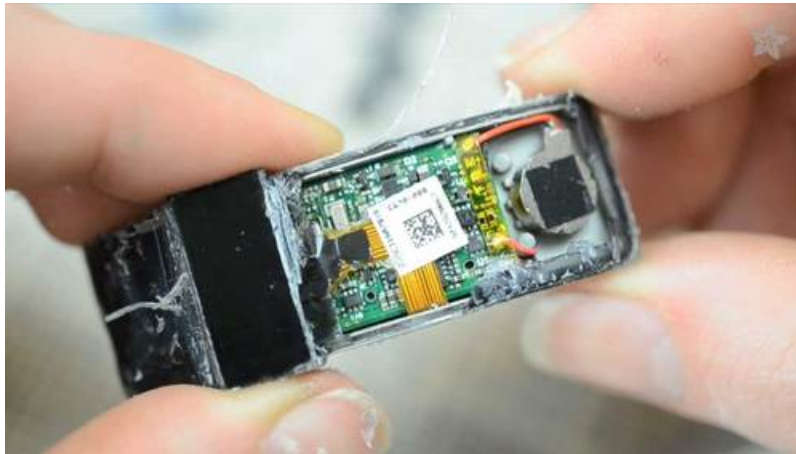


Fitbit Force Teardown

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Inside Fitbit Force



The Fitbit Force is a wireless activity monitor you wear on your wrist. It monitors your movements with a triple axis accelerometer and altimeter, syncs wirelessly over Bluetooth low energy (BTLE), and has a high-contrast OLED display. That's a lot of stuff packed into such a tiny space, so we wanted to open it up and see how it works inside.



The four torx screws on the back of the Fitbit came out easily, but that was the only easy step of this teardown. The silicone band was glued very securely to the metal-encased electronics module. We had to (carefully) cut away the band with a utility knife.



Under the band is a hard plastic layer. We couldn't get it to budge no matter how much prying and wiggling we did with the utility blade, so we soaked the plastic in acetone. ABS-type plastics are soluble in acetone and so the plastic becomes soft and is then easily scraped away.

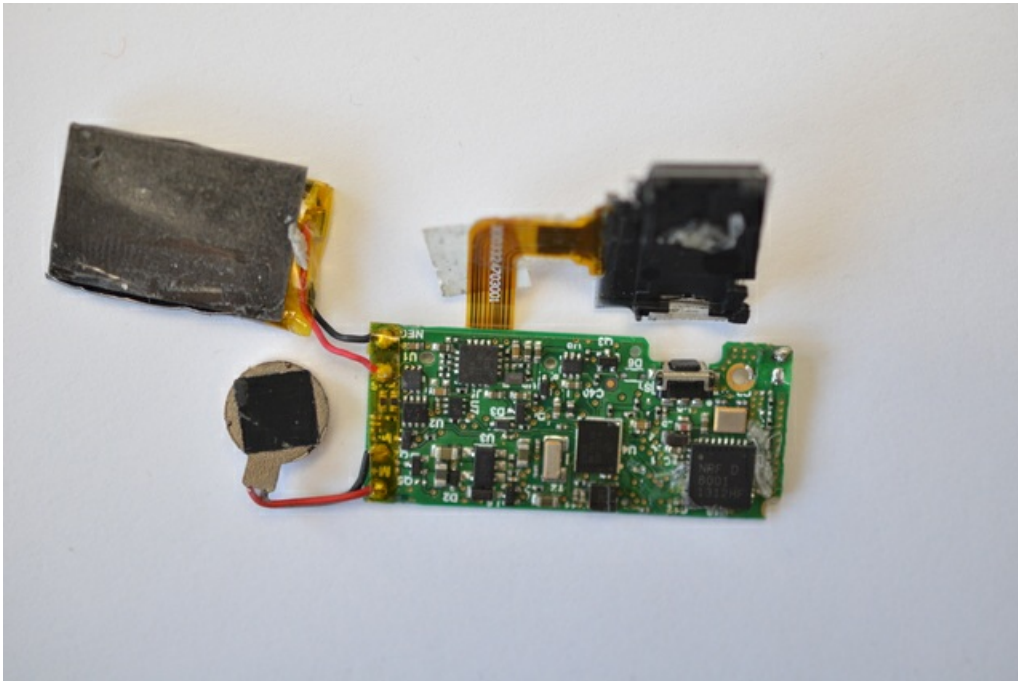


We repeated this process a few times - soak, scrape, soak scrape - until we finally broke into the cavity containing the circuit board.



Oops, we accidentally cut through the antenna on this side of the device! See the circuit board peeking through? Our scraping work paid off and we could access the goodies inside.





The board has a small lithium polymer battery, vibration buzzer motor, and OLED display connected to it. Onboard are tiny parts! The lower right chip is the BTLE module. Ladyada identified the following parts on the circuit board:

- NRF 8001 Nordic BTLE module
- STM L151C6 32-bit microcontroller
- TI BQ24232 lithium battery charger
- triple axis accelerometer (part number scratched off)
- altimeter

