Inside the Muse

Muse is a brain sensing headband (https://adafruit.it/fyW) for assisted meditation. It pairs over bluetooth with your phone to guide you through a meditation session with realtime feedback on your brain’s activity, followed by some stat tracking that helps you improve your calm over time.

Disassembly revealed a circuit board behind each ear. This side contains the battery and charging circuitry, as well as an opamp and several test points.
The traditional circuit boards are joined to a flex circuit with a sophisticated adjustable metal piece. A small clip extends down to connect to the metal part of the exterior enclosure, which provides contact to the conductive rubber over-ear sensor.

The flex circuit also contains the forehead electrodes.
The other circuit board contains the analog sensing circuitry, microcontroller, and bluetooth module.

The chips we found on the board:

- PIC24 microcontroller
- MMA8453 accelerometer
- OPA4374 quad CMOS opamp
- MCP6L02 precision opamp
- RN42 Bluetooth classic module
- MFi33753959 iOS authentication chip