

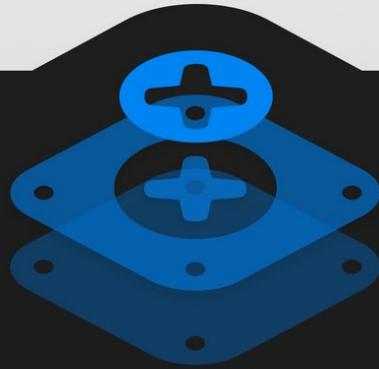


Chromecast 2015 Teardown

Chromecast 2015 and Chromecast Audio teardown on October 2, 2015.

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Google Chromecast 2015



TEARDOWN

INTRODUCTION

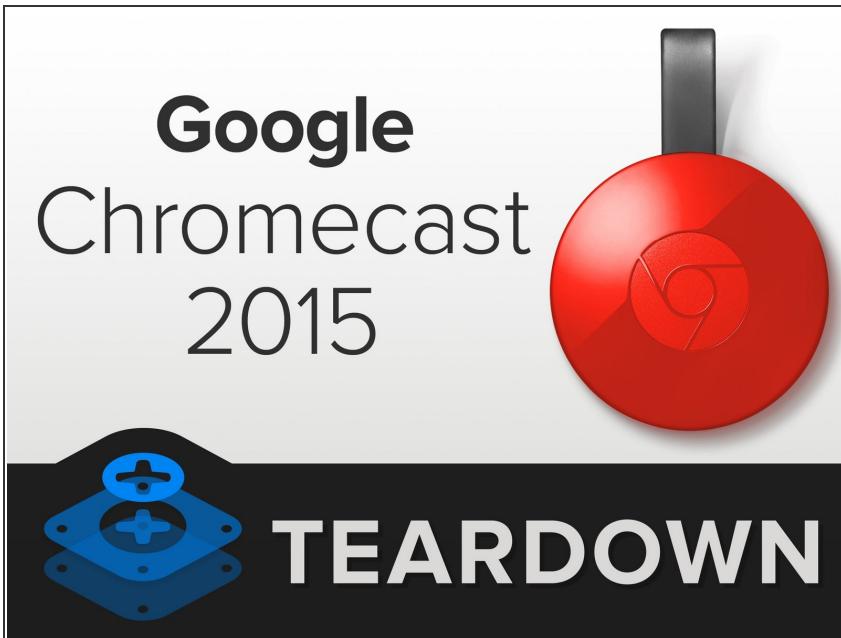
This week, Google's ever-expanding crusade to deliver *all* your Internet continued with the release of two media streaming dongles, the Chromecast 2015 and Chromecast Audio. So, today we're bringing you two teardowns for the price of one! With a fresh look and beefed-up hardware, this duo promises to stream through any Netflix binge or all-night dance marathon you can throw at it. Let's see how they do it.

Want more teardowns in your queue? Buffer up and follow us on [Facebook](#), [Instagram](#), and [Twitter](#)!

TOOLS:

- [iFixit Opening Tools](#) (1)
- [T5 Torx Screwdriver](#) (1)

Step 1 — Chromecast 2015 Teardown



- Before we *cast* away this dongle's shiny new housing, let's see what Google has to say about it:
 - Dual-band Wi-Fi 802.11b/g/n/ac
 - Multidirectional antenna array
 - USB-powered
 - 1080p HDMI output
- Apparently, Google chose to withhold the specs on the magnet in the HDMI plug housing. We'll take their silence to mean something awesome is going on.

Step 2



- Before diving in, we line up the original Chromecast next to its new siblings—Chromecast 2015 in the center, and a ~~hockey~~ puck Chromecast Audio on the right.
- The video models are functionally very similar, sharing the same HDMI output, reset button, and Micro-USB power port, as well as a single LED.

Step 3



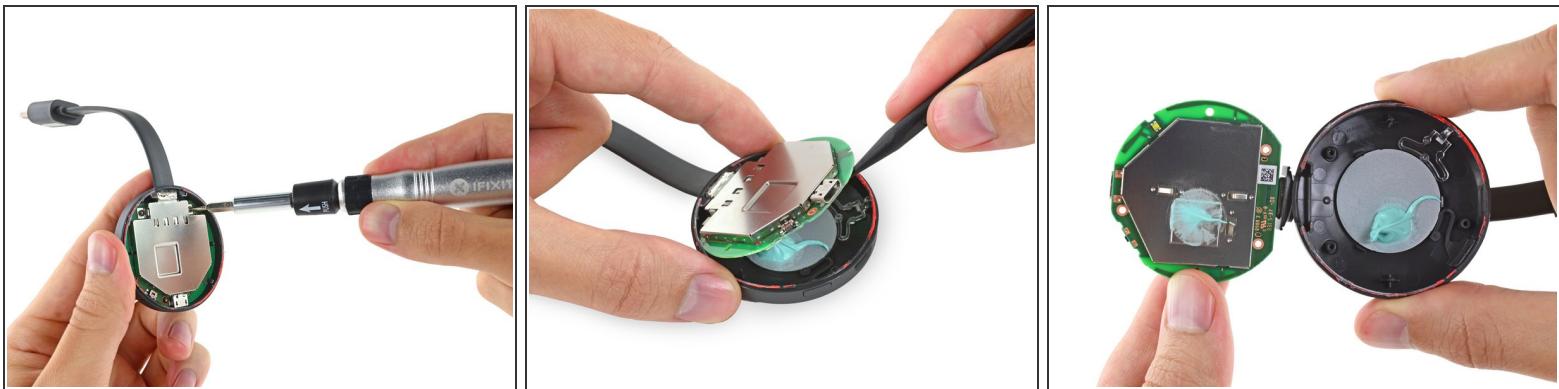
- It's not burning a hole in your display—that orange halo is backscatter from the crazy "coral" colored case. Little coral-flavored [photons](#) are flying everywhere.
- The previous Chromecast's [cheeky model number](#) appears to have given way to something more conventional: **NC2-6A5**. Is there a pop culture reference we're missing here? ...Anyone? ...Anyone?
 - ★ Alert reader Commodore Bob points out that NC2 could be read as NCC, and 6A5 in hexadecimal converts to 1701. As you all know, NCC-1701 is the registry number of the [USS Enterprise](#).
- ⓘ According to Google, the rubbery new HDMI cable will reduce Wi-Fi interference from nearby EMF sources, by putting some extra distance between the dongle and your TV.

Step 4



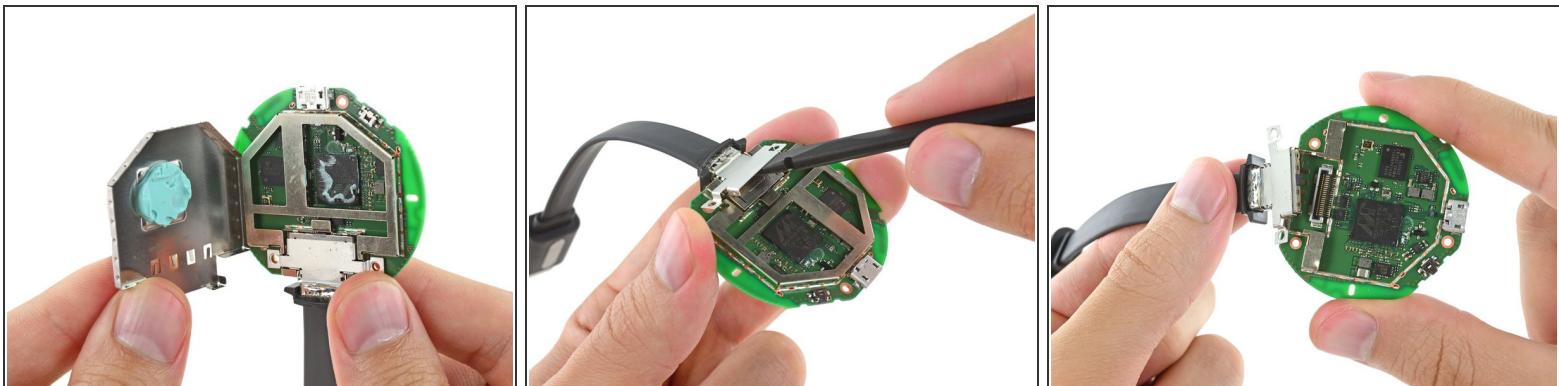
- Unlike its [first iteration](#), the Chromecast 2015 proves to be rather tricky to open.
- Around the rim of the casing sits a small ring of surprisingly stubborn adhesive. It took a fair bit of effort to separate the two pieces with our trusty pry tools.
- After plenty of prodding and prying, the top cover finally comes free—giving us a preliminary peek at the new Chromecast, in all its tiny glory.

Step 5



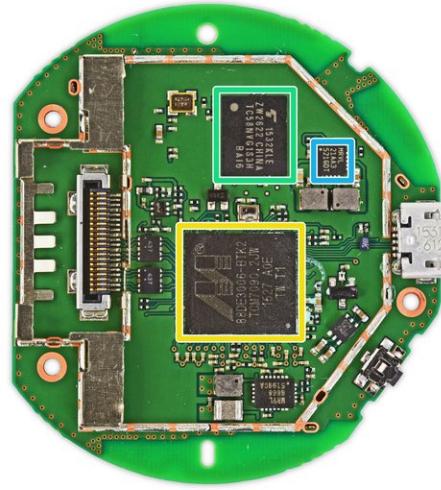
- Having blown the lid off the new Chromecast, we encounter three T-5 screws securing the EMI shield and motherboard to the bottom case.
- We spudger up the motherboard, only to find it held in place by... bubble gum?
 - i* On closer inspection that's actually thermal paste—a lot of it.
 - Hopefully that means this Chromecast won't have the [overheating](#) issues that plagued the original.
- i* Those darker areas around the edge of the board are integrated dual-band [PIFA](#) antennas. Although this technology is similar to that used in the original Chromecast, this version actually has an adaptive three-antenna array to select the best signal.

Step 6



- Lifting away our first EMI shield reveals more ~~Hubba Bubba~~ thermal paste!
 - And even more underneath the second EMI shield. That's three—count 'em, three—gum-sized dollops of thermal paste, in a device roughly the size of a silver dollar.
- The HDMI cable sports a super-durable design, what with its tough rubbery exterior, heavily-soldered connector, and bolted-down connector bracket.
 - ⚠ If you're the type of person who likes to carry things around by their cables, you're probably safe in this instance.
- After we pry up the bracket, the HDMI cable flies away free—leaving just the motherboard bits of the device.

Step 7



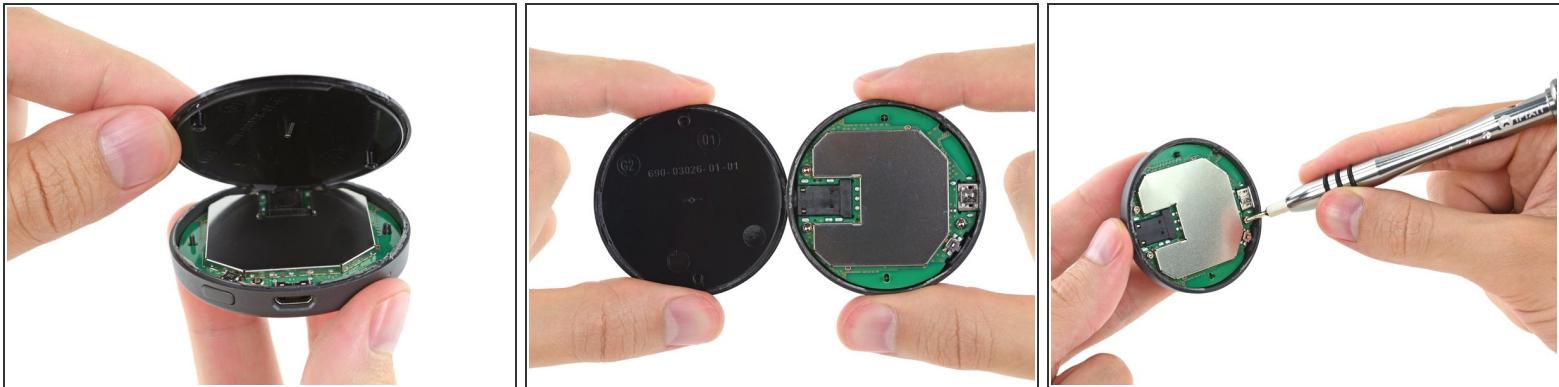
- With the pesky plastic set aside, we turn our attention to the heart of this device: Silicon!
 - Marvell Avastar [88W8887](#) VHT WLAN, Bluetooth, NFC and FM Receiver
 - Samsung [K4B4G1646D-BY](#) 4 Gb DDR3L SDRAM
- And on the reverse...
 - Marvell Armada [88DE3006](#) 1500 Mini Plus dual-core ARM Cortex-A7 media processor
 - Toshiba [TC58NVC1S3HBA16](#) 2 Gb NAND Flash Memory
 - MRVL 21AA3 521GDT—likely Marvell Semiconductor DC-DC regulator

Step 8



- Can't get enough teardown? Neither can we! With one dongle deftly dispatched, we can now focus on its audio-only counterpart: model **RUX-J42**.
- Specs on the Chromecast Audio:
 - Dual-band Wi-Fi 802.11b/g/n/ac
 - Multidirectional antenna array
 - USB-powered
 - Combination 3.5 mm and mini-TOSLINK socket
 - Doubles as handy backup puck for regulation air hockey tables

Step 9



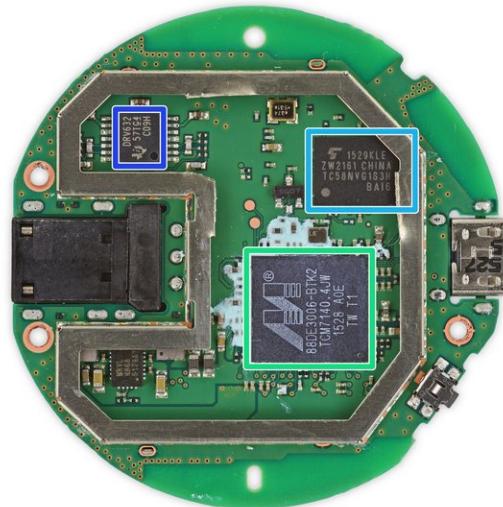
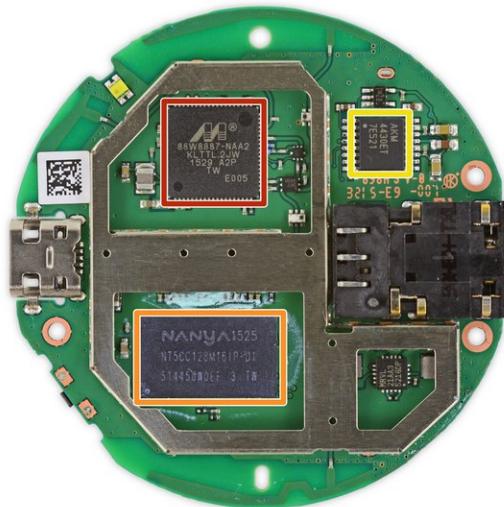
- Cracking open the Chromecast Audio gives us our first face-to-face with some familiar-looking hardware.
- Just as in the video-streaming variant, only three Torx screws stand in the way of removing the motherboard.

Step 10



- Although the Chromecast 2015 and Audio have some external differences, they're very similar internally—right down to the gobs of baby blue thermal paste.
- In addition to the heat sink, both models also house two functional plastic bits in the lower case: a light guide for the LED indicator light, and a nifty lil' reset button.

Step 11



- We're *finally* in deep enough to see some differences between these two—some hardware components are the same as in the HDMI version, although we spy a couple Audio-specific ICs as well:
 - Marvell Avastar [88W8887](#) VHT WLAN, Bluetooth, NFC and FM Receiver
 - Nanya [NT5CC128M16IP-DI/EK](#) DDR3L 2 Gb SDRAM
 - AKM [AK4430](#) 192kHz 24-Bit Stereo DAC
- On the reverse:
 - Marvell Armada [88DE3006](#) 1500 Mini Plus dual-core ARM Cortex-A7 media processor
 - Toshiba [TC58NVG1S3HBA16](#) 2 Gb NAND Flash Memory
 - Texas Instruments [DRV632](#) DirectPath 2-VRMS pop-free stereo line driver

Step 12



- We've arrived at the conclusion of our double feature teardown—and, once again, we've decided **not to assign a repairability score to either of the 2015 Chromecasts.**
- *i* Ultimately any device like those in the Chromecast family will be the same story—a board in a box. There is very little to repair in the event of an internal failure.
- That said, we absolutely love the internally detachable HDMI cable. It adds longevity to the 2015 Chromecast by addressing what is likely to be the most common problem—a damaged plug or loose HDMI connection.