



# Mac mini Late 2012 Teardown

Released October 23, 2012. Available with Core i5 or Core i7 and Apple Fusion Drive.

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## INTRODUCTION

Apple is shrinking! No, not in the AAPL stock way (that's high as ever), but in the 'Let's name everything *mini*' way. Along with the announcement of the iPad mini on October 23rd (teardown coming soon; we promise) came the new and improved Mac mini, the 2012 iteration of the optical-drive-less mini [from last year](#). With the current trend, we look forward to maybe one day tearing down a smaller version of the Mac mini: the Mac mini mini. But until then, we content ourselves with tearing into the Mac mini Late 2012.

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## TOOLS:

- [Mac Mini Logic Board Removal Tool](#) (1)
- [Phillips #00 Screwdriver](#) (1)
- [iFixit Opening Tools](#) (1)
- [Spudger](#) (1)
- [T6 Torx Screwdriver](#) (1)
- [T8 Torx Screwdriver](#) (1)

## Step 1 — Mac mini Late 2012 Teardown



- Good things come in mini packages. This mini is packing:
  - 2.5 GHz dual-core Intel Core i5 or 2.3 GHz quad-core Intel Core i7
  - 500 GB hard drive or 1 TB hard drive configurable to a 1 TB Fusion Drive or 256 GB solid-state drive—upgradable with an extra hard drive or SSD using our [dual hard drive kit](#)
  - 4 GB, 8 GB, or 16 GB of DDR3 SDRAM
  - Intel HD Graphics 4000
  - Thunderbolt and HDMI ports
  - SDXC card slot

 This mini lacks an optical drive, just like its [predecessor](#).

## Step 2



- It's beginning to feel like [Groundhog Day](#). The same model number (A1347) has graced the 2011 and 2010 minis.
- The port layout is consistent with last year's model:
  - 10/100/1000BASE-T Ethernet
  - FireWire 800
  - HDMI (HDMI to DVI adapter included)
  - Thunderbolt (supports high-speed I/O and Mini DisplayPort)
  - Four USB 3.0 ports (an upgrade from last year's 2.0)
  - SDXC card reader

## Step 3



- [Twist and shout!](#)
- A simple twist of the bottom cover and we're in. That is plus one for repairability.
- Upgradeable RAM!! Oh, how we've [missed you!](#)
- The 2012 iteration of the Mac mini is equipped with PC3-12800 DDR3 RAM.
- *(i)* It's refreshing to see an Apple product with user replaceable/upgradeable RAM.

## Step 4



- We're fans of easily removable fans.
- Easily accessible fans mean [soot sprites](#) better run for cover, because cleaning dirty fans is no problem.
- Need to clean your fan? Directions can be found [here](#).

## Step 5



- We remove the fan cowling, eager to get at the Wi-Fi antenna plate.
- We are really starting to suspect that [Dr. Emmett Brown](#) had something to do with this mini as the antenna board and grille look identical to the last [two renditions](#).

## Step 6



- Here we find the legendary [Mac mini logic board removal tool](#) in its natural habitat.
- Note the ease of use as the tool swoops in to release the logic board of the mini.

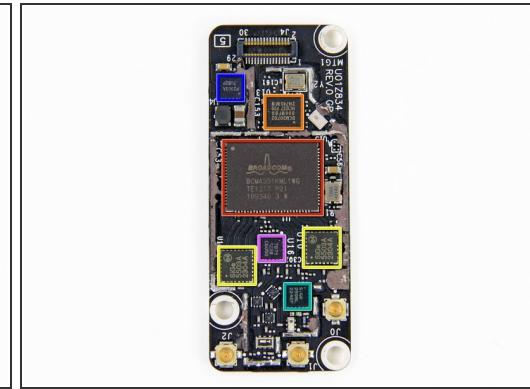
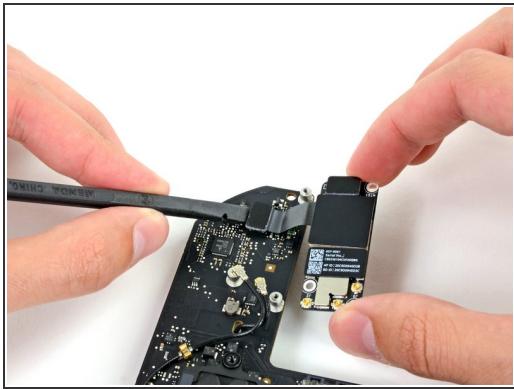
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## Step 7



- The first component off the logic board assembly is the speaker assembly.
- The speaker cable was arranged in a [twisted pair](#), probably to reduce EMI that could distort the sweet, iconic tones of the [Apple startup sound](#).

## Step 8



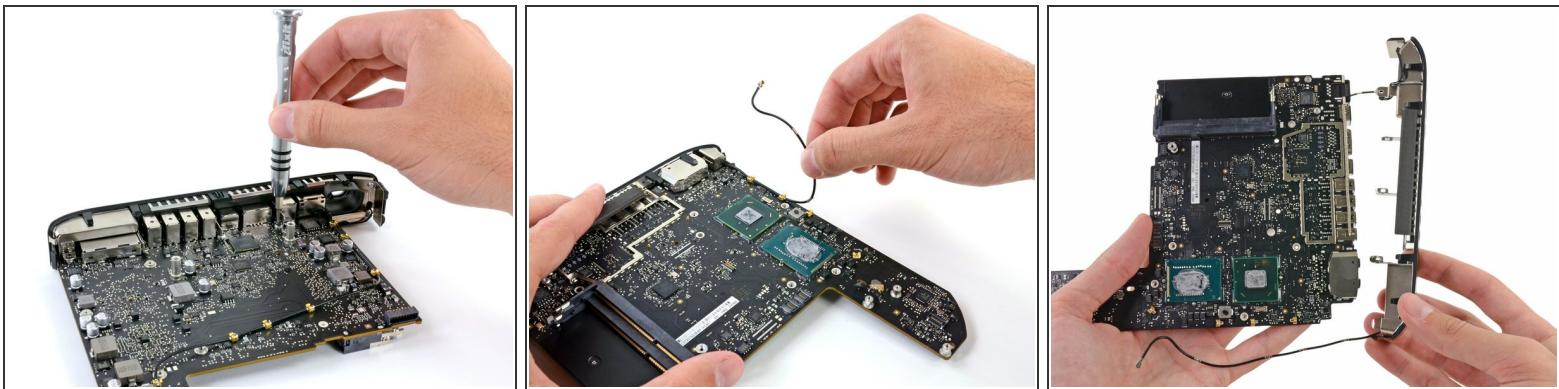
- The Wi-Fi board, labeled BCM94331PCIEBT3B, stands no chance against our spudger as we make it truly wireless.
- Removing the EMI shields allows us to peek at the ICs on the communications board:
  - Broadcom [BCM4331](#) 802.11 a/b/g/n Wi-Fi chip
  - Broadcom [BCM20702](#) Bluetooth 4.0 transmitter
  - SiGe [5503A 2304A](#) Dual Band 802.11a/b/g/n Wireless LAN Front End
  - SiGe 2598L
  - P2303A TUB2P
  - 7871 1228 C6050

## Step 9



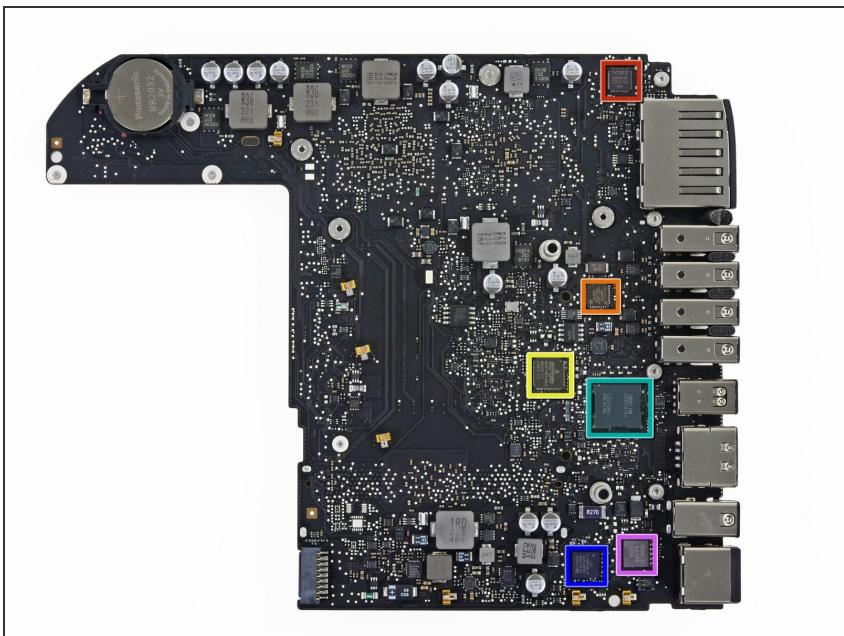
- The heat sink is next to go.
- Apple has really keyed in on their boomerang-style heat sink abilities—and for that, we applaud them. We know boomerangs can be [tough to master](#).
- [Similar, again!](#) We have not tried installing old 2011 mini parts in the 2012 mini, but we are certainly not ruling out the possibility!

## Step 10



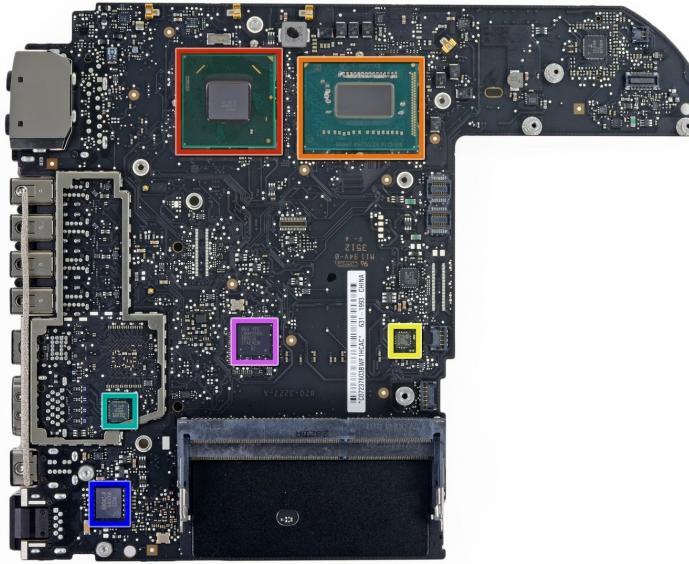
- A series of screws and tightly wrapped antenna cables secure the rear I/O panel shield to the logic board.
- A few twists of our [precision aluminum driver with a T6 Torx bit](#) and some cable de-routing is all it takes to remove the shield.

## Step 11



- Some mini players on the top of the not-so-mini logic board:
  - Cirrus Logic 4206B Audio Controller
  - SMSC [USB2512B](#) USB Hub Controller
  - Broadcom BCM57765 gigabit ethernet and memory card controller
  - Intel L232TB45 Thunderbolt Port Controller
  - LSI L-FW643E-2
  - DELTA 8904C-F Filter

## Step 12



- The rear side of the logic board:
  - Intel HM77 (SLJ8C) platform controller hub
  - Intel V227C254 2.5 GHz dual-core i5
  - SMSC 1428-7 system management bus temperature sensor
  - Parade PS8401A HDMI/DVI level shifter
  - DELTA 8904C-F Filter
  - LM4FS1AH

## Step 13



- Tucked away neatly near the rear of the mini is the hard drive.
- Our model came with a 500 GB Hitachi hard drive.
- The mini is one of the Macs launched with the [Fusion Drive](#).
- Apple's Fusion Drive is not to be confused with the [Impulse Fusion Drive](#) of [Star Trek](#).

## Step 14



- Next up, we displace the power of the mini.
- It is beginning to feel repetitive to say how repetitive Apple is in the design of the mini; nonetheless, the power supply appears identical to [last year's model](#).
- *(i)* In this case, we have to say that repetition is a good thing, as the mini continues to be one of the most repairable devices that Apple produces.
- Just like last year, the power supply provides 85 watts to the Mac mini—that's the same kind of electric juice as the [AC adapter](#) for a 15" or 17" MacBook Pro.

## Step 15



- ⓘ We were especially curious to see if this new Mac mini is still compatible with our [dual hard drive upgrade kit](#), so we got to testing it!
- Following along with our own [guide](#) for the 2011 model was a snap, and everything fit perfectly.
- After a quick reassembly, we booted this guy up for the first time—with 50% extra storage. Success!

## Step 16



### REPAIRABILITY SCORE:



- Mac mini Mid 2012 Repairability: **8 out of 10** (10 is easiest to repair).
  - No proprietary screws are found within the device.
  - You can easily upgrade your RAM and hard drive, as well as add a secondary drive.
  - There's no glue anywhere inside that needs to be removed while disassembling the mini.
  - The CPU is soldered to the logic board and not user-upgradeable.
  - While not difficult to do, you still have to remove almost all the internals in order to replace the power supply.