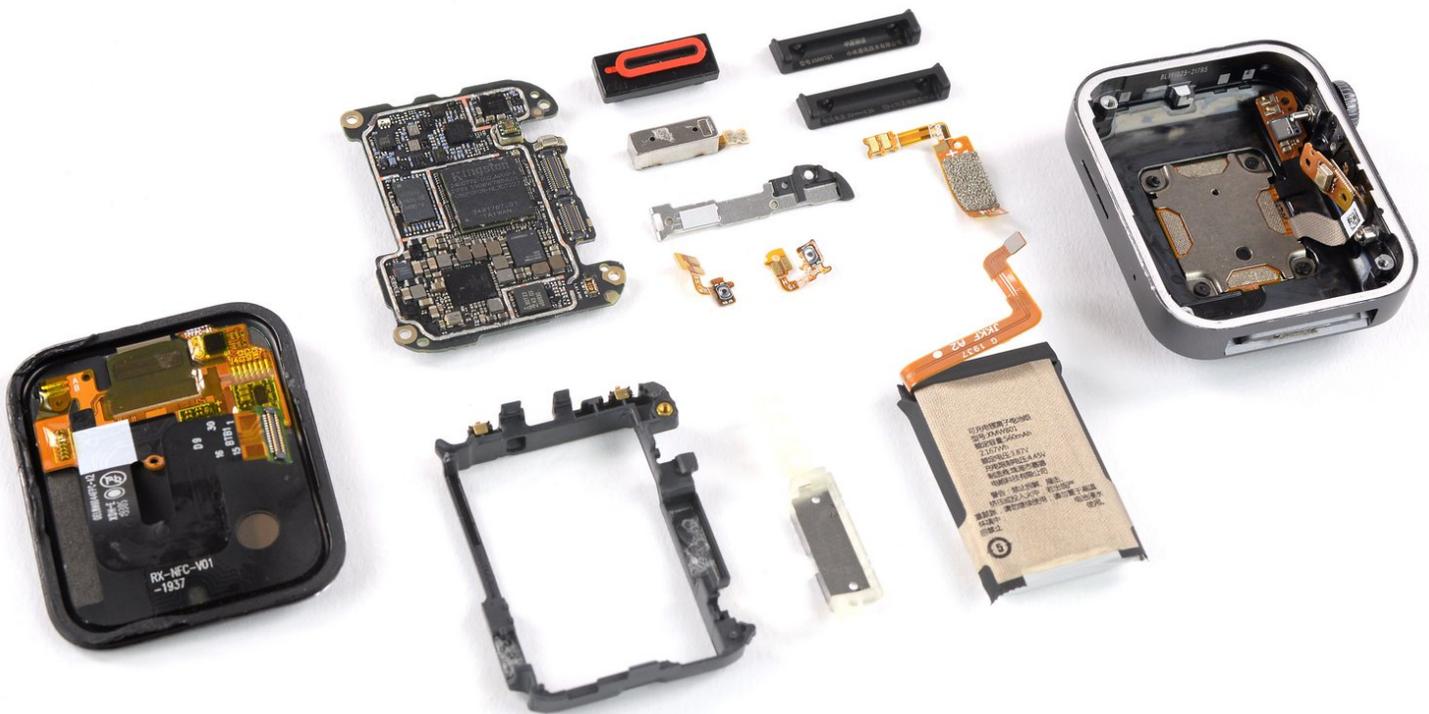




Xiaomi Mi Watch Teardown

An iFixit Teardown of the Xiaomi Mi Watch, to reveal a hard to open display, a quite large battery but a tiny vibration module. Performed in February 2020.

Written By: Tobias Isakeit



INTRODUCTION

Apple still dominates the smartwatch business in many parts of the world—but can you get a  Watch equivalent for roughly half the price? Xiaomi seems to think yes, so today we're putting their Mi Watch under the knife. Let's tear it down and see what turns up.

Stay up-to-date on the latest teardowns and repair news—check out our [YouTube channel](#), follow us on [Instagram](#), [Twitter](#), or [Facebook](#), and subscribe to our [newsletter](#) for exclusive teardown content.

TOOLS:

- [iOpener](#) (1)
 - [Hot Air Rework Station Hakko FR-810](#) (1)
 - [Technician's Razor Set](#) (1)
 - [iFlex Opening Tool](#) (1)
 - [iMac Opening Wheel](#) (1)
 - [iFixit Precision Bit Driver, Aluminum](#) (1)
 - [Phillips #000 Screwdriver](#) (1)
 - [Spudger](#) (1)
 - [ESD Safe Tweezers Blunt Nose](#) (1)
 - [iFixit Opening Picks \(Set of 6\)](#) (1)
-

Step 1 — Xiaomi Mi Watch Teardown



- While the Mi Watch bears a certain superficial **ahem** similarity to a familiar Apple product, we suspect the parallels end there. How fruity are these specs?
 - Aluminum case with a 1.78" Super AMOLED screen
 - Snapdragon Wear 3100 platform
 - 1 GB RAM and 8 GB storage
 - Speaker and microphone for calls (via e-SIM)
 - Steps counter, sleep tracker, optical heart rate sensor, WiFi, GPS, NFC, and Bluetooth 5.0
- You also get MIUI for Watch, a skinned version of Wear OS that can be paired with the Google app in English without problems. (But since there's no international version of the watch, you'd have to get by with Chinese characters on the watch itself.)

Step 2



- Let's compare a little more closely—we wouldn't want to tear down a [stunt double](#) by mistake. That's the Mi Watch on the left, Apple Watch Series 5 on the right.
- It's the slight differences that give away the Mi Watch:
 - A boxier, edgier case, screen, and "digital crown"
 - A wider black bezel around the display, and a taller profile to match
 - Charging contacts on the rear, and flappy protruding mounts for the detachable band.

Step 3



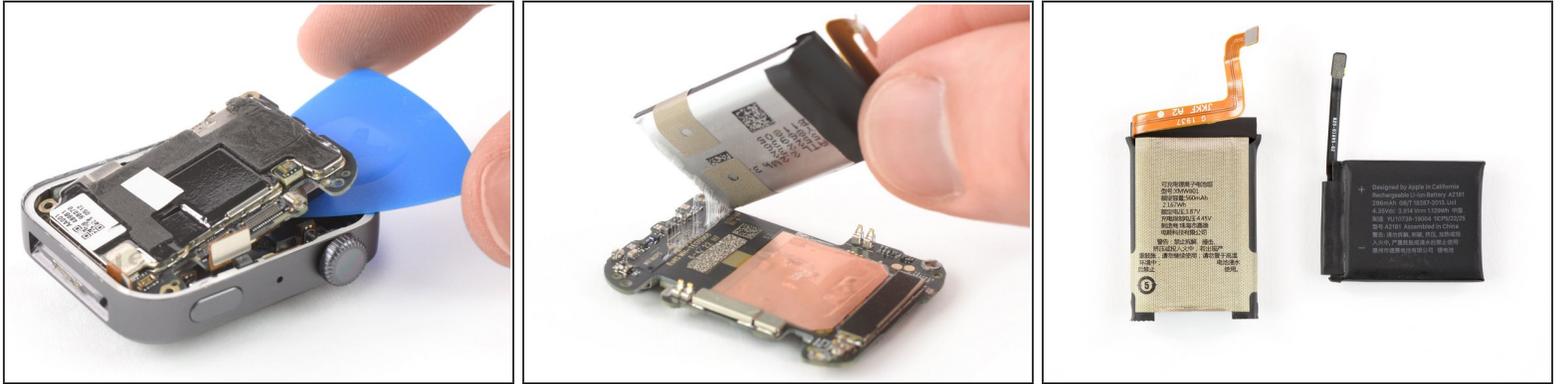
- The only external screws fix the band mounts to the case—and removing those reveals the model number, **XMWT01**. We're pretty sure the rest says "Made in China" by "Xiaomi Communication Technology Co., Ltd." Sounds all too plausible if you ask us.
- After applying much heat, and swiping unsuccessfully with the curved razor blade we normally use for Apple Watch incursions, we switch to the thin and sturdy [iFlex](#)—along with some off-label use of the [iMac Opening Wheel](#).
- ⓘ Although we succeed at getting it open, the watch doesn't go unscathed through this procedure. This screen is no fun to separate, and the case carries the scars to prove it.

Step 4



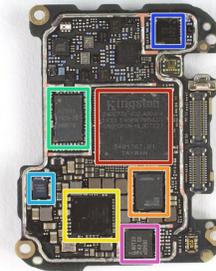
- The screen won't detach quite yet, but its flex cable is lengthy enough that we can maneuver our [Precision Bit Driver](#) into position to loosen a bracket and unplug the display.
- This is a 1.76" Super AMOLED display with 368 x 448 resolution, and a small circular cutout in the bottom right for the light sensor to peek through.
 - On the back of the screen, we find a TMA525C 34FNI (PMI 1907 D 21 8/1856) multi-touch capacitive touchscreen controller from Cypress.
- For comparison, here's an Apple Watch Series 5 LTPO OLED (to the right), measuring 1.78" with the same resolution.

Step 5



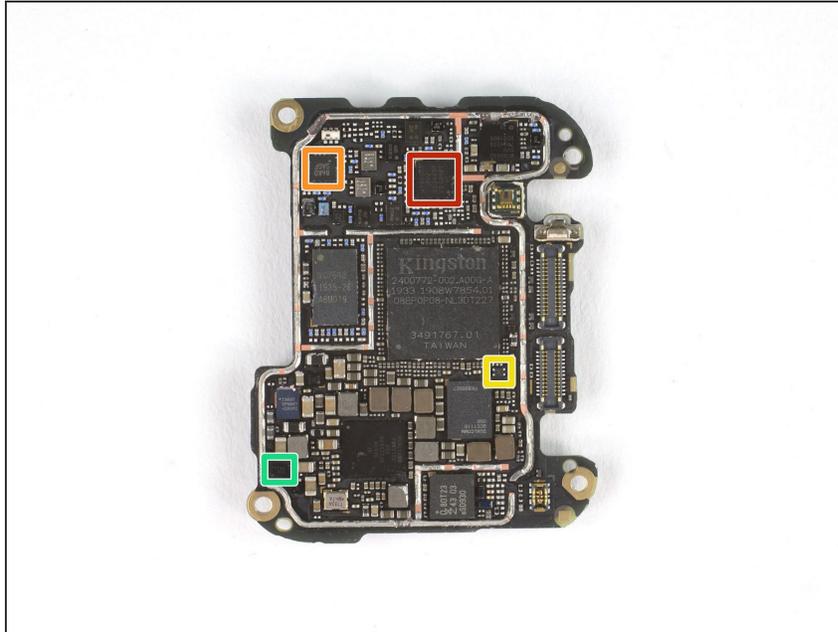
- Next out is the motherboard, with the battery piggybacking along for the ride.
- The Mi Watch power cell (left) packs in 2.167 Wh (560 mAh @ 3.87 V), which in terms of sheer capacity leaves the [1.129 Wh from the 44 mm Apple Watch Series 5](#) (right) far behind.
- ⓘ The Snapdragon 3100, its co-processor, and power management sub-system also [seem to play a role](#) for longer battery run time.

Step 6



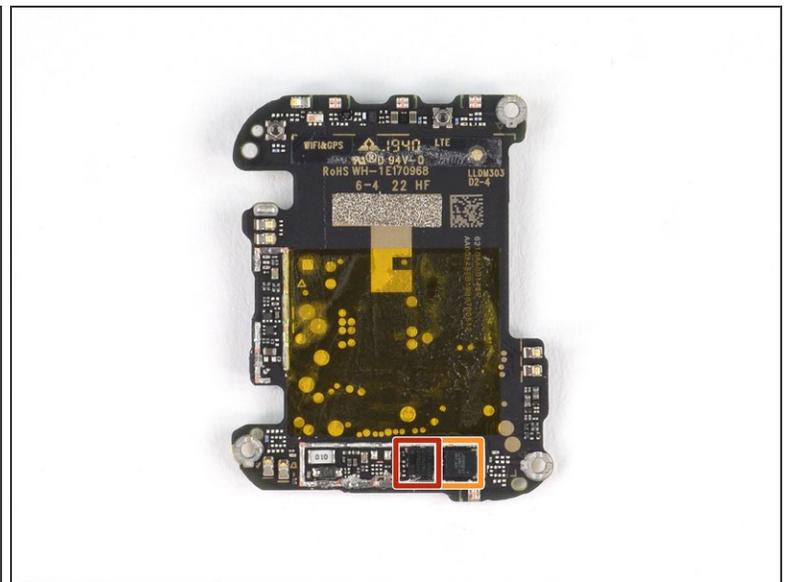
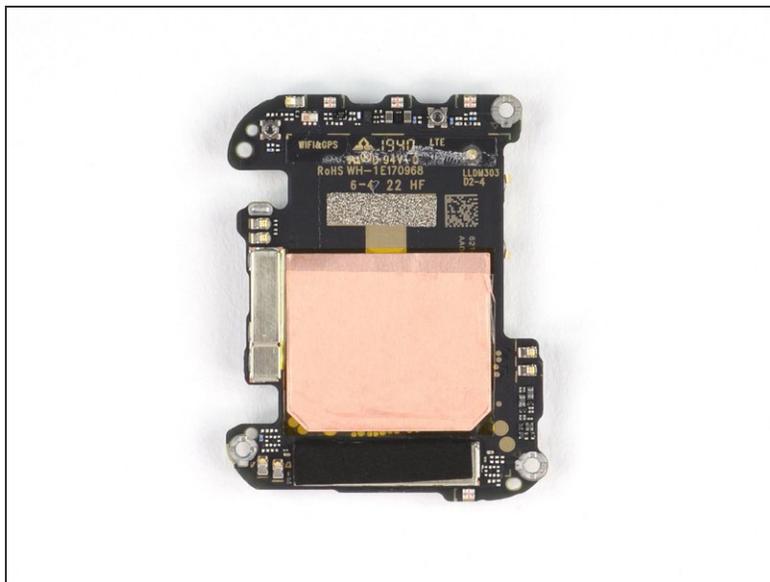
- On the motherboard we discover some interesting silicon:
 - Kingston 8GB LPDDR3 with Qualcomm MSM8909W [layered underneath](#)—also known as Snapdragon Wear 3100 with 32-bit, quad-core ARM Cortex A7 CPU and Adreno 304 GPU
 - Qualcomm QCC1110 co-processor
 - Qualcomm PMW3100 power management sub-system
 - Vanchip [VC7643-26](#) Cellular Front-End Module
 - Goodix [TFA9897](#) Class D audio amplifier
 - Qualcomm WCN3620 wireless connectivity chip
 - NXP Semiconductor [PN80T](#) NFC Controller w/ Secure Element

Step 7



- IC identification side 1, continued:
 - Qualcomm [WTR2965](#) RF Transceiver
 - Maxscend MXD86A0S SP10T Antenna Switch
 - Texas Instruments [TLV9001](#) 1-MHz, Rail-to-Rail I/O Operational Amplifier
 - ON Semiconductor [FAN49103](#) 2.5 A Buck-Boost Regulator

Step 8



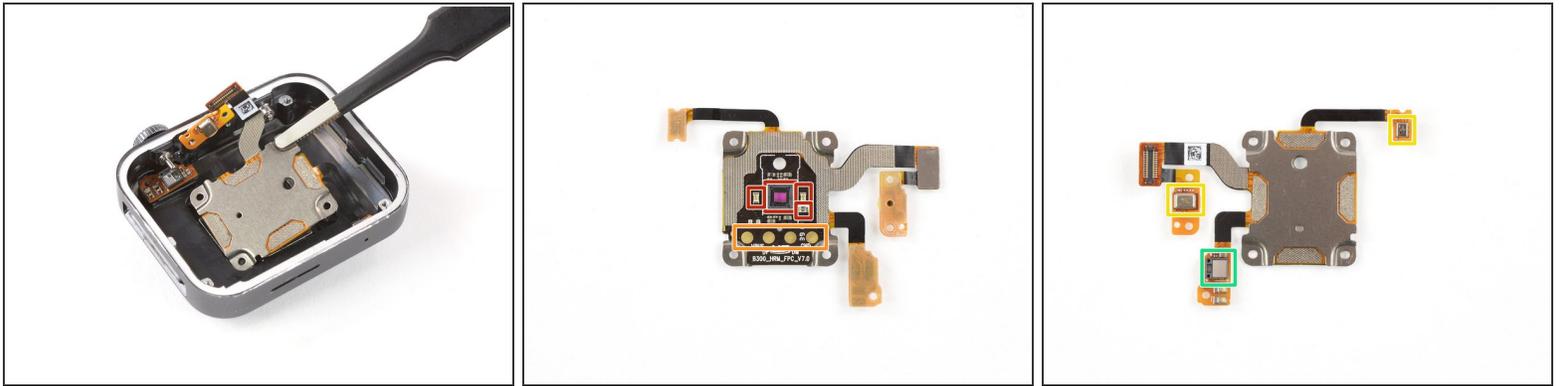
- The rear side of the motherboard isn't as busy, but the two chips we find here have proved harder to identify:
 - STMicroelectronics [ST33J2MO](#) Secure Microcontroller
 - STMicroelectronics [LSM6DSO](#) 3 DoF Accelerometer/Gyroscope

Step 9



- The midframe carries the speaker with its red rubber gasket, buttons for the crown and home button, as well as a small linear resonant actuator.
- Again, compared with the [Taptic Engine from the Apple Watch](#), this LRA is only a fraction of the size. What does that mean in terms of [vibration force](#)—what'd be their score on a Richter scale?
- ⓘ Turning the digital crown on the Mi Watch does prompt small, haptic steps—so Xiaomi certainly seems to be trying to make the most of this relatively small actuator.
- ⓘ But more than anything else, this comparison shows how much importance Apple places on that [relatively enormous Taptic Engine](#)—trading a lot of battery life for more communicative haptic feedback.

Step 10



- At the very bottom of the watch barrel, our [blunt nose tweezers](#) helps safely extract the final circuit board, equipped with:
 - The heart rate sensor and LEDs
 - Four data and charging contacts
 - Two microphones
 - And an optical encoder for reading the crown's rotation.

Step 11



- Our excursion into the first smartwatch directly from Xiaomi is now complete.
- Let's see how this wrist companion performs in our repairability rating.

Step 12 — Final Thoughts

REPAIRABILITY SCORE:



- The Xiaomi Mi Watch earns a **5 out of 10** on our repairability scale (10 is the easiest to repair):
 - The bands are easy to remove and replace.
 - Battery replacement is fairly straightforward once you're inside, but the motherboard must be removed for access.
 - Most components are modular and can be replaced separately, except for the circuit board at the bottom—which is secured with plastic rivets.
 - Opening the watch by removing the screen is possible, but difficult—and will most likely result in cosmetic damage.