



# Fairphone 1 Teardown

We disassembled the Fairphone in February of 2014.

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## INTRODUCTION

Fairphone has generated a fair amount of chatter within the repair community by making a fair-trade phone. Join us and find out if their commitment to a "smart, open design" and "lasting value" will make for the repairable phone of every fixer's dreams.

We managed to get our sneaky hands on Fairphone #3. No, seriously — the device we took apart is the third unit that came off Fairphone's prototype line! So some pieces may be a bit "rough around the edges" or have markings that don't show up in actual production units, but that's the price we pay for having exclusive access to the phone.

Want to hear more about our own dedication to repair and device ownership? Check out [iFixit.org](https://iFixit.org), check us out on [Facebook](https://www.facebook.com/iFixit) , or get the redux on [Twitter](https://twitter.com/iFixit).

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### TOOLS:

- [iFixit Opening Picks set of 6](#) (1)
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## Step 1 — Fairphone 1 Teardown



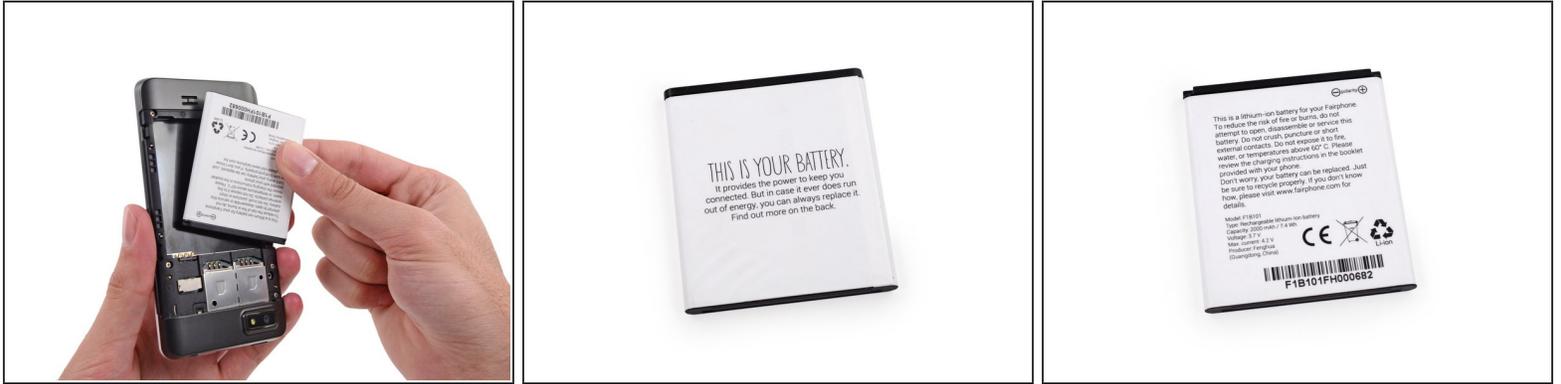
- With its unconventional goals, Fairphone isn't gonna be the flashiest flagship phone on the block, but it's still a solid smartphone that'll hold its own feature-wise:
  - 4.3" Quarter-HD (qHD) (960 x 540 pixels) display with 256 ppi
  - MediaTek MT6589M (quad-core) 1.2 GHz processor
  - 16 GB integrated storage expandable by microSD (up to 64 GB) + 1 GB RAM
  - 2000 mAh **user-replaceable** battery
  - 8 MP rear-facing camera with autofocus (stabilization + image sensor) + 1.3 MP front-facing camera
  - Wi-Fi 2.4GHz 802.11b/g/n Wi-Fi and Bluetooth v2.1 + EDR / v3.0 + HS (802.11 AMP) / v4.0 LE

## Step 2



- The battery cover has some serious heft, no doubt for structural aid and durability.
- ⓘ Tough as it is, the battery cover is loosely attached to the phone. If you set your phone down with a bit too much force, you're guaranteed to lose the battery cover when you pick it back up.
  - **Update:** We got one of the actual shipping units post-teardown, and confirmed that the floppy battery cover attaches to the rest of the phone nice 'n' securely.
- On the inside of the battery cover, we find an engraving commemorating the first supporters of Fairphone's grand vision: "**This phone and you and 9635 people made fairphone possible.**"

## Step 3



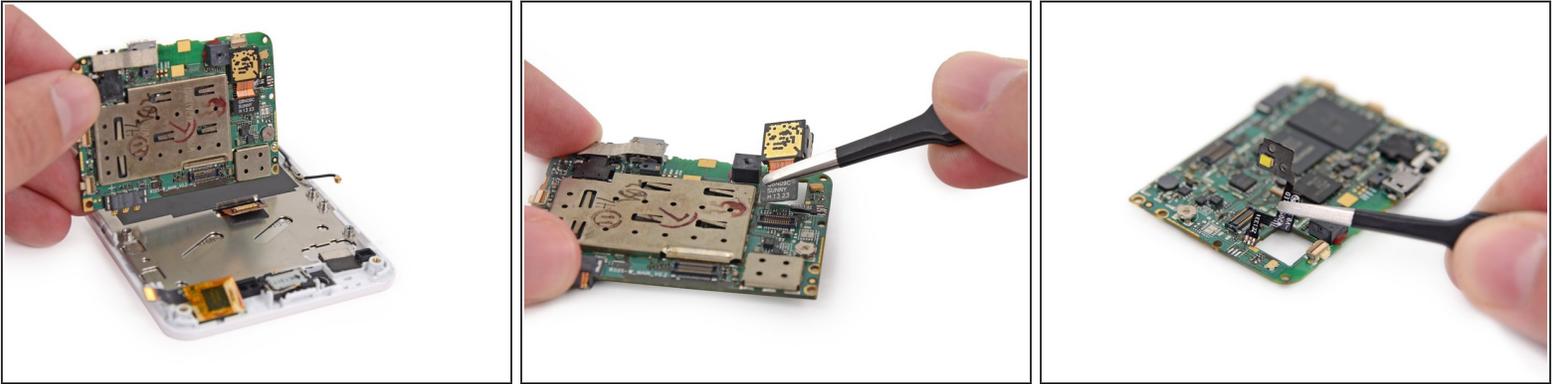
- Out first is the advertised user-replaceable 2000 mAh battery.
- ⓘ While we don't have reviews on the battery life just yet, Fairphone claims 400 hours of standby time.
- Comparatively:
  - [The iPhone 5s](#) sports a 1560 mAh battery, with up to 250 hours of standby.
  - The [Samsung Galaxy S4](#) comes in at 2600 mAh, with up to 300 hours of standby.

## Step 4



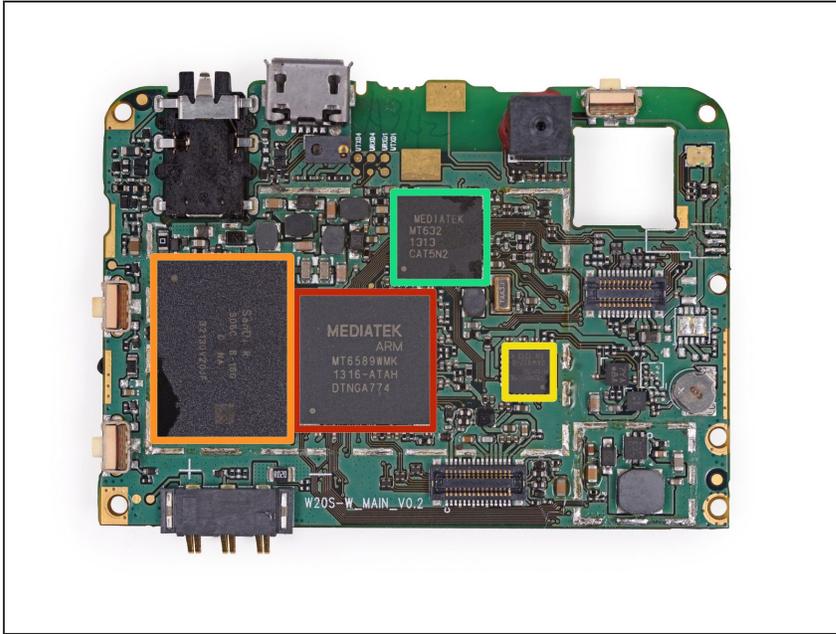
- A little gentle prying with our snappy [opening pick](#) pops the clips along the midframe.
- This style of midframe reminds us of most Samsung phones on the market, and the opening procedure is [about on par](#).
- ⓘ Samsung phones have historically had fairly high repair scores, despite their [unfortunately sealed, and pricey, display assemblies](#). We can only hope Fairphone doesn't take *too* much after the Galaxy phones...

## Step 5



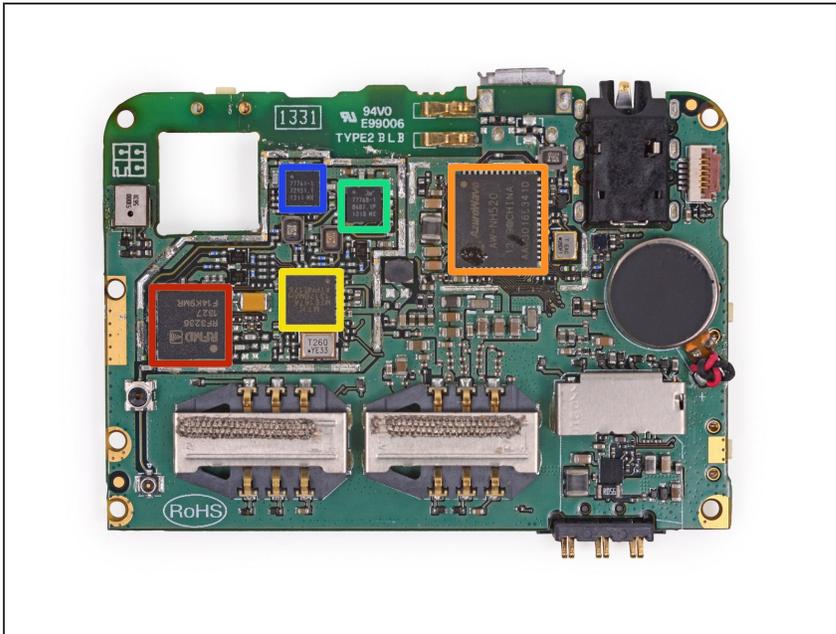
- With minimal finagling, we free the motherboard and throw it on the table to take a looksie.
- The 8 MP rear-facing camera comes out with ease, but several other components are unfortunately soldered in place:
  - Front-facing camera
  - Vibrator motor
  - LED flash
  - Headphone jack
- We're hopeful that future revisions of the Fairphone will be more modular, and more cost-effective to repair.

## Step 6



- While it's [no secret](#) what hardware is going into this device, here are the noteworthy ICs we found:
  - Mediatek [MT6589](#) ARM Cortex A7 1 GHz CPU SoC
  - SanDisk 16 GB NAND Flash memory
  - InvenSense [MPU-3050](#) Triple Axis Gyroscope with Embedded Digital Motion Processor
  - Mediatek MT632

## Step 7



- On the flip side:
  - RFMD [RF3236](#) WEDGE (Linear) Transmit Module
  - AzureWave AW-NH520, probably similar to the [AW-NH580](#) 802.11 b/g/n WLAN, Bluetooth, GPS and FM Combo Module IC
  - MediaTek [MT6167A](#) RF Transceiver
  - Skyworks [SKY77768-1](#) SkyHi Power Amplifier Module for WCDMA/ HSDPA/ HSUPA/ HSPA+/ LTE – Band VIII (880–915 MHz)
  - Skyworks [SKY77761](#) SkyHi Power Amplifier Module for CDMA / WCDMA / HSDPA / HSUPA / HSPA+ / LTE – Band I (1920–1980 MHz)

## Step 8



- One last major component remains on the display assembly—a small daughterboard with an embedded antenna and spring contacts for the speaker.
- A look at the back of the 4.3" qHD display reveals the touch screen controller to be a [FocalTech FT5316DME](#).

## Step 9



- Fairphone repairability score: **7 out of 10** (10 is easiest to repair).
  - The battery can be replaced without any tools.
  - It's very easy to open and access the internal components.
  - There are only 8 screws in the entire device, all standard Phillips #000 (no proprietary or security).
  - The Fairphone comes with a set of [free, open source repair manuals](#).
  - Several smaller components are soldered to the motherboard, increasing repair difficulty (front-facing camera, vibrator motor, LED flash, and headphone jack).
  - The glass is fused to both the display and the display frame, increasing repair costs.