



Withings Body Cardio Teardown

This month, we're cracking the case of the Withings Body Cardio, one of the most advanced consumer body composition weighing scales on the market today.

Written By: November Five



INTRODUCTION

This month, we're cracking the case of the Withings Body Cardio, one of the most advanced consumer body composition weighing scales on the market today.

Please checkout the full post on:

<https://novemberfive.co/blog/hardware-te...>

TOOLS:

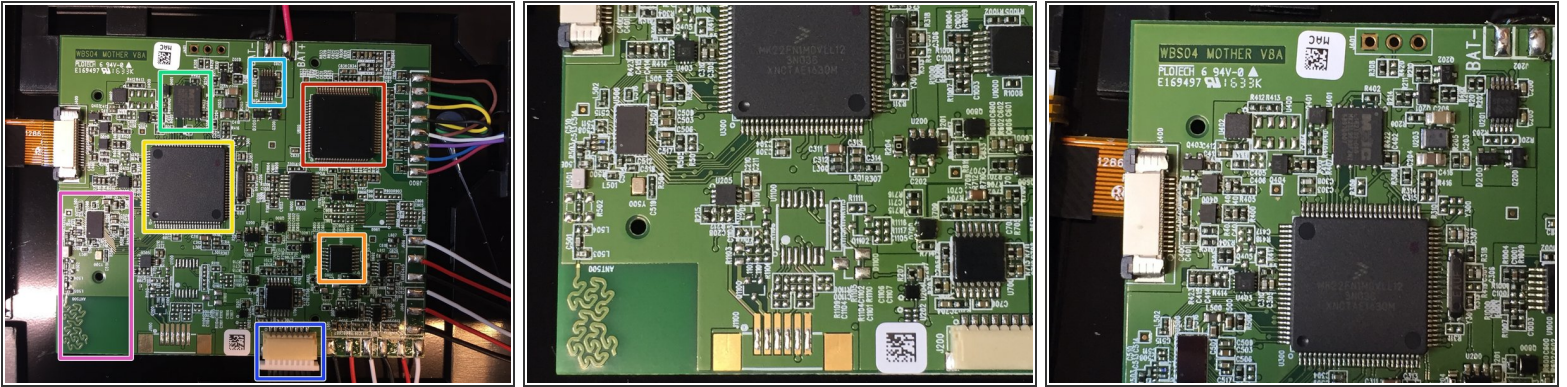
- [T3 Torx Screwdriver](#) (1)
 - [Tweezers](#) (1)
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Step 1 — Opening the scale



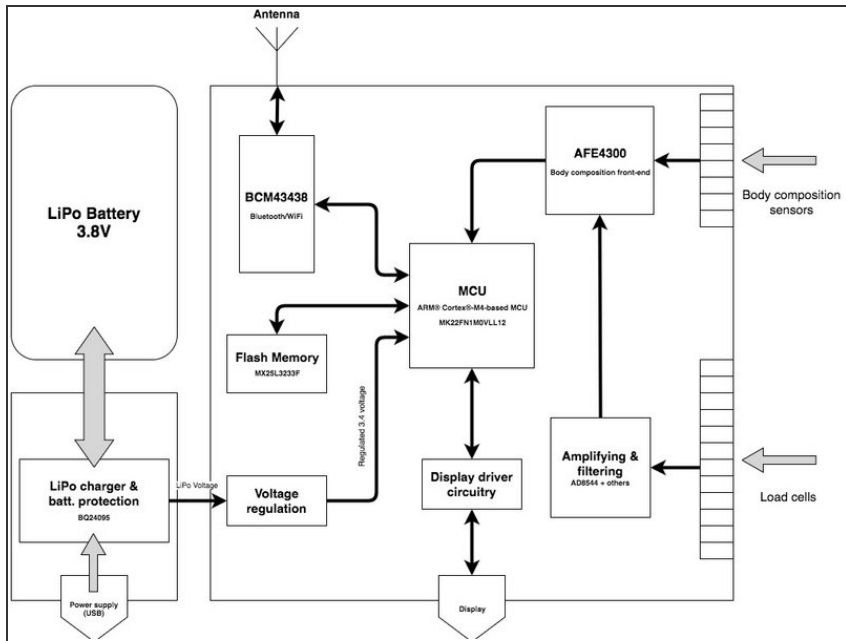
- Opening up the scale was not an easy task – there was a lot of double-sided tape involved.
- The back of the scale is fastened with four Torx screws – easy enough. The entire backplate, however, is glued to the front with double-sided adhesive cushions. Removing it simply involved pulling it firmly enough to break the adhesive, but not so hard as to break the connectors.
- With the backplate removed, you can immediately spot 4 load cells, one in each corner.

Step 2 — Main PCB



- ARM MCU - MK22FN1M0VLL12 (NXP)
- weighing scale and body composition front-end IC - AFE4300 (Texas Instruments)
- battery charging IC (including battery protection) - BQ24095 (Texas Instruments)
- WiFi and Bluetooth radio - BCM43438 (Broadcom)
- flash memory - MX25L3233F (Macronix)
- op-amp - AD8544
- connector to the USB port PCB

Step 3 — Block diagram



- I've made an attempt to design a block diagram for the whole setup. This won't be 100% accurate as I don't know all the details but it will give you an idea on how the components are interlinked and work together.