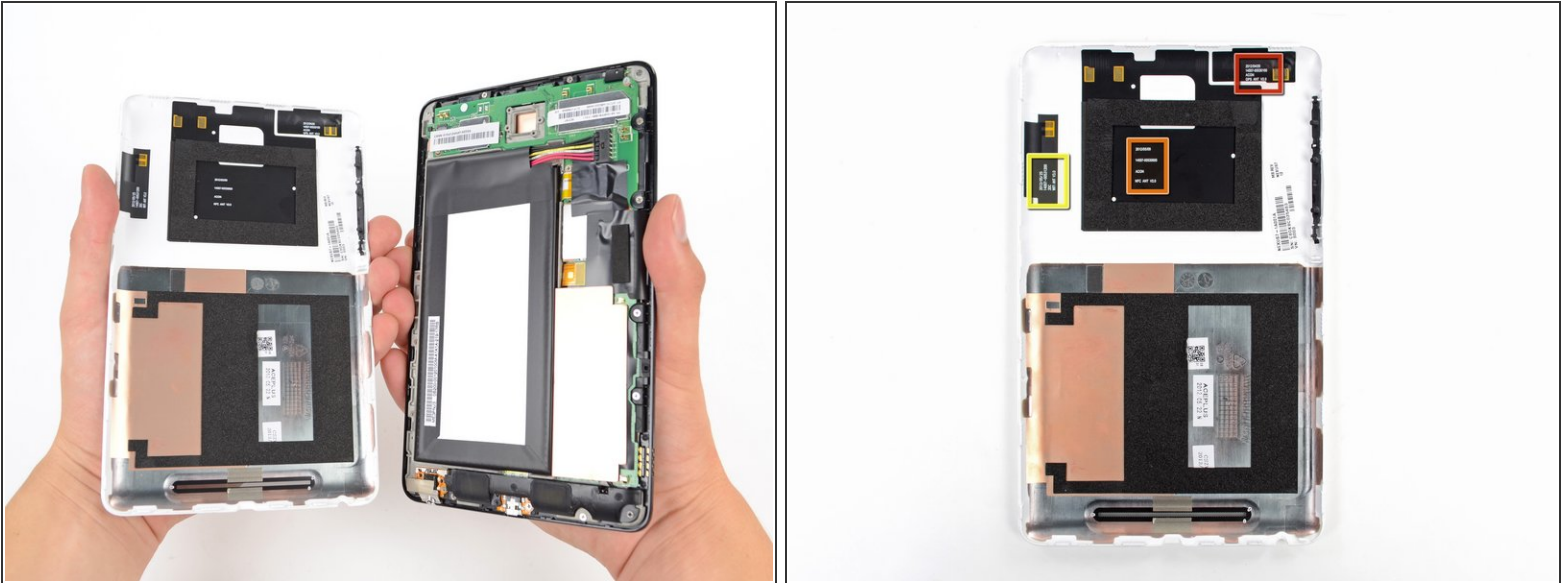
- When we first heard about the Nexus 7, we assumed it was the [secret Pentagon program](#): "A controversial intelligence program...known as Nexus 7, previously undisclosed as a war-zone surveillance effort, it ties together everything from spy radars to fruit prices..."
- Alas, this Nexus 7 is from [the other intelligence agency](#): Google. Even though it's not a secret Pentagon initiative, it does feel pretty stealthy and versatile for \$200.
- The white back of our Nexus proves it was an I/O original. And what's that? It's running an iFixit app? That's right folks; as of today, you can natively view our repair manuals on your Android device. [Download now!](#)

Step 4



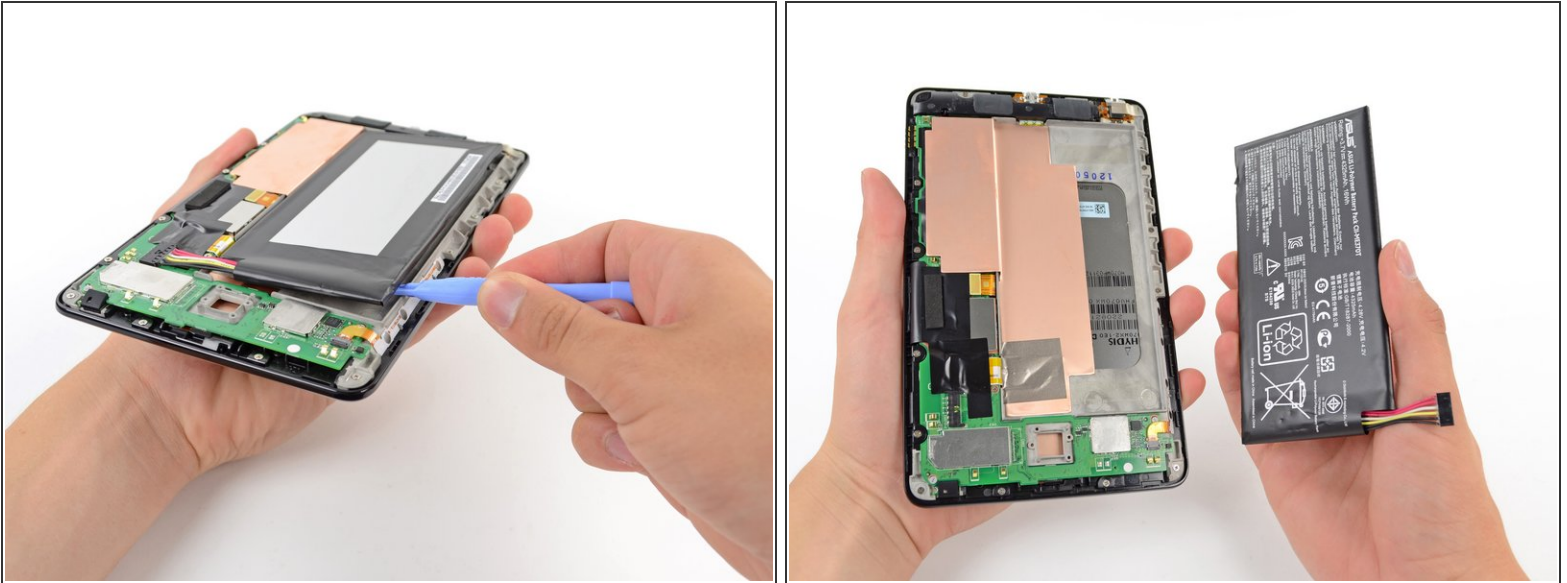
- [Plastic opening tools](#) make cracking the Nexus shell like cutting through [butter](#), thanks to its retaining clips around the perimeter of the device.
- **One millimeter.**
 - That's the difference in thickness between the 9.4 mm [glued iPad](#) and the 10.4 mm retaining-clipped Nexus.
 - That's the difference between being able to open a device and service all of its internals, and not.
 - That's the *negligible* difference between extending the life of your device through repair, as opposed to tossing it in a landfill.
- And most of all, nobody will complain about that one millimeter difference in day-to-day use, but the user-serviceability it brings will make [all the difference](#) when the [device breaks](#).

Step 5



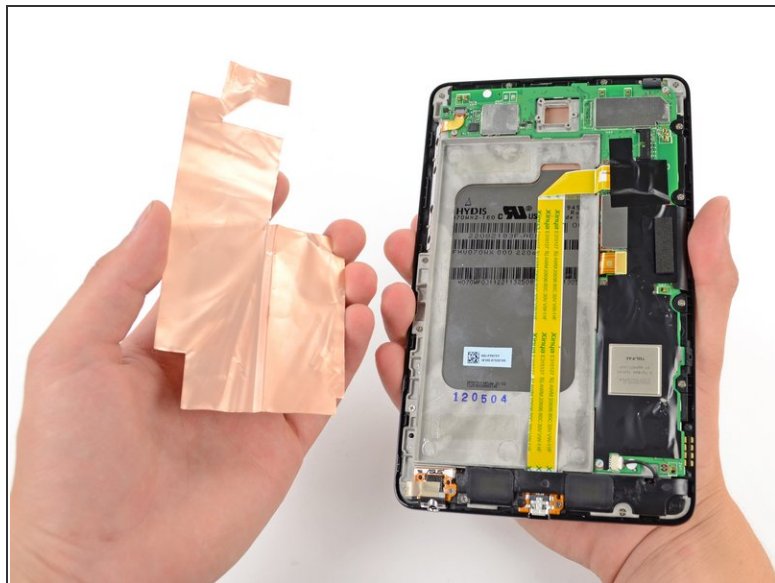
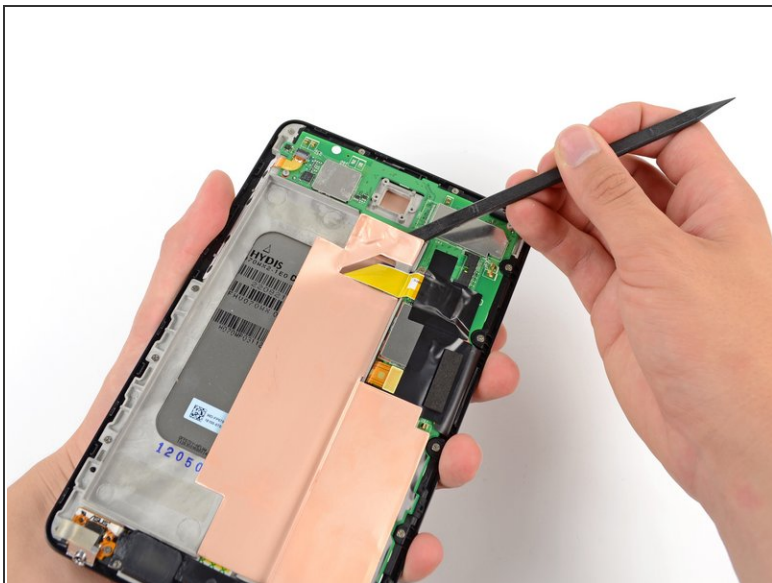
- And so it opens.
- Though the back cover's dark and light layers remind us of something a Stormtrooper would have in his arsenal, we're more interested in the cryptic markings we found:
 - GPS ANT V2.0 2012/04/20
 - NFC ANT V2.0 2012/05/09
 - WIFI ANT V3.0 2012/05/25
- We're purely speculating here, but we think these are antennas that were made somewhere between late April and late May.

Step 6



- The front case assembly has exactly what we always expect inside a tablet: a big battery.
- The Nexus 7 has a 4326 mAh, 16 Wh battery that can last [9:49](#) hours. The Kindle Fire, by comparison, has a 4400 mAh, 16.28 Wh battery -- but only lasts [7:42](#) hours. Go figure.
- For further comparison, this time falls right in between the [batteries found in the 2012 iPad](#) models, which have 9:52 hours for HSPA and 9:37 hours for LTE. Except that the iPad 3 units are *slightly larger* at 42.5 Wh / 11500 mAh.
- Unlike the iPad batteries, this battery was actually quite easy to remove; there was only a small amount of adhesive around the metal frame.

Step 7



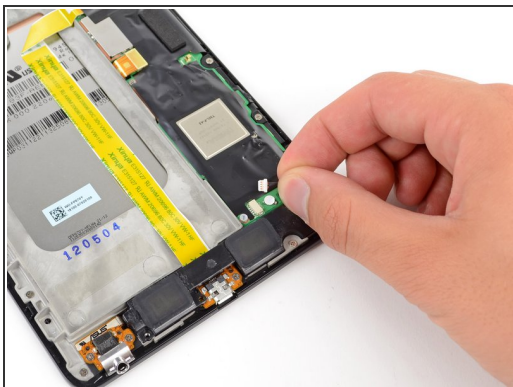
- Our trusty [spudger](#) makes quick work of the copper film found beneath the battery.
- This could be a heat sink since it seems to be made of a copper alloy, possibly copper-tungsten, or copper-molybdenum. However, it is more likely that it's just an EMI shield.
- [Engadget remarks](#) that the Nexus 7 doesn't get "disconcertingly hot," rather "just a little toasty".

Step 8



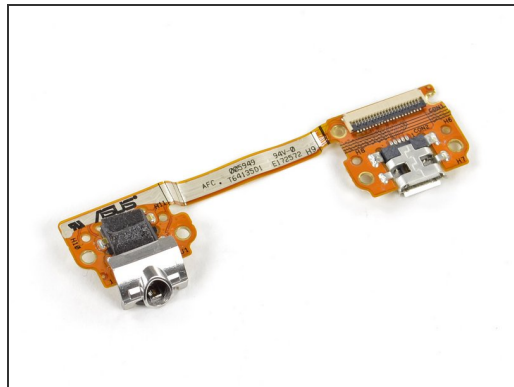
- Next, we used our [driver](#) to remove the Phillips screws holding the speaker assembly in place.
- Full disclosure: we don't just make awesome teardowns—we sell [parts](#). And [tools](#)! Lots and lots of tools.
- Like this [handy-dandy electronics tool kit](#) that we use to take apart the newest gadgets. We assembled the most-used iFixit tools and put them all in one kit for your convenience.
- We sell [Mac parts & upgrades](#), parts for [iPhone screen repair](#), kits for fixing the infamous [Xbox Red Ring of Death](#), and even a product called the [Monster Battery Pack 9000](#).
- **We need your support** to continue building the [free repair manual](#) for everything in the world.

Step 9



- *Pop!* Off comes a connector, and the speaker assembly is free.
- The Nexus 7's speakers might not be quite the caliber of the [Q](#), but there is already talk of [speaker docks](#) to come.
- Although the [official Nexus page](#) says there's a *speaker* in the back, we clearly see a pair of drivers.

Step 10



- Although it looks like caution tape, the I/O cable isn't stopping us from digging in deeper.
- A few more screwdriver twists and the two part I/O set is out.
- The Nexus 7 I/O set houses a standard 3.5mm headphone jack and USB port.

Step 11



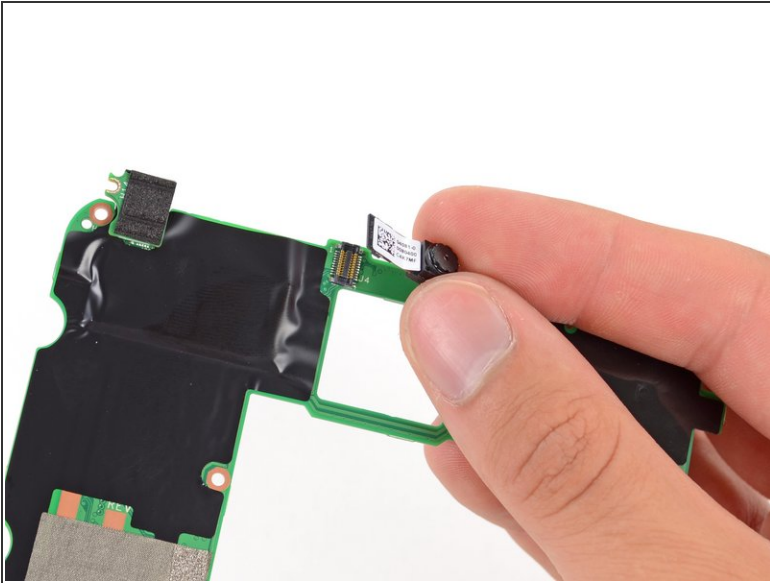
- The L-shaped motherboard is littered with connectors and screws, but nothing too difficult for our [Pro Tech Toolkit](#).
- We are guessing that this number is not the date code on expired milk, but rather a part manufacture date. It reads 12 05 04, indicating a May 4, 2012.

Step 12



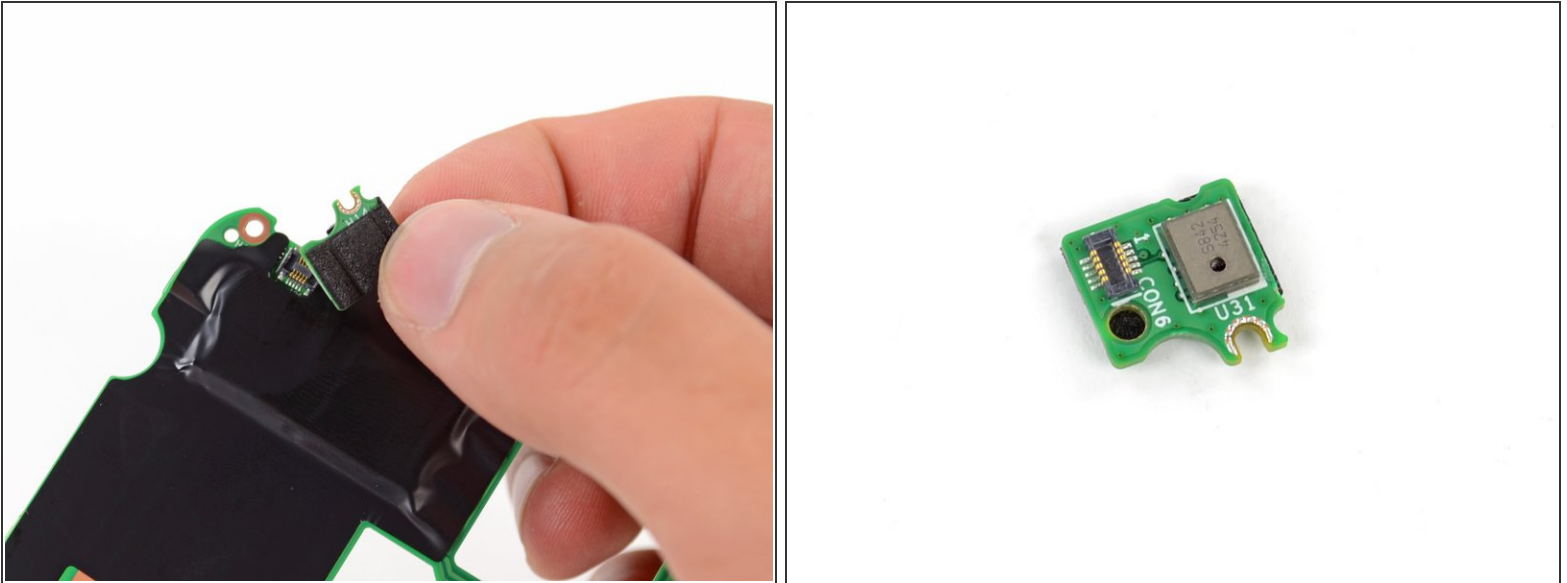
- The Nexus 7 comes stacked with 1 GB of Hynix [H5TC2G83CFR](#) DDR3 RAM, the same model found in the [MacBook Pro with Retina Display](#).
- This isn't the "in case of emergency" kind of seal to break, but we broke it anyway to get the motherboard out.

Step 13



- Out comes the 1.2 MP front-facing camera.
- Much like the [Kindle Fire](#), the Nexus 7 contains no rear-facing camera. It does, however, contain a front-facing one for video chatting.
- Is the absence of a rear-facing camera that big of a deal for a tablet? That depends. Do you want to [look silly](#) taking pictures with it?

Step 14



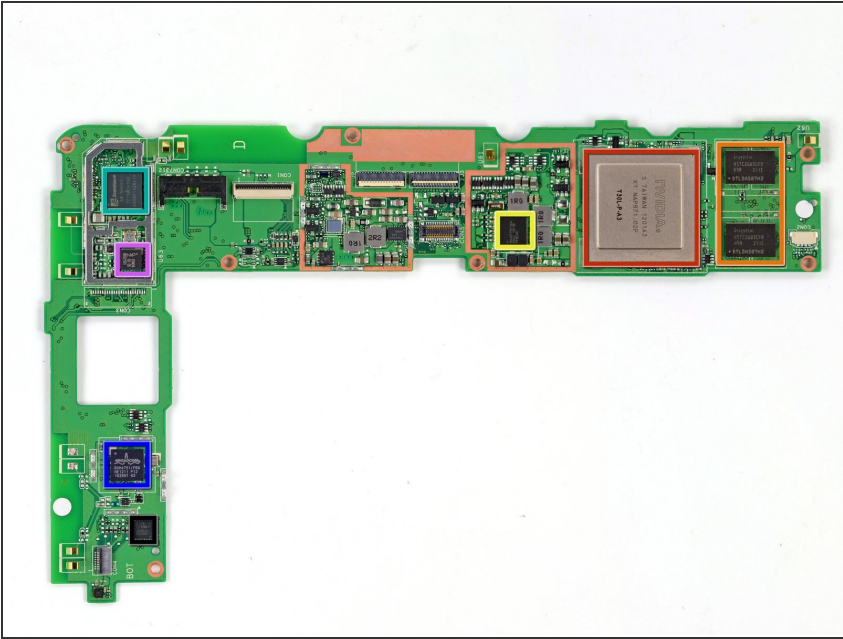
- We are eager to get to that motherboard, but it seems we have another goodie to pull off it first.
- Seated on the top left of the motherboard is one of the two microphones.
- One of the new features in Jelly Bean is improved voice recognition. Is it as good as Siri? Will it remind you to put the [gazpacho on ice](#)? We would tell you the answers to these questions, but the microphone probably doesn't do us much good in its current state.

Step 15

The image shows the Dozuki logo, which consists of the word "DOZUKI" in white, uppercase, sans-serif font. The letters are centered within a solid orange rectangular background. This logo is superimposed over a dark, blurred background that appears to be a workshop or factory setting with various equipment and structures.

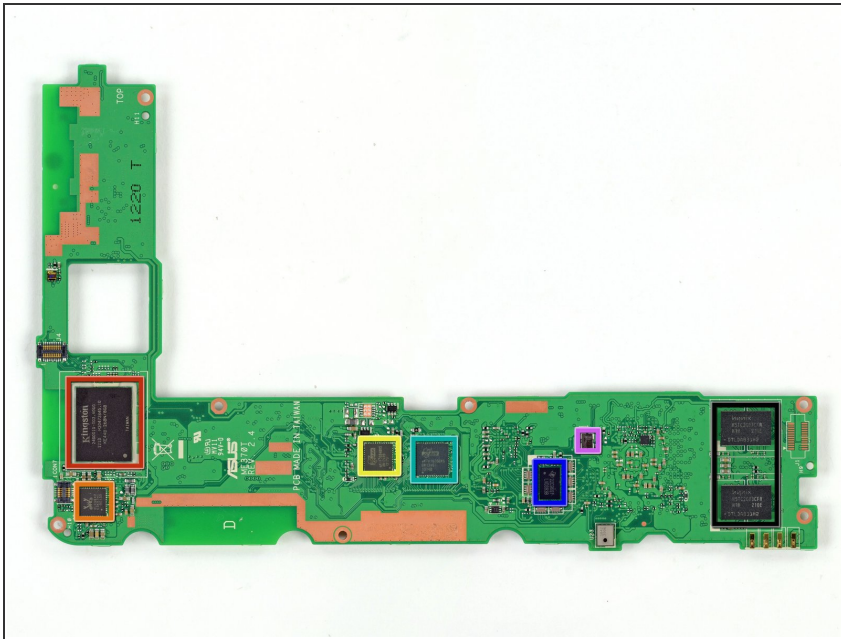
- By the way: we also make software for teaching people to do things. [Dozuki](#) makes it easy to create vibrant how-to manuals.
- Dozuki is great for:
 - [Standardized work instructions](#): improve quality by documenting how to get things done, one step at a time.
 - [Building product support sites](#): make your customers love you by teaching them how to do amazing things.
 - [Training and e-learning software](#): we've used Dozuki to teach over ten million people to repair electronics.
 - [Online community platform](#): build a knowledge base of expert knowledge with Answers, the Q&A engine that drives the popular [iFixit Answers](#).

Step 16



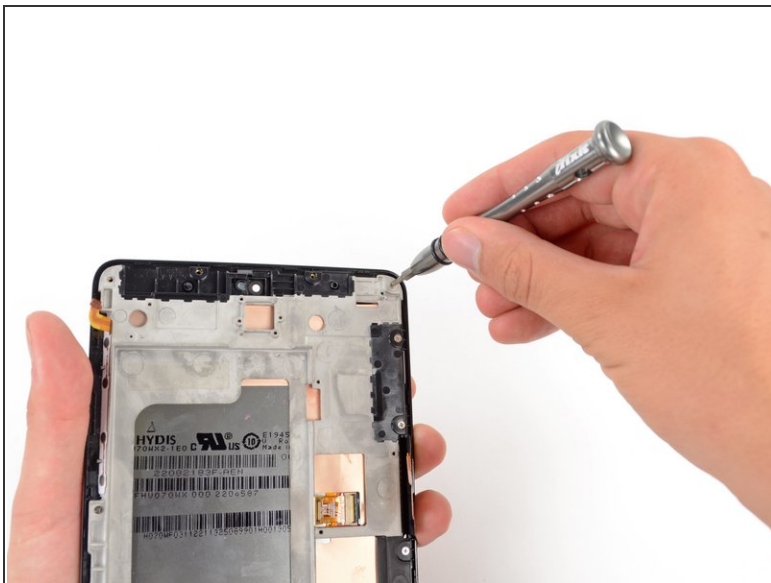
- Here she is, the motherboard:
 - NVIDIA [T30L](#) Tegra 3 processor
 - Hynix [HTC2G83CFR](#) DDR3 RAM
 - Max [77612A](#) inverting switching regulator
 - AzureWave [AW-NH665](#) wireless module
 - Broadcom [BCM4751](#) integrated monolithic GPS receiver
 - NXP 65N04 Integrated NFC Chip
 - Invensense [MPU-6050](#) gyro and accelerometer

Step 17



- On the flipside:
 - Kingston [KE44B-26BN/8GB](#) 8GB flash
 - Realtek ALC5642
 - ELAN eKTF36248WS EKTF3624 series 16-bit touch panel signal processor MCU
 - ELAN eKTH10368WS EKTH1036 series touch panel controller
 - Texas Instruments [SN75LVDS83B](#) LVDS LCD display driver
 - Hynix [HTC2G83CFR](#) DDR3 RAM

Step 18



- The frame comes off with the turn of a [screwdriver](#), revealing another copper alloy shielding the LCD.

Step 19



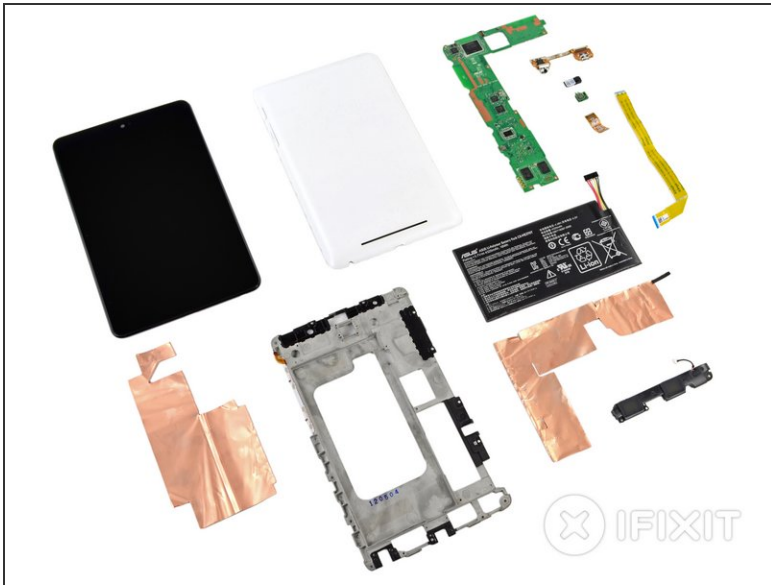
- We are approaching the display assembly. *Nexus 7, lower your (copper) shields!*
- We have one final cable to remove before we can (hopefully?) remove the LCD from the front glass.
- ⓘ *Fingers crossed.*

Step 20



- Here we have the 7-inch, 1280x800 HD display, manufactured by Hydis and designated model HV070WX2.
- As is becoming a trend, the LCD is fused to the [Corning glass](#). We have not heard if this glass is Gorilla Glass or Gorilla Glass 2, and we have broken [far too many displays](#) recently to dig any further.
- Sadly, this fusion makes the cost of repairing shattered glass much higher, as it will require replacing the whole display assembly—LCD included.

Step 21



- Nexus 7 Repairability Score: **7 out of 10** (10 is easiest to repair)
- The rear case is very easy to open, and requires minimal prying effort with a plastic opening tool to remove.
- All fasteners inside are Phillips #00 screws—no security or proprietary screws here.
- Battery replacement can be accomplished without soldering—or even a screwdriver.
- Many components, including the I/O ports, can be replaced independently of the motherboard.
- Copper alloy sheets provide convenient shielding, but they could tear during disassembly.
- The LCD does not separate from the display glass, increasing repair costs.