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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.

Want to be kept in the loop about all of our latest teardowns, big and small? Follow us on [Twitter](#), or check us out on [New Myspace](#) to keep up with all the latest iFixit news.

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)
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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](#).

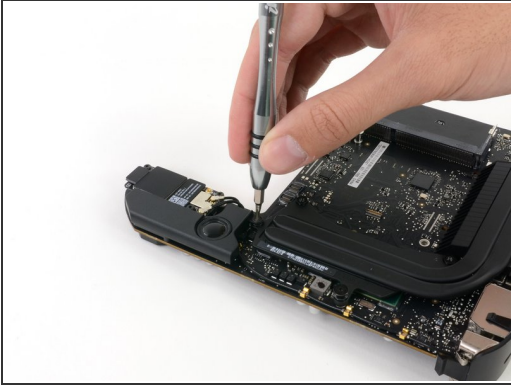
Step 6



- Here we find the legendary [Mac mini logic board removal tool](#) in its natural habitat.
- ① Note the ease of use as the tool swoops in to release the logic board of the mini.

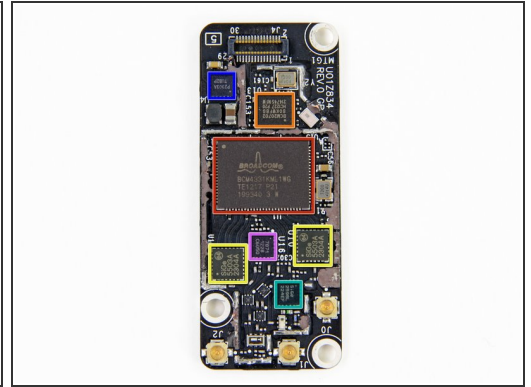
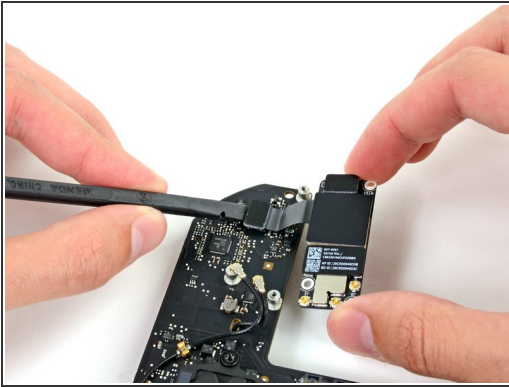
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Step 7



- 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



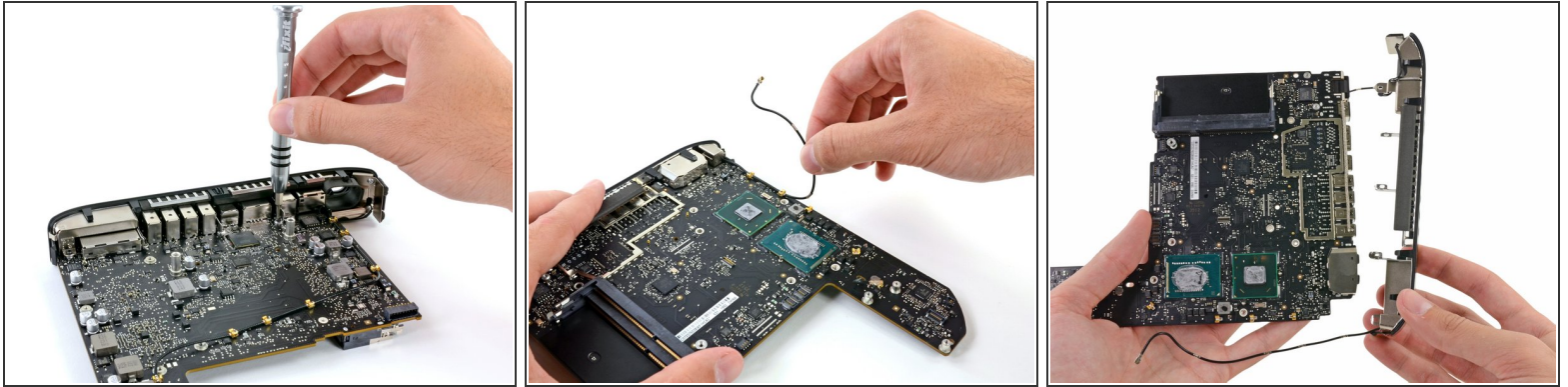
- The Wi-Fi board, labeled BCM94331PCIEBT3B, stands no chance against our spudger as we make it truly wireless.
- Removing the EMI shields allows us to peek at the ICs on the communications board:
 - Broadcom [BCM4331](#) 802.11 a/b/g/n Wi-Fi chip
 - Broadcom [BCM20702](#) Bluetooth 4.0 transmitter
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

Step 9



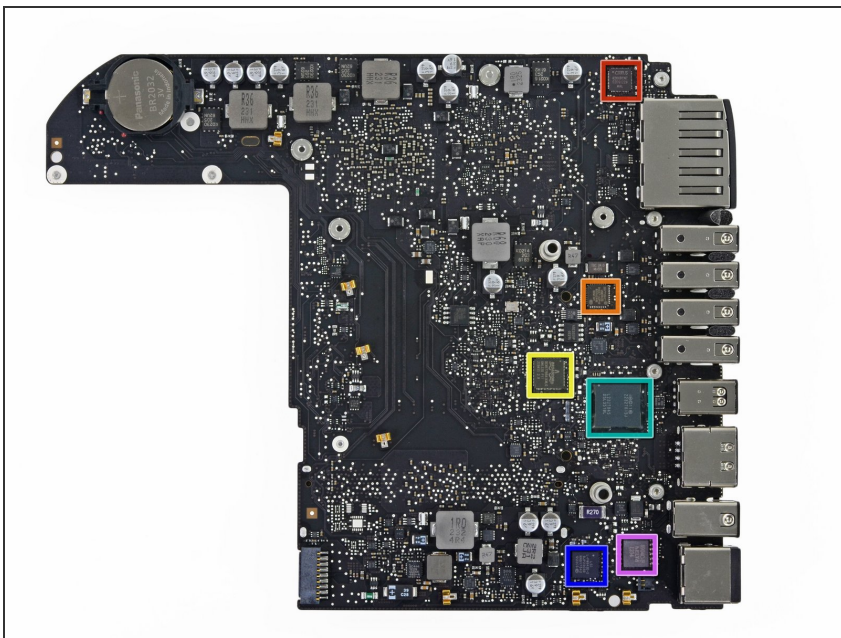
- The heat sink is next to go.
- Apple has really keyed in on their boomerang-style heat sink abilities—and for that, we applaud them. We know boomerangs can be [tough to master](#).
- [Similar, again!](#) We have not tried installing old 2011 mini parts in the 2012 mini, but we are certainly not ruling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

Step 10



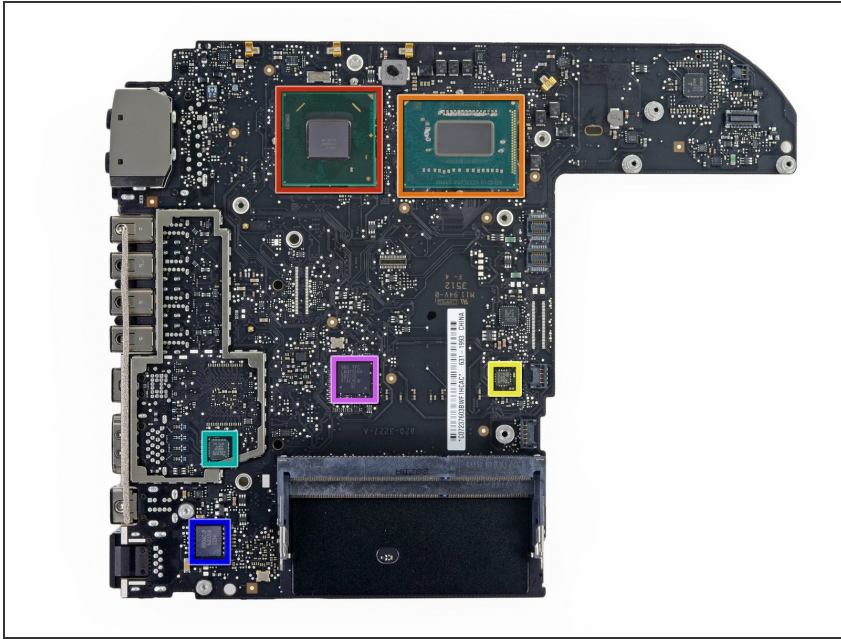
- A series of screws and tightly wrapped antenna cables secure the rear I/O panel shield to the logic board.
- A few twists of our [precision aluminum driver with a T6 Torx bit](#) and some cable de-routing is all it takes to remove the shield.

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

The left photograph shows a pair of hands lifting a black plastic cover from a silver hard drive. The cover is being held up, revealing the drive's internal components. The right photograph shows the removed cover, which has a white label with the following text:

HITACHI
www.hitachigst.com
C-8-NC190d
V6220-p05L
2587-V692L-WJ
982L-V6922-WJ 5457
S T
Don't shock/
push cover
SATA
5V 700mA DC
500GB 2.5inch AT 7mm
P/N: 0J23845 MLC DA5206
JAG87 655-1730A CQ2237420P4DT7NA8
S/N 3RJK3H9G
DO NOT COVER
THIS HOLE
WARRANTY VOID
IF ANY LABEL,
SCREW IS REMOVED
OR BROKEN
SEP-12
MADE IN THAILAND BY Hitachi Global
Storage Technologies (Thailand) Ltd. TD

- 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](#).
- ❗ 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



i 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



- 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.