



# Nintendo Classic Mini NES Teardown

Teardown of the NES mini console from Nintendo done in October 2017.

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## INTRODUCTION

We're all just kids at heart, so when we found out Nintendo was relaunching the NES as a nostalgia emulator, *only cuter*, we were pretty stoked. What will the insides of a 2016 refresh of a 1985 Nintendo Entertainment System look like? After a bit of gaming... we're tearing down to find out!

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### TOOLS:

- [Phillips #00 Screwdriver](#) (1)
- [Tweezers](#) (1)

## Step 1 — Nintendo Classic Mini NES Teardown

Nintendo

NES Classic Edition



- More than 30 years after the release of the original [NES console](#), Nintendo delights us with a fun-sized version of this classic.
- This little emulator box comes along with:
  - 30 pre-installed games
  - HDMI output
  - USB port for power support
  - 1 game controller
- Just for fun we compared a classic cartridge to this Classic Edition—they're roughly the same size. How far computers have come!

## Step 2



- It's playtime! We ignore the warnings about extended gaming and start opening this treasure up.
- We peel off some rubber feet and find standard, simple Phillips screws.
- Lifting off the lower case, we take a look into the lid and find—nothing.

## Step 3



- Turns out everything is secured in the lower case, and "everything" isn't all that much.
- We immediately start punching through cables.
  - You heard that right, Mario may look like he's head bopping those blocks, but [it's actually his fist](#)
- A grand total of three connectors (button board, controller 1, and 2) later: [Level 1 complete!](#)

## Step 4



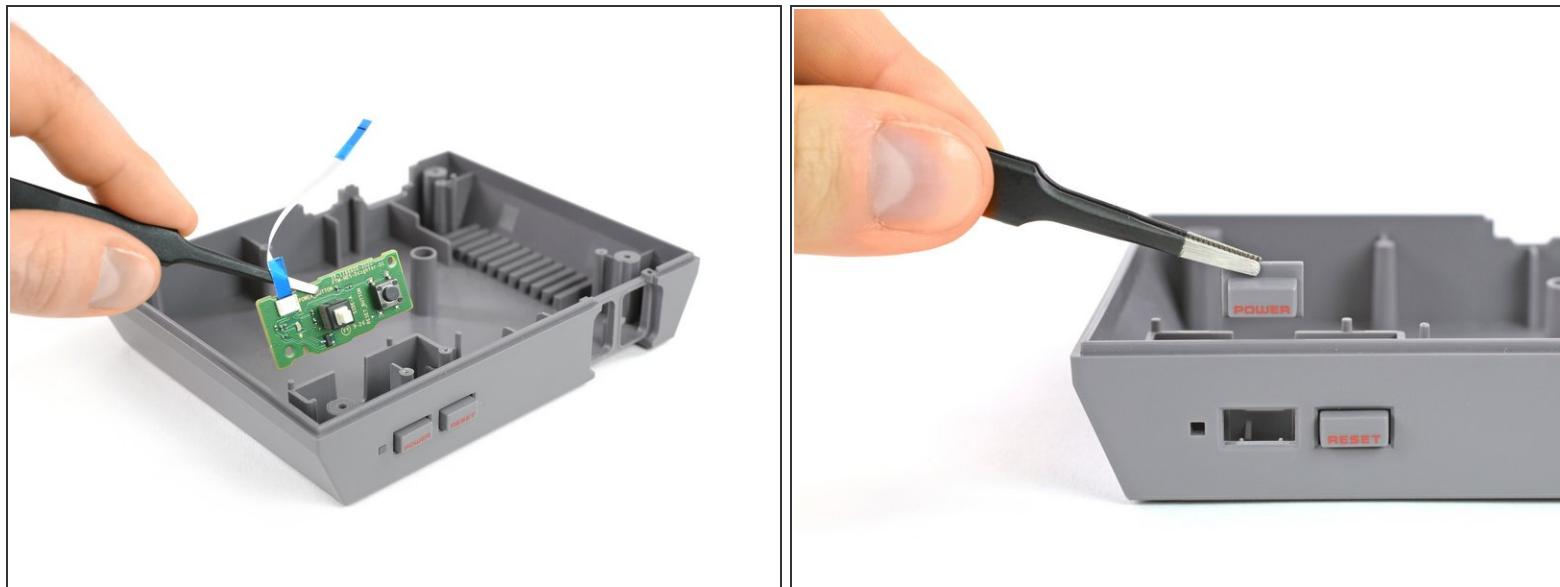
- The motherboard is secured under a nice metal shield, likely for heat dissipation and probably structural support.
- De-shielded we see the mighty fields of... wait these look like [chips we've seen before](#).
  - Allwinner R16 quad core Cortex A7 processor with a Mali-400MP2
  - 512 MB of Macronix MX30LF4G18AC-TI 4Gbit NAND Flash memory (as opposed to the Spansion branded memory found in the SNES)
  - 256 MB of SKhynix 2Gbit DDR3 SDRAM
  - AXP223 PMU

## Step 5



- While the console only comes with one controller, you've got the classic Player 2 option available. At least until we remove these ports!
- *(i)* The ports are the same as the one on the Wii Remote. So you can connect your Wii Classic Controller to the NES Classic.
- As you may have guessed, these ports are updated from the [controller ports of the original NES](#) and Famicom units.
- We know the standard "blow on it" fix doesn't always work, so we're happy to see modularity here. Unfortunately, the USB and HDMI ports were both soldered to the motherboard.

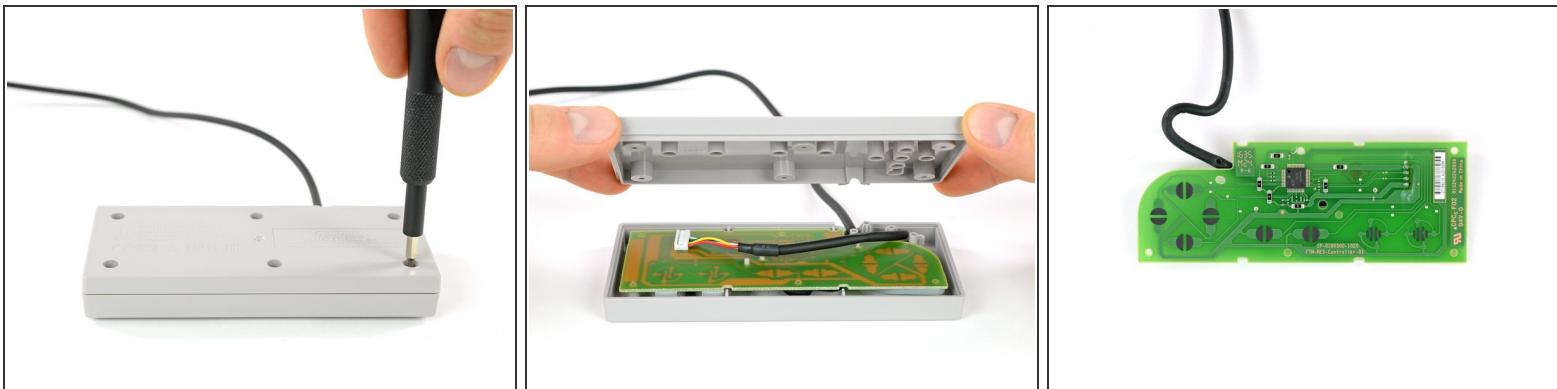
## Step 6



- The final countdown brings us to: the button assembly!
- This self-proclaimed daughterboard contains the (nicely labeled) power and reset button, as well as a status LED.

*(i)* Notably missing from this console is the [expansion port](#) found in the original model. Since it never got used in the original consumer edition, probably safe to say we're not [missing out on much](#).

## Step 7



- And now for the bonus level: controller teardown!
- The screws on this controller are readily visible, no rubber plugs here. Inside we find: a bare board with a single connector.
- The cable is nicely threaded inside to allow some slack, to relieve stress on the connector.
- The front side of the board is almost as bare. A single chip, some passive components, and some contact patches for the buttons.
- *(i)* These buttons act just like many remote controls, when pressed, the button bridges the gap between the conductive paint, completing a circuit—making Mario do something cool!

## Step 8



- That's all there is! While there aren't many components, there are definitely more than 8 bits.
- Okay, we admit, that was a pretty dumb joke.

## Step 9 — Final Thoughts



- Nintendo classic mini NES Repairability: **8 out of 10** (10 is easiest to repair).
  - Only standard Phillips screws are used.
  - No breakable plastic clips or strong adhesive is used.
  - Many components are modular including the button board and controller ports.
- The NES Classic ships with solid state games, this reduces the wear on the device, but means upgrades are probably not an option.
- The HDMI and USB ports are soldered to the mainboard which makes for a more complicated repair.