



# Kindle Fire Teardown

Kindle Fire tablet teardown.

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## INTRODUCTION

Amazon proposes to offer users a full media experience with their \$199 tablet. It didn't take long until we decided to see what they crammed inside this value package.

Did this teardown kindle a fiery passion for gadget disassembly in you? Follow [@ifixit](#) on Twitter to stay up to date with the latest teardown antics.

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### TOOLS:

- [Heat Gun](#) (1)
  - [iFixit Opening Picks set of 6](#) (1)
  - [Phillips #00 Screwdriver](#) (1)
  - [iFixit Opening Tools](#) (1)
  - [Spudger](#) (1)
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## Step 1 — Kindle Fire Teardown



- We have only one burning desire; let us tear into this Fire.
- 7" Multi-Touch Display with IPS Technology
- Dual-Core Processor
- 512 MB RAM
- 8 GB Internal Storage
- 802.11b/g/n Wi-Fi Connectivity
- Custom Operating System (Based on Android 2.3 Gingerbread)

## Step 2



- In case you couldn't identify the Kindle Fire by its sleek looks, the back panel has been stylishly embossed with "kindle." The smooth, rubberized texture of the panel complements the small size quite well to provide a nice feel when holding the Fire in one hand.
- The Kindle Fire is officially identified as model number D01400.
- According to the power specifications listed on the back side of the Kindle Fire, an input power of 5 V DC at 1.8 Amps is suggested. Why is this important? A computer USB port typically puts out no more than .9 Amps (USB 3.0), which means it'll take a loong time to fully charge the tablet through USB.

### Step 3



- The Fire has a very simplified design that includes a mere two ports and one button—all found on the bottom of the device.
- The first port is a standard 3.5mm headphone jack, but the volume must be controlled from inside each app, as there are no external volume buttons.
- The port in the middle is a Micro-USB port for connecting the Fire to your computer. The Fire can also charge its battery when plugged into a computer, though it will take longer than charging directly from the AC outlet.
- The only button on this tablet is a power button, located on the bottom of the Fire right next to the ports.
- The Kindle Fire has a similar port configuration as the iPad 2, utilizing only a single port for data transfer and charging.
- The Fire's dimensions are 7.5" x 4.7" x 0.45". Compared to the iPad 2 whose dimensions are 9.5" x 7.3" x 0.34", the Fire looks a little like a chew-toy for the much larger iPad 2.

## Step 4



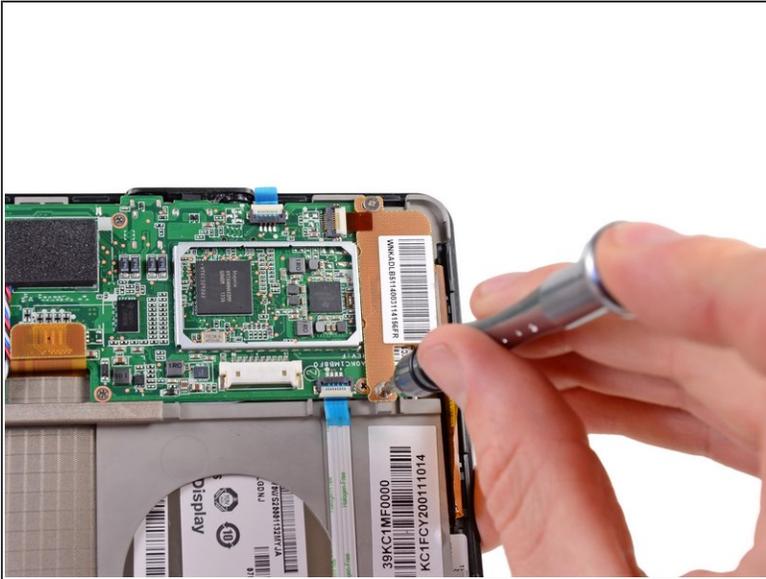
- Our old friend, plastic opening tool, comes to our aid as well as our musical friend, the [guitar pick](#).
- A little prying and plucking and the case's halves yield to our efforts.
  - Thankfully the Kindle's case separates with a lot less effort than a [certain product line](#) we know.
- Removing the back case reveals the motherboard and a behemoth of a battery. Note the shiny metal plates on the back case that help provide protection for the internal components, as well as heat sinking and EMI shielding. Unfortunately, this mirror-like shielding inevitably results in a narcissistic battery.

## Step 5



- Only one connector and some glue keep this monstrous battery in its place—no match for our trusty [spudger](#) and plastic opening tool.
- With the battery freed, we take a closer look at the Fire's 4.6" tall x 4.3" wide Li-Ion battery.
- This battery sure puts out... 16.28 Watt-hours, to be exact. However, due to the size of the Fire, its battery's 3.7 V potential and 4400 mAh capacity don't quite stack up to the specs of the [iPad 2 Wi-Fi's battery](#).

## Step 6



- The touchscreen controller is easily detached from the motherboard after removing a few screws.
- To gain access to the motherboard, we must first disconnect a couple of connectors from their respective sockets.

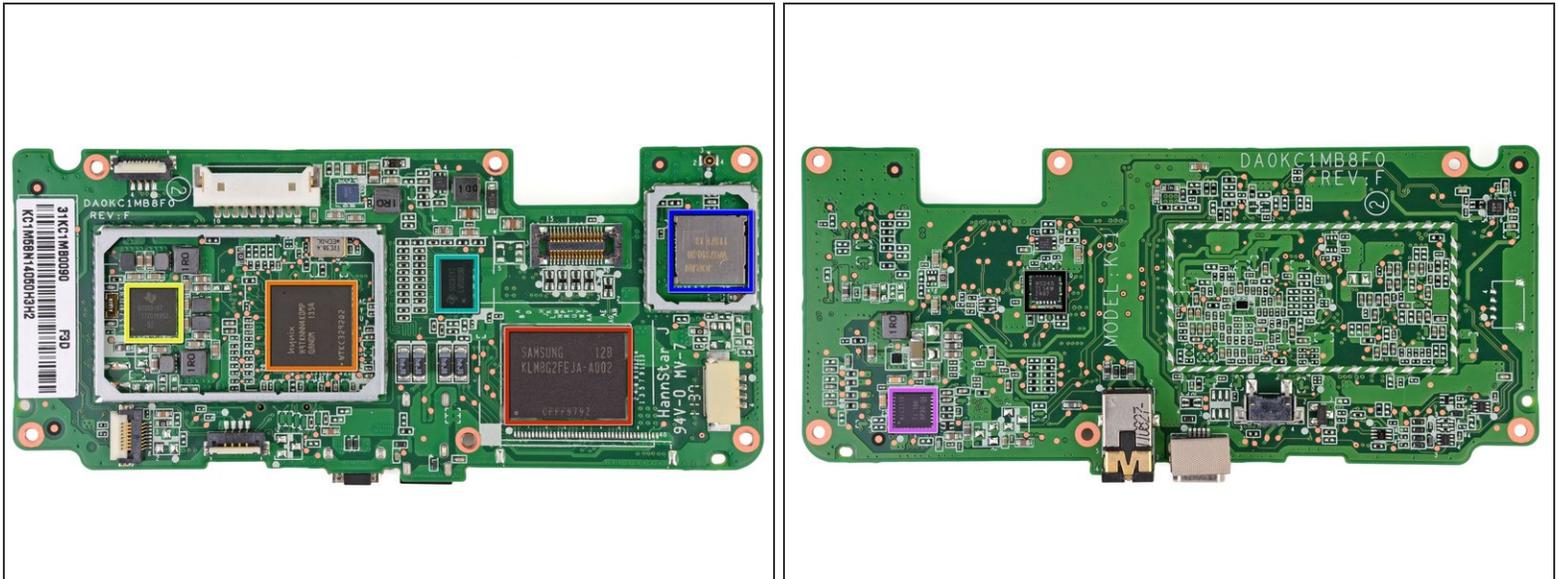
## Step 7



- A few more twists with the Phillips #0 from our 64 Bit Driver Kit releases the motherboard from the Kindle's grasp.

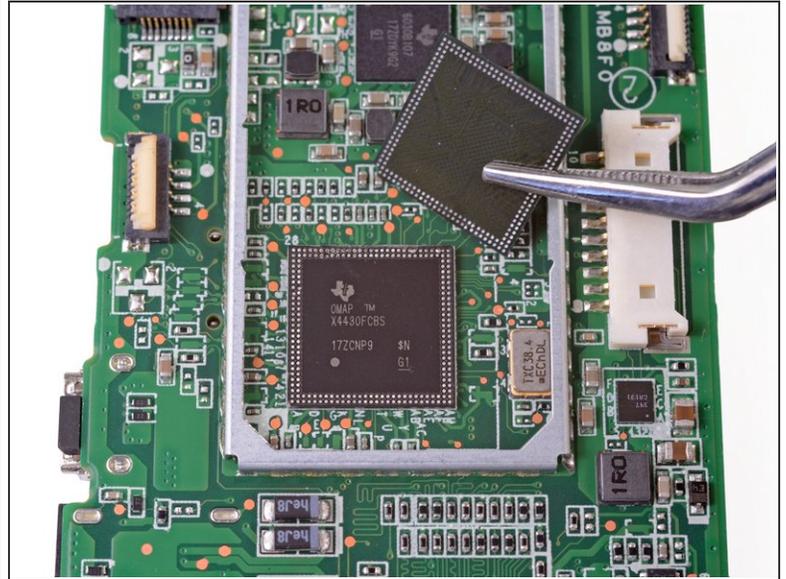
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## Step 8



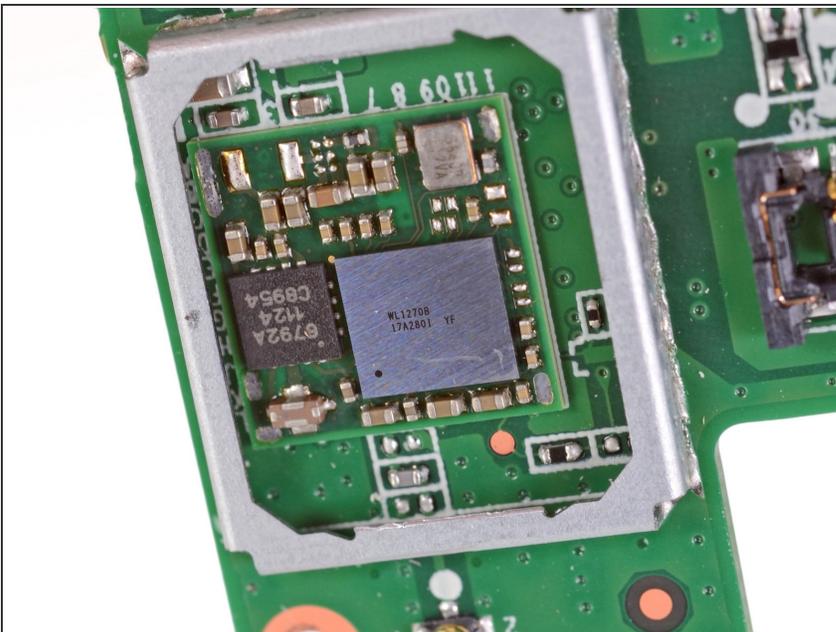
- We put on our classy monocle magnifying glass to help us identify the ICs:
  - Samsung KLM8G2FEJA 8 GB Flash Memory
  - Hynix H9TKNNN4K 512 MB of Mobile DDR2 RAM
  - Texas Instruments [603B107](#) Fully Integrated Power Management IC with Switch Mode Charger
  - Texas Instruments [LVDS83B](#) FlatLink 10-135 MHz Transmitter
  - Jorjin [WG7310](#) WLAN/BT/FM Combo Module
  - Texas Instruments [AIC3110](#) Low-Power Audio Codec With 1.3W Stereo Class-D Speaker Amplifier
  - Texas Instruments [WS245](#) 4-Bit Dual-Supply Bus Transceiver

## Step 9



- It's desoldering time. After busting out the [heat gun](#), we quickly get to work searching for what secrets lie beneath the Hynix RAM chip.
- Eureka! Lifting off the RAM chip, we find the 1 GHz processor—a Texas Instruments [OMAP 4430](#).

## Step 10



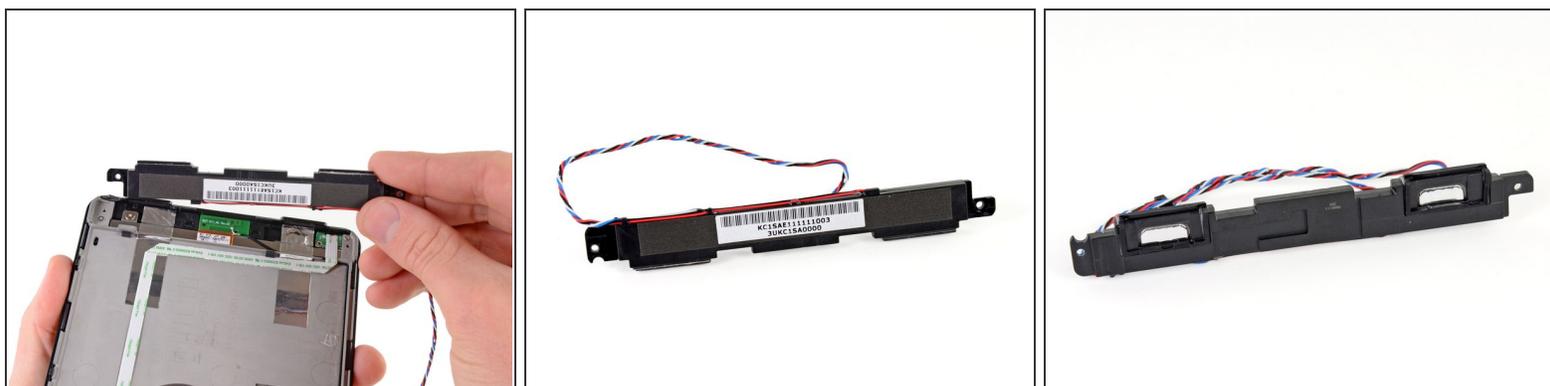
- Continuing our IC exploration, we decided to sneak a peak under the Jorjin cover. We uncovered a Texas Instruments [WL1270B](#) 802.11 b/g/n Wi-Fi solution.
- According to [Chipworks](#), the WL1270 is an older chip that was designed to work with the TI OMAP 3530. It's interesting that the Fire has it, given that it's coupled with the newer OMAP 4430.

## Step 11



- One more screw holds the power status LED board in place.
  - The Kindle Fire's sole button (located on the motherboard) is used to turn the device on/off or tell it to sleep/wake.
- ⚠ Be careful telling your device what to do; we hear it has a fiery temper.

## Step 12



- A couple more Phillips #0 screws are removed from the Fire and off comes the speaker assembly.
- The speaker assembly seems about on par with the speaker assemblies of some other [tablets](#).

## Step 13



- What do the Kindle Fire and a fruit fly have in common?
- Thanks to the help of our Phillips #0 screwdriver, now neither have a backbone.
- ⓘ For those of you that thought it had to do with short lifespan, you were mistaken. We actually have high hopes for this little tablet.

## Step 14



- Separating the display from the glass was a breeze, which was a nice departure from the usual fused glass ordeals.
- Don't be fooled by the display's current state of black lifelessness. When powered on, the LG-manufactured 7" (diagonal) display gives users an eye-pleasing array of 16 million colors at a resolution of 1024 x 600 pixels.
- Sharing the screen with friends and family is made easy thanks to the application of In-Plane Switching (IPS) which allows for a wider viewing angle.
- ⓘ We may be comparing apples and oranges here, but the original Kindle contained roughly 15,999,996 fewer colors. They were as follows: gray-ish, gray, grayer, and grayest.

## Step 15



- Here we have the front panel assembly in all its glory.
- The touchscreen controller is designed by ILITEK and is marked as 2107QS001K A95B8F416 A2130B002

## Step 16



- Kindle Fire Repairability Score: **8 out of 10** (10 is easiest to repair).
- The rear case is very easy to open, granting trouble-free access to the internals.
- All the fasteners found inside are Phillips #0 screws—one non-proprietary screwdriver is all you need.
- The LCD is not fused to the display, making replacement an easy task, if necessary.
- Simplistic design and limited functionality means fewer components and less headache for disassembly.
- A decent amount of adhesive is used on the battery and motherboard, meaning some prying and gentle working is required for disassembly.
- The glass panel is fused to the front plastic frame, meaning a heat gun is required for replacing cracked glass (or you have to replace both components together).

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