# EXHIBIT A

Motorola Mobility, Inc. v. Apple, Inc.
Doc. 366 Att. 1
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**EXHIBIT A**

## UNITED STATES PATENT NO. 5,710,987

## PRELIMINARY INFRINGEMENT CONTENTIONS[1]

**Accused Apple Products:** Apple iPhone 4, Apple iPhone 4S, Apple iPhone 5[2].

Apple directly infringes the '987 patent, either literally or through the doctrine of equivalents, pursuant to 35 U.S.C. § 271(a).

In addition to Apple's direct infringement of the '987 patent through its development, testing, use, distribution and sale of its products and services, Apple also indirectly infringes the '987 patent pursuant to 35 U.S.C. § 271(b) and (c). End-users and others in the distribution channel of the Accused Apple Products directly infringe this claim by using, selling, offering for sale, and/or importing these devices into the United States. Apple contributes to and induces infringement through its promotion and provision of marketing, sale and/or technical support of the Accused Apple Products and associated services in the United States, and through the design, marketing, manufacture, sale, and/or technical support of the Accused Apple Products. Apple supplies Accused Apple Products and actively encourages the use, sale, offer for sale, and importation of the same in the United States through the promotion and provision of marketing literature, promotion, and user guides, which induces and results in direct infringement. Apple has known or should have known that these actions would cause direct infringement of the '987 patent and did so with specific intent to encourage direct infringement, at least as of 2007, when Apple and Motorola participated in talks regarding the licensing of Motorola's patent portfolio. On information and belief, in connection with those negotiations, Apple has reviewed said portfolio, including Motorola's '987 Patent. Moreover, Apple has known of the '987 patent since at least October 6, 2010, when Motorola filed its Complaint, attaching the '987 patent as an exhibit. Despite knowing of the '987 patent, Apple continues to make, use, offer to sell, and sell its products and has continued to circulate marketing literature and user guides encouraging users of the Accused Apple

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[1] Motorola Mobility's investigation is ongoing and discovery is not yet complete. Apple has, thus far, not produced all of its documents and source code relevant to the accused methods and products. Motorola reserves the right to supplement or amend these contentions based on subsequent discovery or disclosures made pursuant to FRCP 26. Motorola further reserves the right to amend and supplement its contentions with respect to any products released by Apple subsequent to the service of these initial infringement contentions, in accordance with the schedule set forth in the Court's Order of October 25, 2012. Further, to the extent Apple releases any new products with the same functionality accused of infringement in the Accused Apple Products in these contentions, Motorola reserves the right to seek appropriate relief from the court in accordance with its order of October 25, 2012 and in accordance with the Federal Rules of Civil Procedure.

[2] The term "Apple iPhone 5" means Apple's new iPhone announced by Apple on September 12, 2012. *See* http://www.apple.com/pr/library/2012/09/12Apple-Introduces-iPhone-5.html.

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Products to infringe. Additionally, the identified features of the Accused Apple Products are material parts of the inventions of the asserted claims and have no substantial non-infringing uses.

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| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5**[3] |
|---|---|
| 13. A receiver including a user interface comprising: | Upon information and belief, Apple imports, manufactures, sells, offers to sell, and uses the Apple iPhone 4, which includes a receiver and several user interfaces, including a touch-screen display , volume control buttons, and speaker.<br><br>*See, e.g.*, iPhone 4 Technical Specifications, (http://www.apple.com/iphone/specs.html), accessed on May 12, 2011, MOTO-APPLE-0006037953_126659:<br><br>  <br>**Cellular and wireless**<br>▪ GSM model: UMTS/HSDPA/HSUPA (850, 900, 1900, 2100 MHz); GSM/EDGE (850, 900, 1800, 1900 MHz)<br>▪ CDMA model: CDMA EV-DO Rev. A (800, 1900 MHz)<br>▪ 802.11b/g/n Wi-Fi (802.11n 2.4GHz only)<br>▪ Bluetooth 2.1 + EDR wireless technology<br><br>*See also* iPhone Design, (http://www.apple.com/iphone/design/), accessed on May 12, 2011, MOTO-APPLE-0006037953_126949-50: |

[3] This chart provides Motorola's infringement analysis for the Accused Apple Products. Upon information and belief, the analysis set forth in this chart for the Apple iPhone 4 applies equally to the Apple iPhone 4S, and substantially in the same way to the Apple iPhone 5.

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| ’987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
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| |  <br>*See also*, iPhone 5 Technical Specifications, (http://www.apple.com/iphone/specs.html), accessed on 11/06/2012, MOTO-SDFL-0000016104: |

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|---|---|

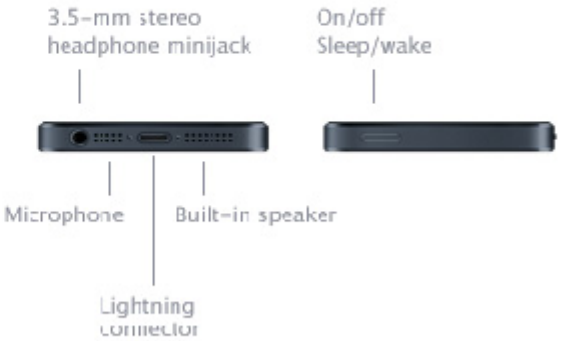
Cellular and Wireless

- GSM model A1428*: UMTS/HSPA+/DC-HSDPA (850, 900, 1900, 2100 MHz); GSM/EDGE (850, 900, 1800, 1900 MHz); LTE (Bands 4 and 17)
- CDMA model A1429*: CDMA EV-DO Rev. A and Rev. B (800, 1900, 2100 MHz); UMTS/HSPA+/DC-HSDPA (850, 900, 1900, 2100 MHz); GSM/EDGE (850, 900, 1800, 1900 MHz); LTE (Bands 1, 3, 5, 13, 25)
- GSM model A1429*: UMTS/HSPA+/DC-HSDPA (850, 900, 1900, 2100 MHz); GSM/EDGE (850, 900, 1800, 1900 MHz); LTE (Bands 1, 3, 5)
- 802.11a/b/g/n Wi-Fi (802.11n 2.4GHz and 5GHz)
- Bluetooth 4.0 wireless technology

*See id* at MOTO-SDFL-0000016105:

External Buttons and Controls


Connectors and Input/Output



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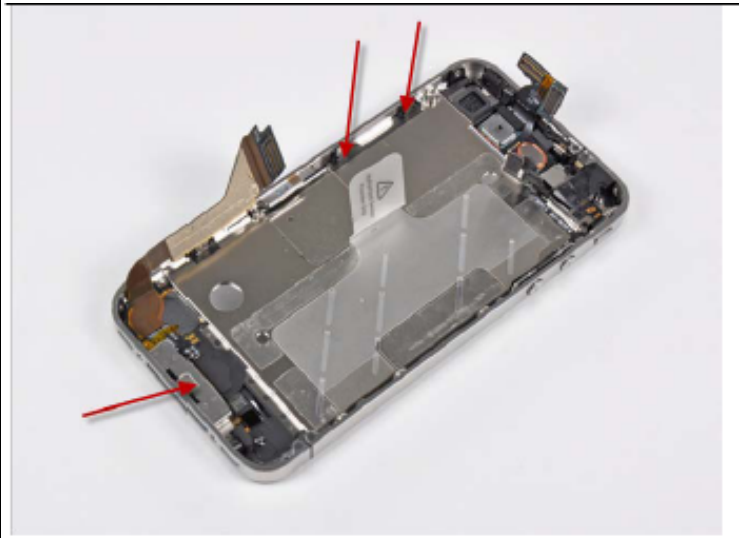
| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| a housing; | Upon information and belief, the Apple iPhone 4 contains a housing .<br><br>*See e.g.*, iPhone Teardown, (http://www.ifixit.com/Teardown/iPhone-4-Teardown/3130/2), accessed on May 13, 2011, MOTO-APPLE-0006037953_127193 (arrows and labels added):<br><br>  <br><br>*See e.g.*, iPhone Teardown, (http://www.ifixit.com/Teardown/iPhone-4-Teardown/3130/1), accessed on May 13, 2011, MOTO-APPLE-0006037953_127208 (arrows and labels added): |

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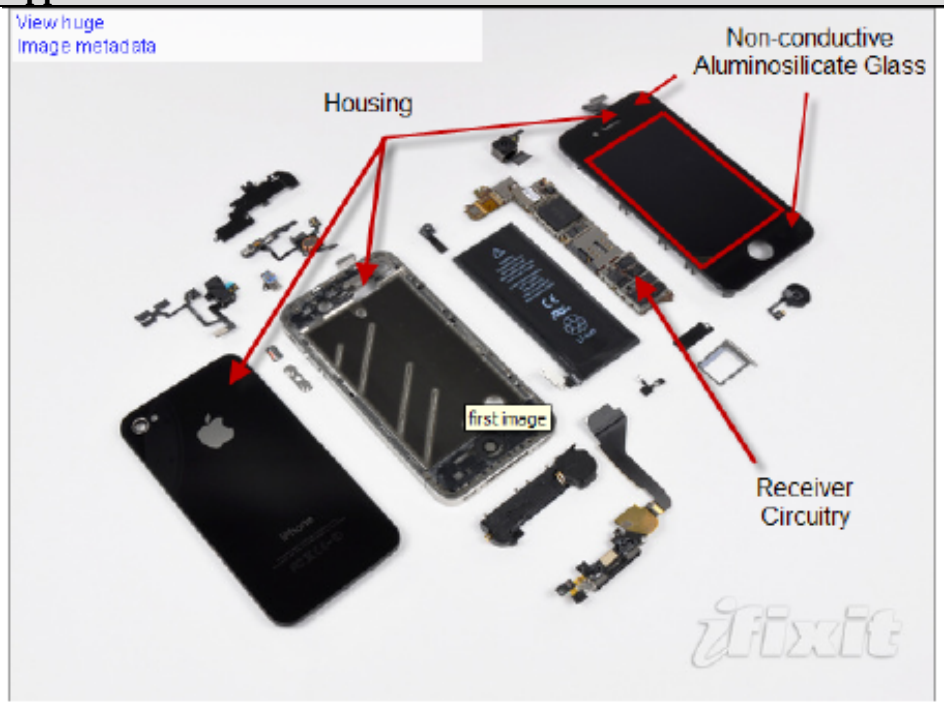
| ’987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
|---|---|
| |  <br>*See also* iPhone Design, (http://www.apple.com/iphone/design/), accessed on May 12, 2011, MOTO-APPLE-0006037953_126952: |

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| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| |  <br><br>*See also*, iPhone 5 Teardown, (http://www.ifixit.com/Teardown/iPhone+5+Teardown/10525/5), accessed on 11/06/2012, MOTO-SDFL-0000018710 (arrows and labels added): |

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| ’987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
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| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
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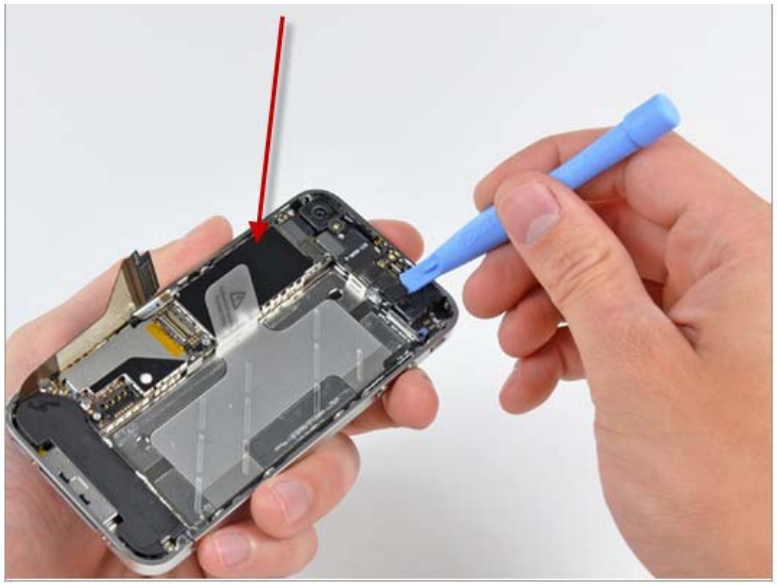
| receiver circuitry disposed in the housing; and | Upon information and belief, the Apple iPhone 4 has receiver circuitry disposed in the housing.<br><br>*See, e.g.*, iPhone Teardown, (http://www.ifixit.com/Teardown/iPhone-4-Teardown/3130/2), accessed on May 13, 2011, MOTO-APPLE-0006037953_127192-94 (arrows and labels added):<br><br>  <br>**Step 10**<br>● Removing one of the many connectors on the logic board.<br>● In our brief usage, we did notice that the phone is considerably warmer on the right side. This makes sense, as the logic board is located entirely along the right side of the phone. |

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| **’987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
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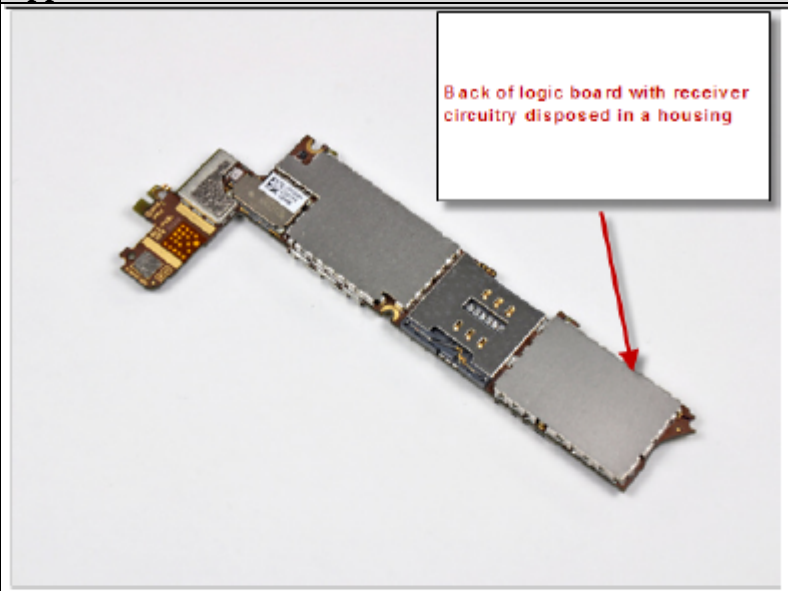
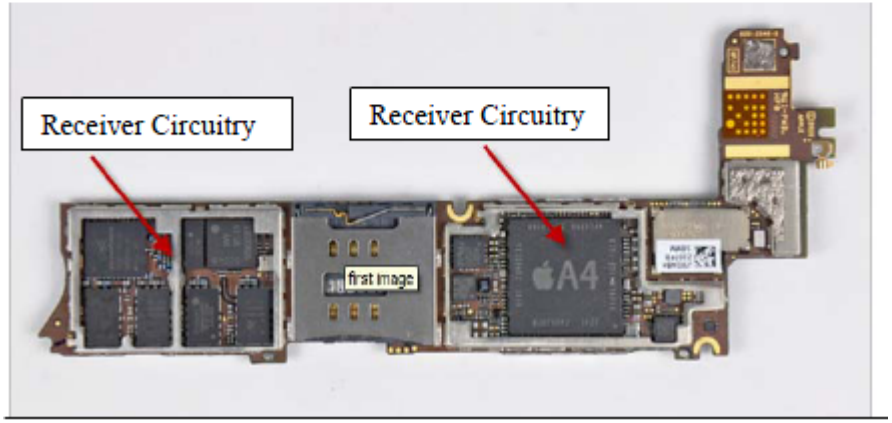
|---|---|
| |  <br>  |

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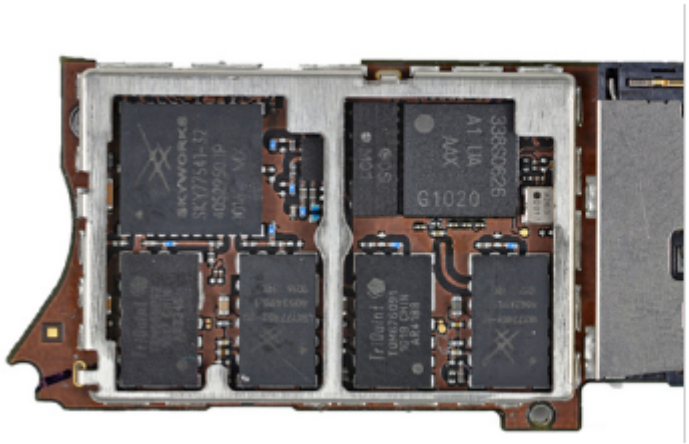
| ’987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
|---|---|
| |  |
| | *See also* iPhone Teardown, (http://www.ifixit.com/Teardown/iPhone-4-Teardown/3130/1), accessed on May 13, 2011, MOTO-APPLE-0006037953_127208 (arrows and labels added): |

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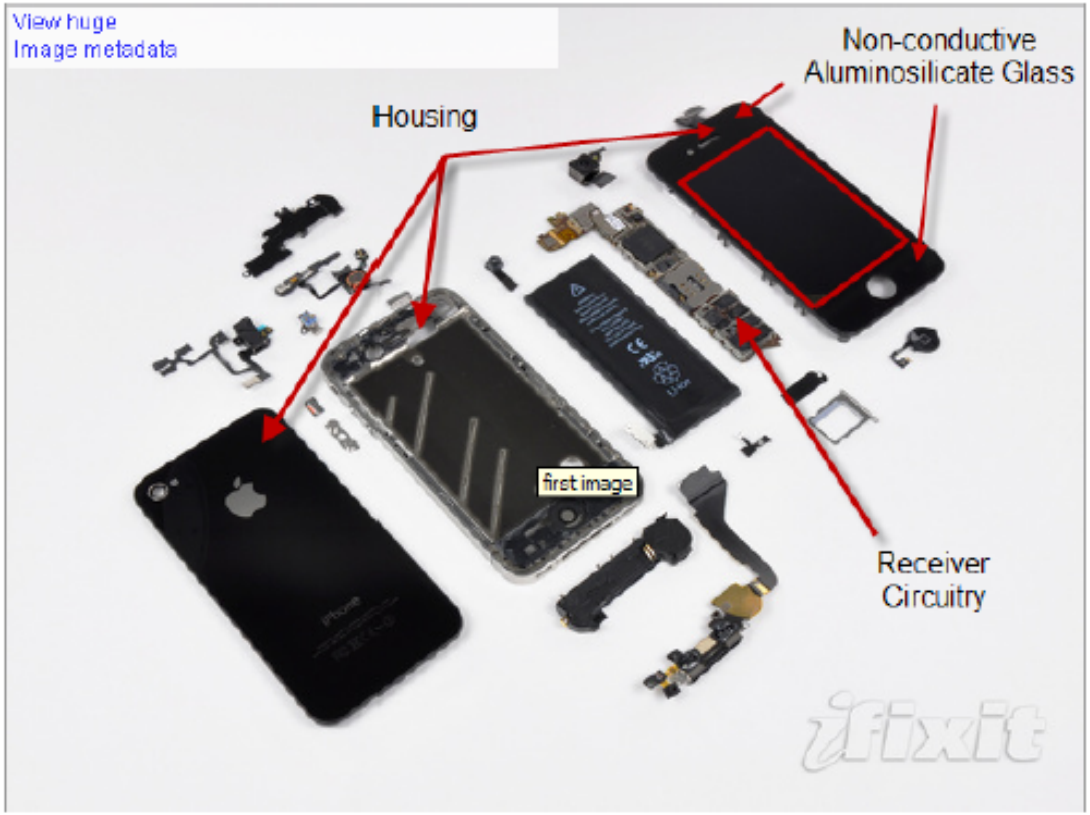
| ’987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
|---|---|
| |  |
| | *See also*, iPhone 5 Teardown, (http://www.ifixit.com/Teardown/iPhone+5+Teardown/10525/5), accessed on 11/06/2012, MOTO-SDFL-0000018710 (arrows and labels added): |

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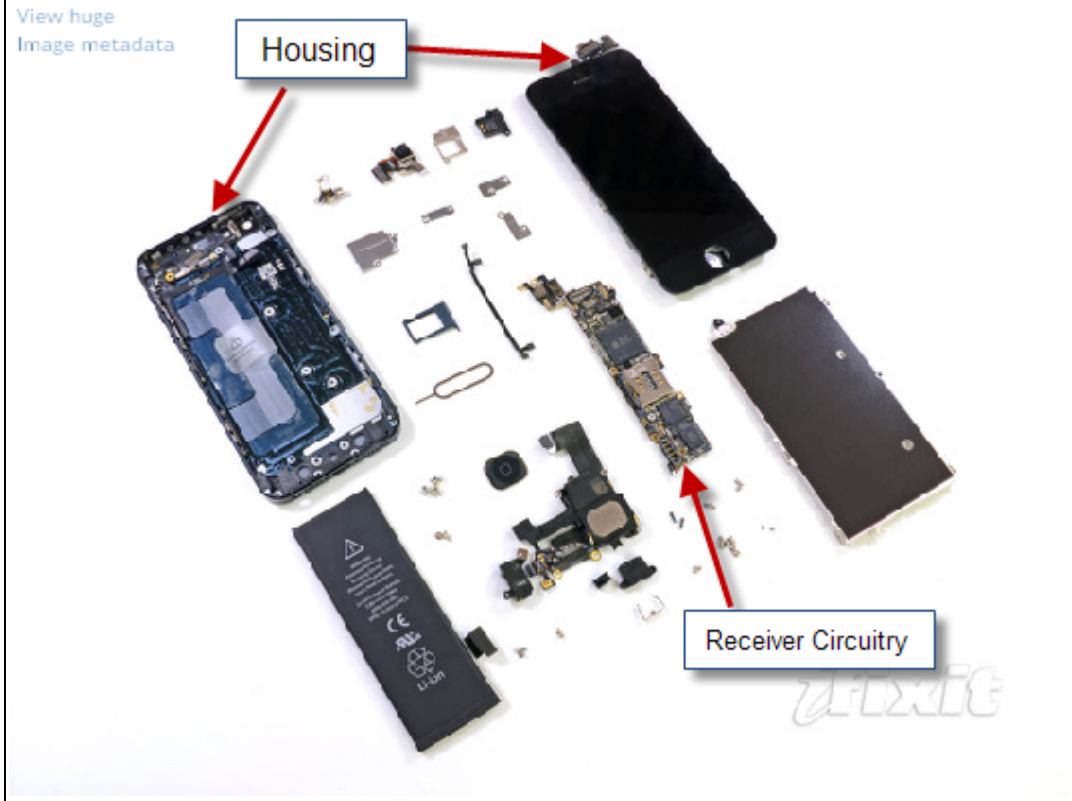
| **’987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| |  |
| | *See also*, iPhone 5 Teardown, (http://www.ifixit.com/Teardown/iPhone+5+Teardown/10525/2), accessed on 11/06/2012, MOTO-SDFL-0000018703: |

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| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
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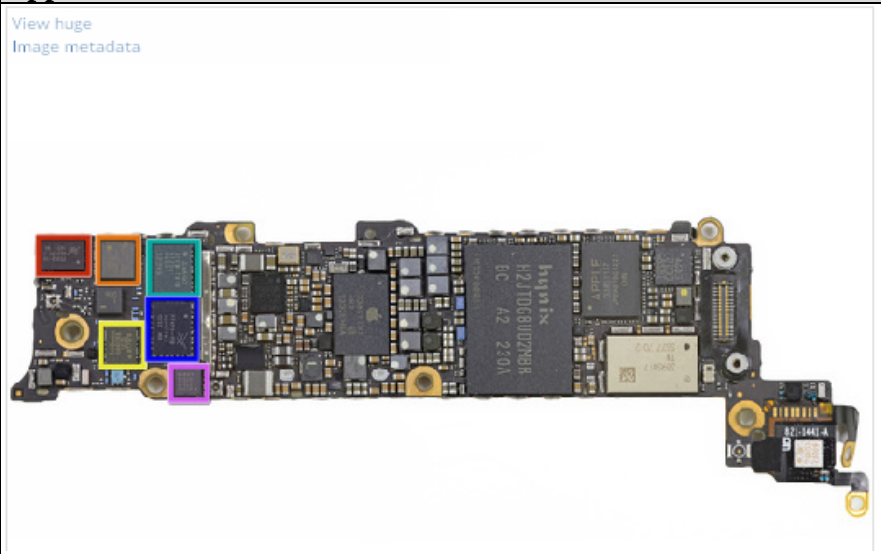
| |  |
| an antenna coupled to the receiver circuitry | Upon information and belief, the Apple iPhone 4 contains a cellular antenna and a Wi-Fi and Bluetooth antenna, each of which is coupled to the receiver circuitry. The stainless steel band on the outside of the iPhone 4 is coupled to and is part of both of the iPhone 4 antennas. |
| | *See, e.g.*, iPhone Design, (http://www.apple.com/iphone/design/), accessed on May 12, 2011, MOTO-APPLE-0006037953_126949:<br>  <br>*See also* iPhone Teardown, (http://www.ifixit.com/Teardown/iPhone-4-Teardown/3130/2), accessed on May 13, |

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| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5**[3] |
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| | 2011, MOTO-APPLE-0006037953_127193:<br>  <br>**Step 14**<br>● Apple has integrated the UMTS, GSM, GPS, Wi-Fi, and Bluetooth antennas into the stainless steel inner frame.<br>● The dual purpose stainless steel inner frame/antenna assembly addresses possibly the two biggest flaws consuming previous iterations of the iPhone: continuous dropped calls and lack of reception.<br>● Apple has gone a step further and tuned the phone to utilize whichever network band is less congested or has the least interference for the best signal quality, regardless of the actual signal strength. Early reports suggest this feature, while buggy in its early stages, will greatly improve the phone's reliability on AT&T's fragile network. |
| | *See also* Image of iPhone 4 Antenna, (http://fortunebrainstormtech.files.wordpress.com/2010/06/iphone-4-antennas.jpg), accessed on May 13, 2011, MOTO-APPLE-0006037953_127191: |

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| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
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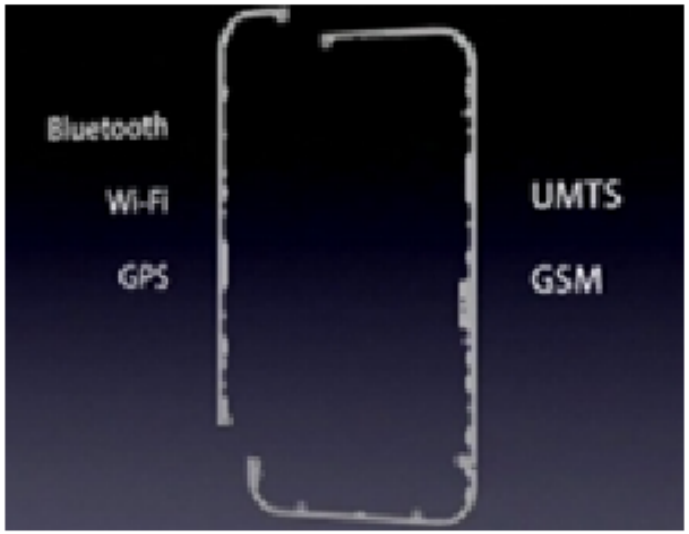
| |  <br>Image: Apple Inc. |
| | *See also*, iPhone 5 (http://www.ifixit.com/Teardown/iPhone+5+Teardown/10525/2), accessed on 11/06/2012, MOTO-SDFL-0000018702 (box added). |

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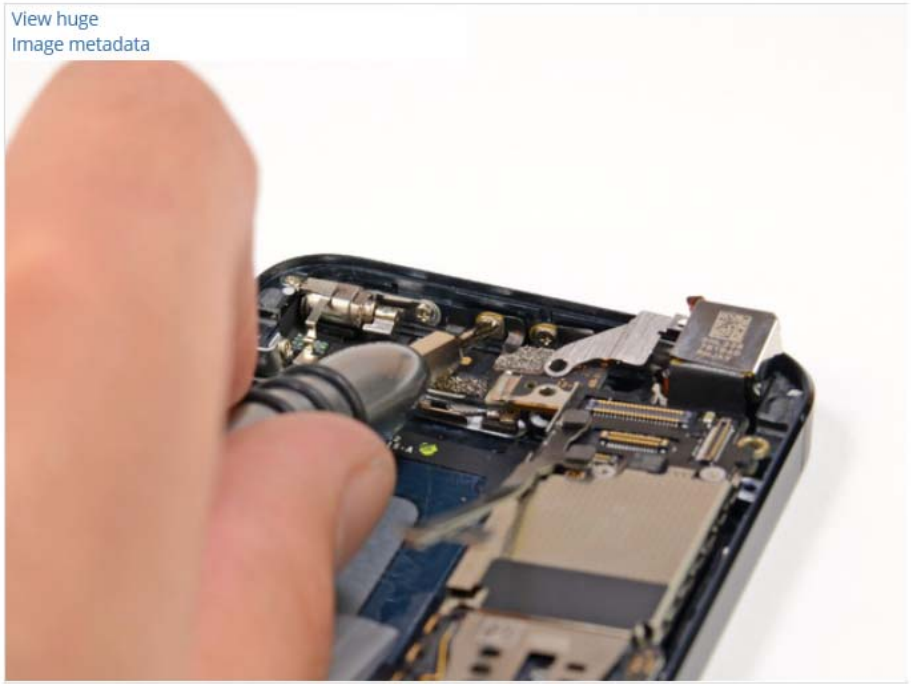
| |   |
| | *See also*, iPhone 5 (http://www.ifixit.com/Guide/Installing+iPhone+5+Wi-Fi+Antenna/10897/4) (Wi-Fi antenna coupled to the receiver circuitry), accessed on 11/06/2012, MOTO-SDFL-0000018673: |

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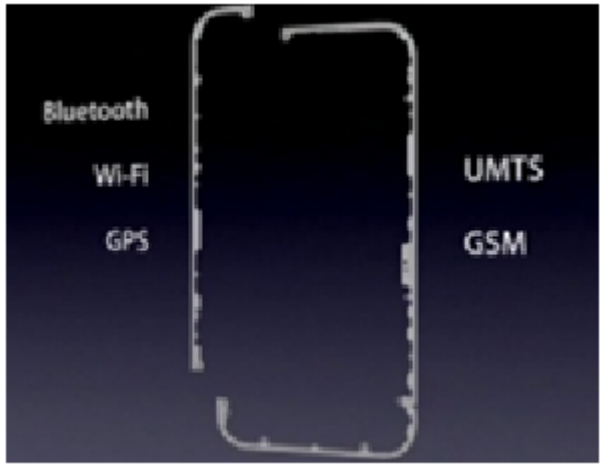
| wherein the antenna forms a loop surrounding at least a portion of the user interface and is disposed between an outside surface of the housing and the at least a portion of the user interface. | Upon information and belief, the antenna in the iPhone 4 forms a loop that surrounds a portion of the user interface. and is disposed between an outside surface of the housing and the at least a portion of the user interface.<br><br>Specifically, the iPhone 4 stainless steel band (the antenna) forms a loop surrounding the volume buttons, the speaker, and the touch-screen interface (each of which is a user interface).<br><br>See, e.g., Image of iPhone 4 Antenna, (http://fortunebrainstormtech.files.wordpress.com/2010/06/iphone-4-antennas.jpg), accessed on May 13, 2011, MOTO-APPLE-0006037953_127191:<br><br>  <br>Image: Apple Inc.<br><br>In addition, the stainless steel band is disposed between the outside surface of the aluminosilicate glass screen (part of the housing that contains the receiver circuitry) and (1) the volume buttons and (2) the speakers (user interfaces).<br><br>*See also* iPhone Design, (http://www.apple.com/iphone/design/), accessed on May 12, 2011, MOTO-APPLE-0006037953_126951 (arrows and labels added): |

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| ’987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
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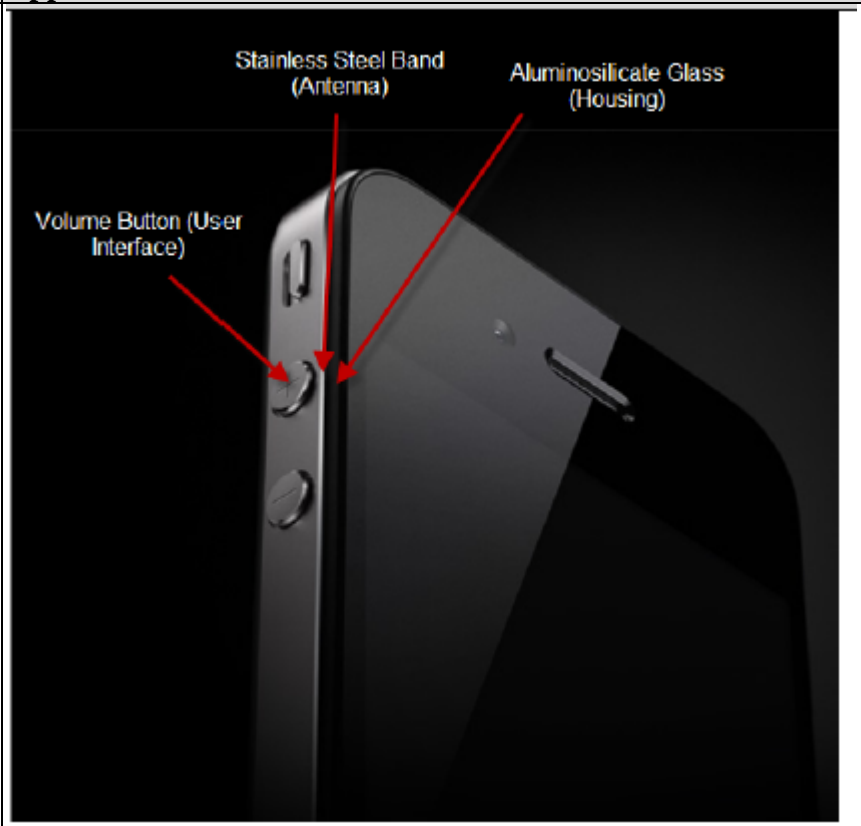
| |  <br>*See also* iPhone Design, (http://www.apple.com/iphone/design/), accessed on May 12, 2011, MOTO-APPLE-0006037953_126949: |

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| '987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
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| |  <br><br>*See also* (at 745-Apple11543563): "The iPhone 4 antenna is an exterior antenna which doesn't use internal space so we can add more battery in the phone and give it a longer battery life and there's some other advantages as well."<br><br>Upon information and belief, the antenna in the iPhone 5 is structured substantially in the same way as the one in the iPhone 4. Specifically, the iPhone 5 aluminum bezel (the antenna) forms a loop surrounding the volume buttons, the speaker, and the touch-screen interface (each of which is a user interface). In addition, the aluminum bezel is disposed between the outside glass screen (part of the housing that contains the receiver circuitry) and (1) the volume buttons and (2) the speakers (user interfaces).<br><br>*See e.g.*, iPhone 5 Design, (http://www.apple.com/iphone/design/), accessed on 11/06/2012, MOTO-SDFL-0000018642-43 (arrows and labels added): |

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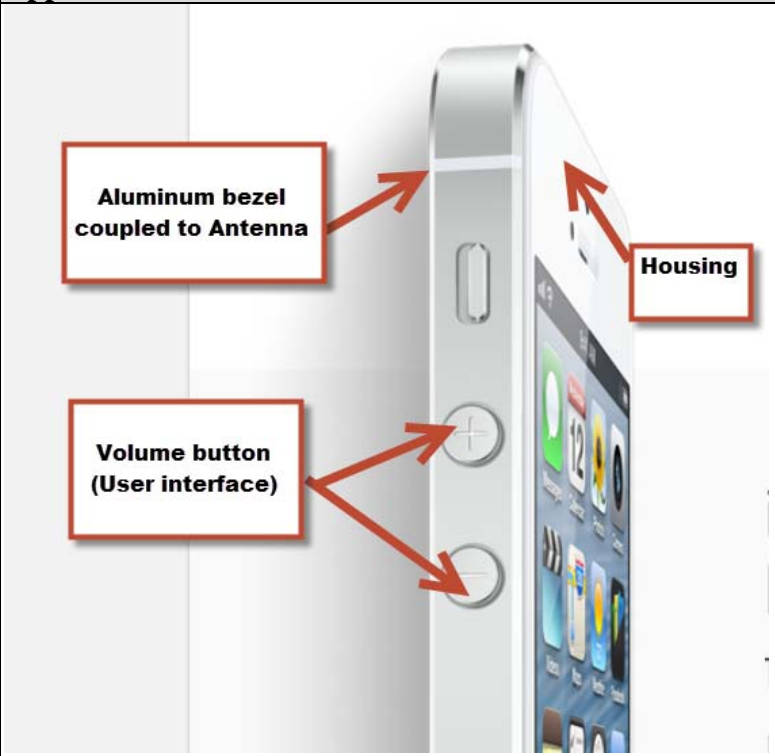
|---|---|
| |  |

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Never before has this degree of fit and finish been applied to a phone. Take the glass inlays on the back of iPhone 5, for instance. During manufacturing, each iPhone 5 aluminum housing is photographed by two high-powered 29MP cameras. A machine then examines the images and compares them against 725 unique inlays to find the most precise match for every single iPhone.

Look at iPhone 5 and you can't help but notice the exquisite chamfer surrounding the display. A crystalline diamond cuts this beveled edge. It's what gives iPhone 5 its distinctive lines. Fitting for a phone so brilliant.


**Aluminum and Glass Body**

The back of iPhone 5 is made of anodized 6000 series aluminum — the same material used in Apple notebooks — with inlays along the top and bottom made of ceramic glass (on the white and silver model) or pigmented glass (on the black and slate model).

*See also*, iPhone 5, (http://www.ifixit.com/Teardown/iPhone+5+Teardown/10525/2), accessed on 11/06/2012, MOTO-SDFL-0000018702 (box added).

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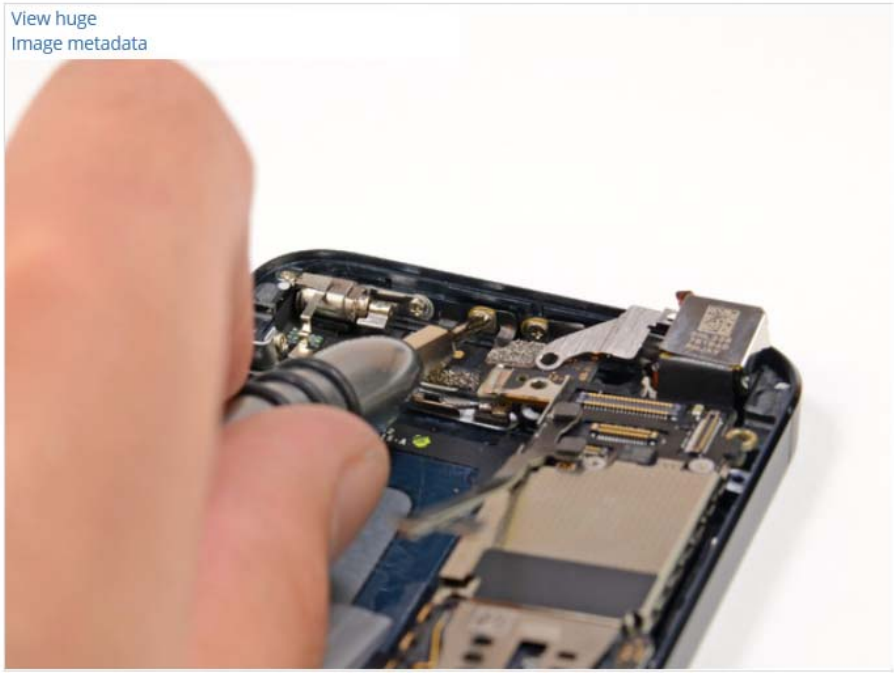


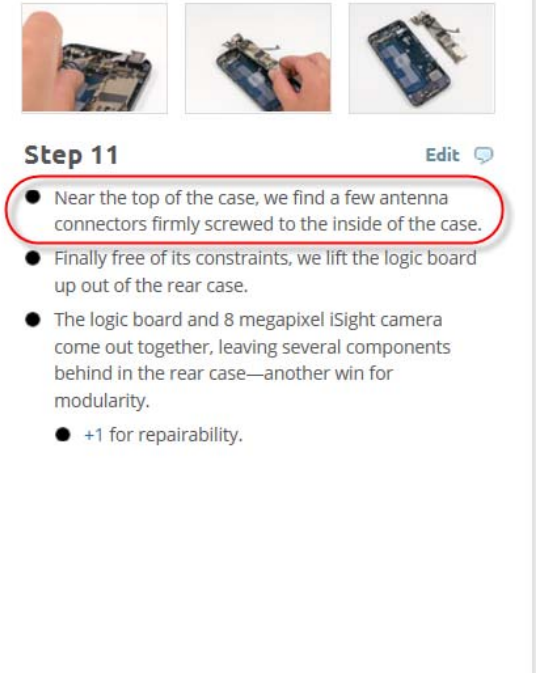


*See also*, iPhone 5 (http://www.ifixit.com/Guide/Installing+iPhone+5+Wi-Fi+Antenna/10897/4) (Wi-Fi antenna coupled to the receiver circuitry), accessed on 11/06/2012, MOTO-SDFL-0000018673:

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| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5**[3] |
|---|---|
| |     |
| 14. A receiver according to claim 13 wherein the user interface further comprises at least one of the following: an acoustic, a visual and tactile interface. | Upon information and belief, the iPhone 4 receiver has visual (a touch-screen display), acoustic (speakers), and tactile (volume control buttons)user interfaces.<br><br>*See, e.g.*, iPhone 4 Technical Specifications, (http://www.apple.com/iphone/specs.html), accessed on May 12, 2011, MOTO-APPLE-0006037953_126659: |

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| | *See also* iPhone Design, (http://www.apple.com/iphone/design/), accessed on May 12, 2011, MOTO-APPLE-0006037953_126949-50: |

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| |  <br>  |
| | *See also*, iPhone 5 Specs, (http://www.apple.com/iphone/specs.html), accessed on 11/06/2012, MOTO-SDFL-0000016105: |

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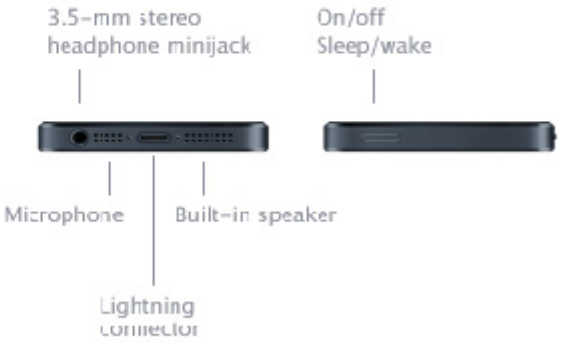
| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| | External Buttons and Controls<br>  <br><br>Connectors and Input/Output<br>  <br> |
| 17. A receiver comprising: | Upon information and belief, Apple imports, manufactures, sells, offers to sell, and uses the Apple iPhone 4, which includes a receiver. For example, the iPhone 4 receives, among other things, telephone calls and text messages.<br><br>In addition, through its design of the Apple iPhone 4, Apple also induced users of the Apple iPhone 4 to infringe the '987 patent. Apple and Motorola have been in talks since 2007 regarding the licensing of Motorola's patent |
| | portfolio, and, on information and belief, in accordance with those negotiations, Apple has reviewed said portfolio, including Motorola's '987 Patent. Thus, at least as early as 2007, Apple knew or should have known its actions would induce actual infringement and possessed specific intent to encourage its customers' direct infringement through the design of the Apple iPhone 4. In addition, Apple instructs the users of the Apple iPhone 4 to use it in an infringing manner, including but not limited to by describing infringing uses in its advertisements, promotional materials, labels, and user manuals. *See, e.g.*, Apple iPhone Bumper – Pink, (http://store.apple.com/us/product/APPLE_IPHONE_BUMPERS-104238?mco=MTM3NjU0NTk), accessed on May 9, 2011, MOTO-APPLE-0006037953_127202: "Fits all iPhone 4 models for both AT&T and Verizon." *See also id.*: |

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| ’987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
|---|---|
| | Apple iPhone 4 Bumper - Pink<br>  |
| | Moreover, through its design of the Apple iPhone 4, Apple also contributes to the infringement of the '987 patent by users of the device. As indicated above, at least as early as 2007, Apple knew that offering to sell or selling the Apple iPhone 4 and the Apple iPhone 4 bumper would contribute to direct infringement of the '987 Patent. Apple knew that the iPhone 4 bumper, a component with no substantial non-infringing use, could be combined with the Apple iPhone 4, and that this combination, for which the two components were especially made, was both patented and infringing. Moreover, Apple iPhone 4 users have, in fact, combined these components into an infringing device. Apple further contributes to the direct infringement of the users of the Apple iPhone 4, including but not limited to by describing infringing combinations in its advertisements, promotional materials, and user manuals. *See, e.g.*, Apple iPhone Bumper – Pink, (http://store.apple.com/us/product/APPLE_IPHONE_BUMPERS-104238?mco=MTM3NjU0NTk), accessed on May 9, 2011, MOTO-APPLE-0006037953_127202: “Fits all iPhone 4 models for both AT&T and Verizon.” *See also id.*: |

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| ’987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
|---|---|
| | Apple iPhone 4 Bumper - Pink  |

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| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| | *See also*, Apple iPhone 5 case , (http://store.apple.com/us/product/HA763ZM/A/incase-snap-case-for-iphone-5?fnode=47), accessed on 11/07/2012, MOTO-SDFL-0000020234:<br>**Incase Snap Case for iPhone 5**<br>  |

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| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| receiver circuitry; | Upon information and belief, the Apple iPhone 4 has receiver circuitry. For instance, the iPhone contains a logic board containing, among other things:<br><br>● On the top of logic board:<br>● Skyworks SKY77542 Tx–Rx iPAC™ FEM for Dual-Band GSM/GPRS: 880–915 MHz and 1710–1785 MHz bands.<br>● Skyworks SKY77541 GSM/GRPS Front End Module<br>● STMicro STM33DH 3-axis accelerometer<br>● TriQuint TQM676091<br>● 338S0626<br><br>*See* iPhone Teardown, (http://www.ifixit.com/Teardown/iPhone-4-Teardown/3130/2), accessed on May 13, 2011, MOTO-APPLE-0006037953_127192-94 9 (arrows and labels added): |

**EXHIBIT A**

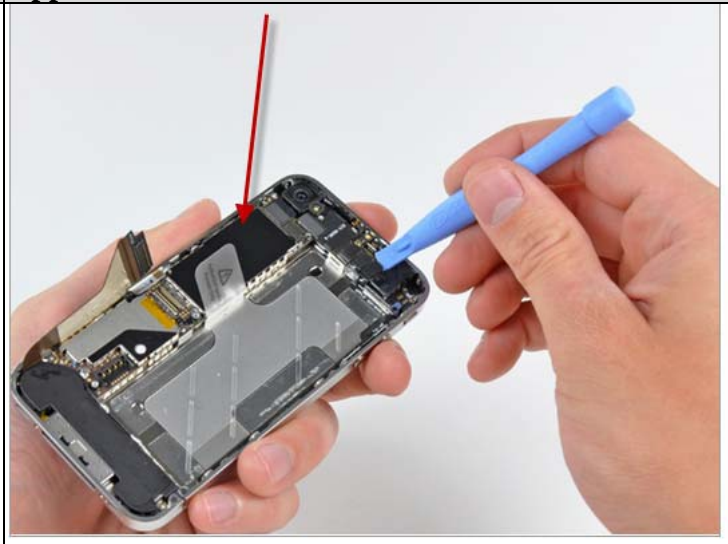
| ’987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
|---|---|
| |  **Step 10**<br>● Removing one of the many connectors on the logic board.<br>● In our brief usage, we did notice that the phone is considerably warmer on the right side. This makes sense, as the logic board is located entirely along the right side of the phone. |

**EXHIBIT A**

| **’987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| |  |

**EXHIBIT A**

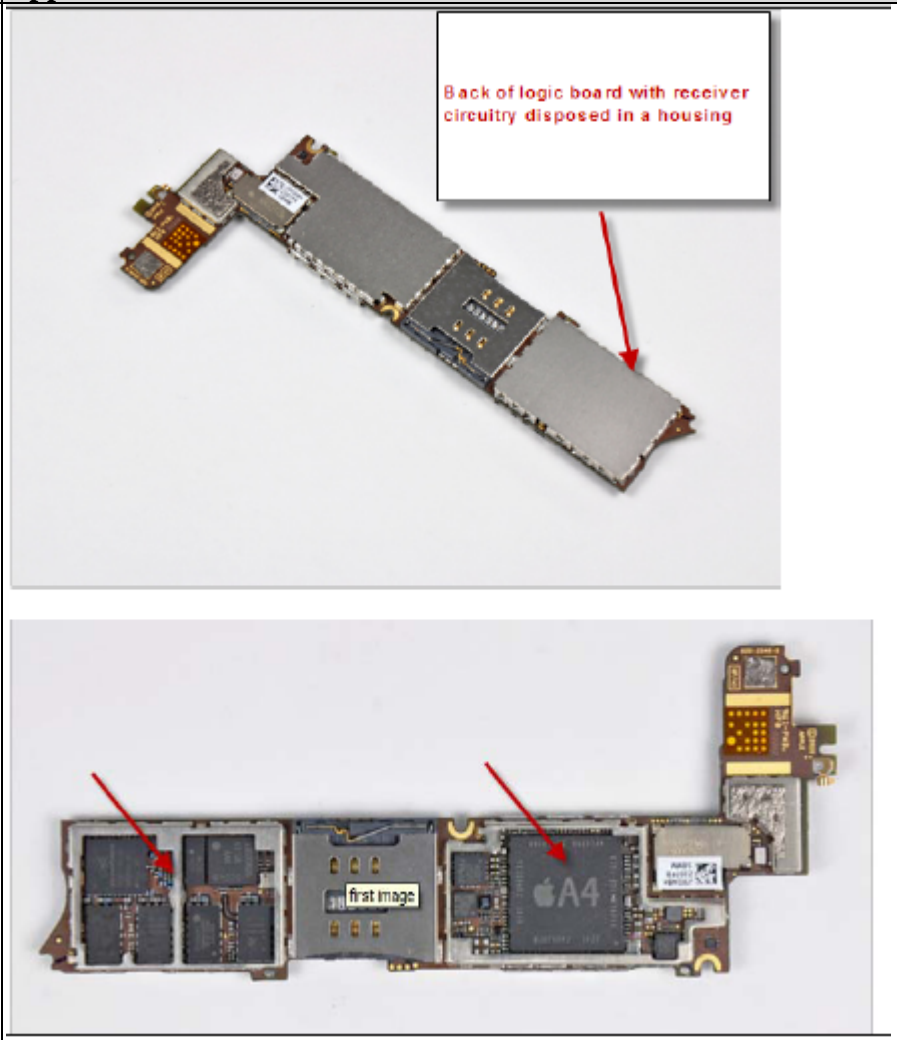
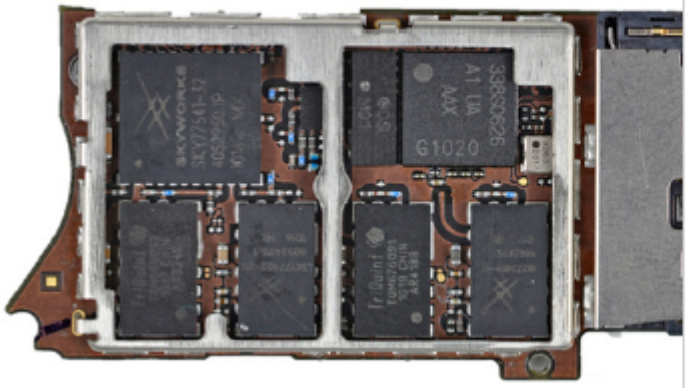
| ’987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
|---|---|
| |  |

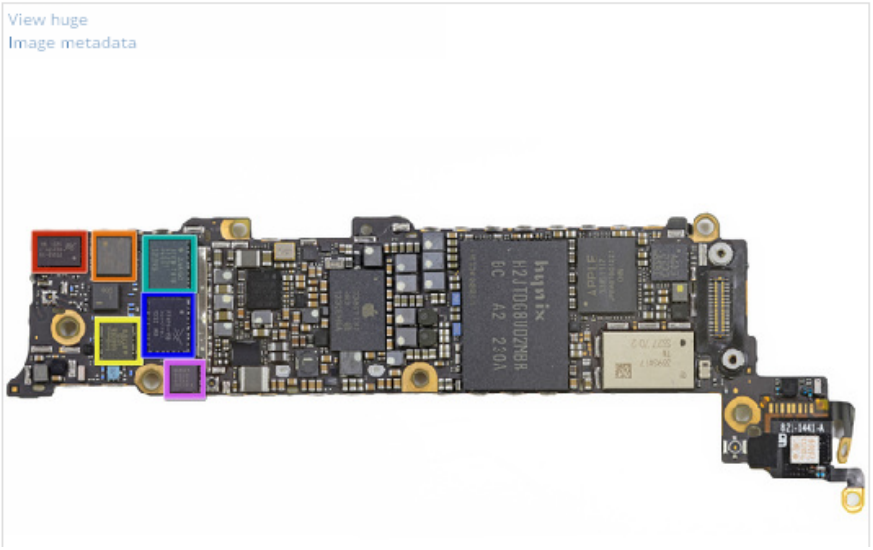
**EXHIBIT A**

| ’987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
|---|---|




- On the top of logic board:
  - Skyworks SKY77642 Tx–Rx iPAC™ FEM for Dual-Band GSM/GPRS: 880–915 MHz and 1710–1785 MHz bands.
  - Skyworks SKY77641 GSM/GPRS Front End Module
  - STMicro STM330H 3-axis accelerometer
  - TriQuint TQM676091
  - 33858626

*See also*, iPhone 5 Teardown, (http://www.ifixit.com/Teardown/iPhone+5+Teardown/10525/2), accessed on 11/06/2012, MOTO-SDFL-0000018703:




**Step 14** Edit

- The underside of the logic board is teeming with components.
  - Skyworks 77352-15 GSM/GPRS/EDGE power amplifier module
  - SWUA 147 228 is an RF antenna switch module
  - Triquint 666083-1229 WCDMA / HSUPA power amplifier / duplexer module for the UMTS band
  - Avago AFEM-7813 dual-band LTE B1/B3 PA+FBAR duplexer module
  - Skyworks 77491-158 CDMA power amplifier module
  - Avago A5613 ACPM-5613 LTE band 13 power amplifier

**EXHIBIT A**

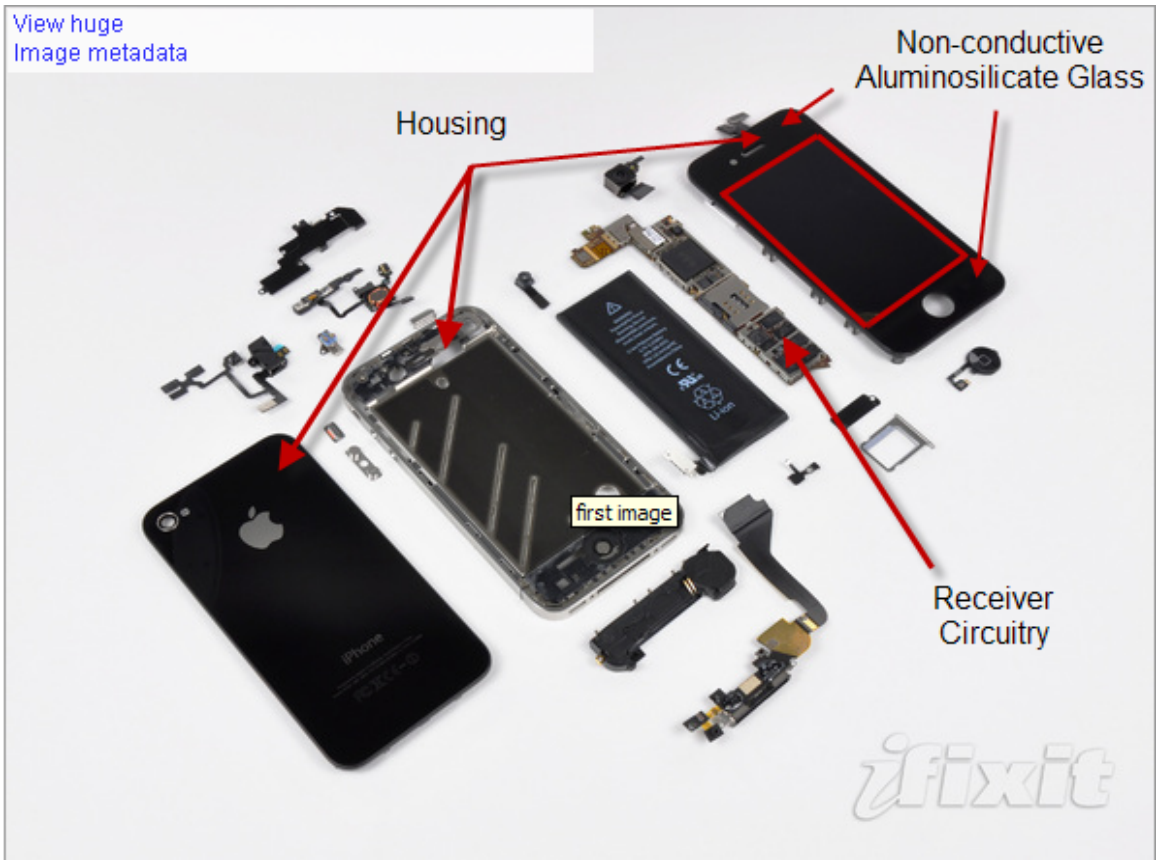
| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| a housing substantially enclosing the receiver circuitry; | Upon information and belief, the Apple iPhone 4 has a housing, comprised of at least the frame to the inside of the stainless steel band surrounding the iPhone and the non-conductive portion of the aluminosilicate glass screen, substantially enclosing the receiver circuitry.<br><br>*See, e.g.*, iPhone Teardown, (http://www.ifixit.com/Teardown/iPhone-4-Teardown/3130/1), accessed on May 13, 2011, MOTO-APPLE-0006037953_127208-10 (arrows and labels added):<br><br>  |

**EXHIBIT A**

| **’987 Patent Claim** | **Apple iPhone 4 and iPhone 5**[3] |
|---|---|
| |  <br>*See also*, iPhone 5 Teardown, (http://www.ifixit.com/Teardown/iPhone+5+Teardown/10525/5), accessed on 11/06/2012, MOTO-SDFL-0000018710 (arrows and labels added): |

**EXHIBIT A**

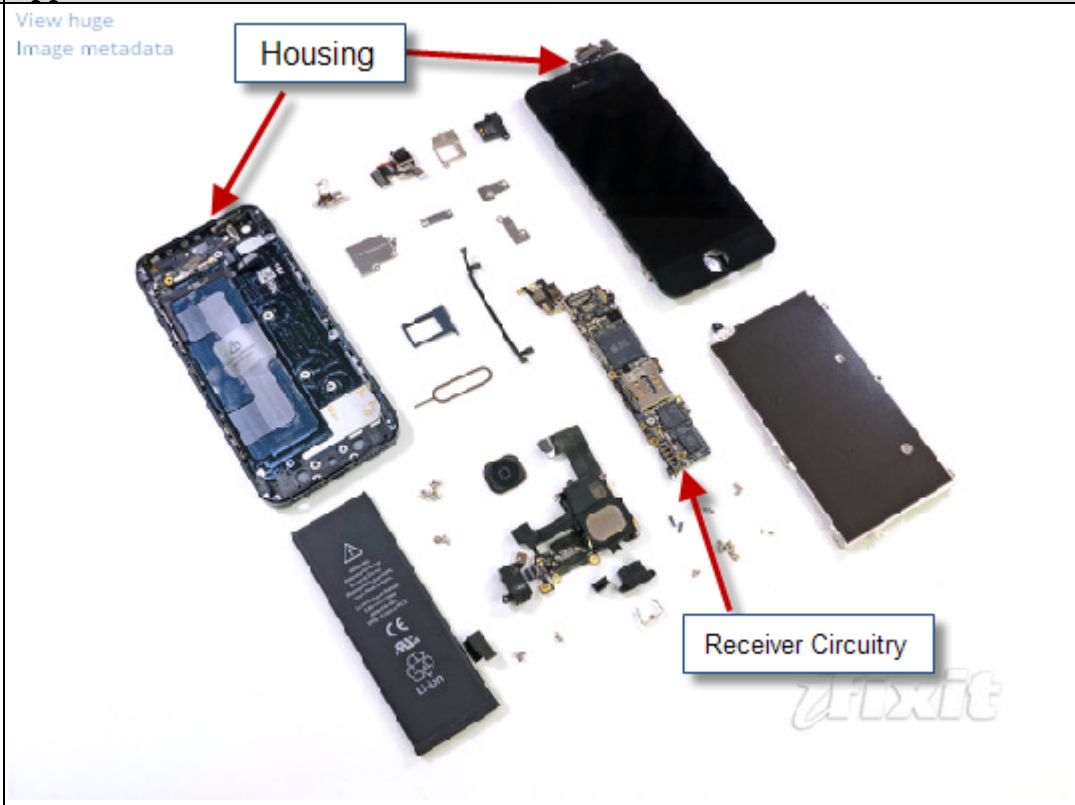
| ’987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
|---|---|
| |  |

**EXHIBIT A**

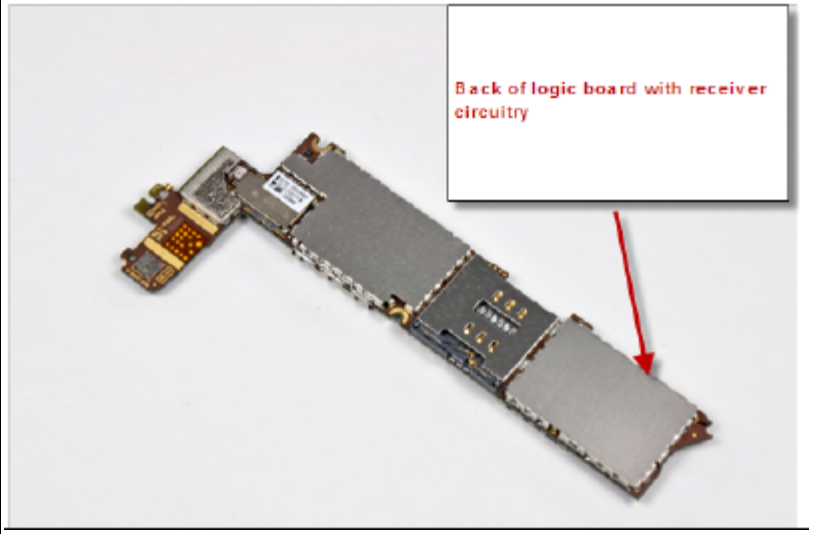
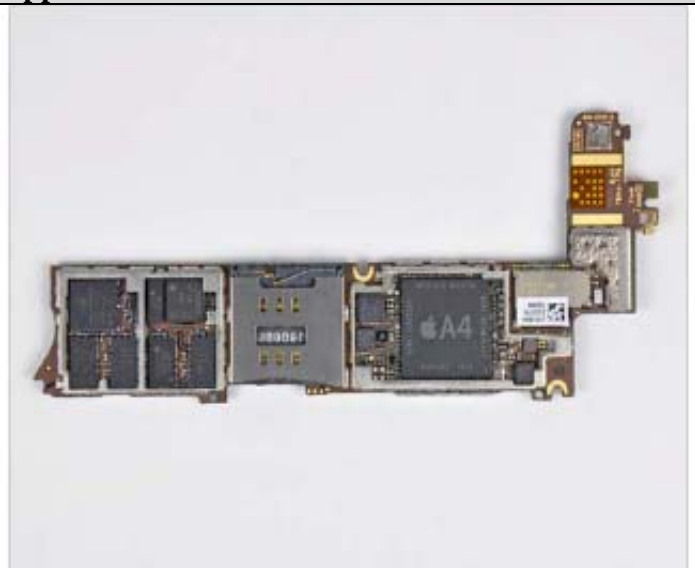
| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| an electromagnetic shield, disposed in the housing and at least partially covering the receiver circuitry, formed of an electrically conductive, electromagnetic wave-absorbing material for absorbing electromagnetic energy radiated by or towards the receiver circuitry; | Upon information and belief, the Apple iPhone 4 contains an electromagnetic shield within the housing (comprised of the metal structure inside of the stainless steel band and the aluminosilicate glass covering the front of the iPhone 4) that at least partially covers the receiver circuitry. The electromagnetic shield is formed of an electrically conductive, electromagnetic wave-absorbing material for absorbing electromagnetic energy radiated by or towards the receiver circuitry.<br><br>*See, e.g.*, iPhone Teardown, (http://www.ifixit.com/Teardown/iPhone-4-Teardown/3130/2), accessed on May 13, 2011, MOTO-APPLE-0006037953_127193-94 (arrows, labels, and highlighting added):<br><br>  |

**EXHIBIT A**

| ’987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
|---|---|




Step 15

- With the EMI shields off, we can get a look at what makes this beast roar.
- Lurking deep within the phone, the A4 processor, manufactured by Samsung, is the centralized unit that provides the iPhone 4 with the much needed computing power.
- Replacing the Samsung S5PC100 ARM A8 600 MHz CPU used in the 3GS, the new iPhone uses the ARM Cortex A8 core, much like its bigger sibling, the iPad. The iPad's A4 is clocked at 1 Ghz.
- The new Samsung Wave S8500 smartphone uses the same Cortex A8 core.
- Just to the left of the A4 package, the AGD1 is the new 3 axis gyroscope that we believe is designed and manufactured by ST Micro for Apple. The package marks on this device do not appear to be the currently available commercial part, L3G4200D. The commercial version of this gyroscope is yet to be released — Apple got first dibs on it.

Upon information and belief, the iPhone 5 also contains an electromagnetic shield within the housing that at least partially covers the receiver circuitry. The electromagnetic shield is formed of an electrically conductive, electromagnetic wave-absorbing material for absorbing electromagnetic energy radiated by or towards the receiver circuitry.

*See*, Replacement of the iPhone 5 EMI shield set, http://www.powerbookmedic.com/iPhone-5-EMI-Shield-Set-p-23131.html, accessed on 11/01/12, MOTO-SDFL-0000018740:

iPhone 5 EMI Shield Set

Product Description:

This is a replacement set of EMI and heat shields for the iPhone 5.

**EXHIBIT A**

| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| an antenna coupled to the receiver circuitry, carried on an outside, nonconductive surface of the housing and disposed outside the electromagnetic shield; and | Upon information and belief, both Apple iPhone 4 antennas are coupled to the receiver circuitry, and the stainless steel band portion of the antennas is carried on an outside, nonconductive surface of the housing, including at least the non-conductive portion of the aluminosilicate glass screen<br><br>*See e.g.*, iPhone Design, (http://www.apple.com/iphone/design/), accessed on May 12, 2011, MOTO-APPLE-0006037953_126953 (arrows and labels added):<br><br>  |

**EXHIBIT A**

| **’987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| | *See also* iPhone Teardown, (http://www.ifixit.com/Teardown/iPhone-4-Teardown/3130/1), accessed on May 13, 2011, MOTO-APPLE-0006037953_127209-10:<br>  <br><br>  |
| | Moreover, at least the stainless steel band portion of the antennas are disposed outside of the electromagnetic |

**EXHIBIT A**

| '987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
|---|---|
| | shield.<br><br>*See, e.g.*, iPhone Teardown, (http://www.ifixit.com/Teardown/iPhone-4-Teardown/3130/2), accessed on May 13, 2011, MOTO-APPLE-0006037953_127193:<br><br>  <br>Step 14<br>● Apple has integrated the UMTS, GSM, GPS, Wi-Fi, and Bluetooth antennas into the stainless steel inner frame.<br>● The dual purpose stainless steel inner frame/antenna assembly addresses possibly the two biggest flaws concerning previous iterations of the iPhone: continuous dropped calls and lack of reception.<br>● Apple has gone a step further and tuned the phone to utilize whichever network band is less congested or has the least interference for the best signal quality, regardless of the actual signal strength. Early reports suggest this feature, while buggy in its early stages, will greatly improve the phone's reliability on AT&T's fragile network.<br><br>*See, e.g.*, iPhone Design, (http://www.apple.com/iphone/design/), accessed on May 12, 2011, MOTO-APPLE-0006037953_126949:<br><br>  <br>Stainless Steel Band<br>Created from our own alloy, then forged to be five times stronger than standard steel, the CNC-machined band is the mounting point for all the components of iPhone 4. The band provides impressive structural rigidity and allows for its incredibly thin, refined design. It also functions as both iPhone 4 antennas. |
| | *See, e.g.*, Image of iPhone 4 Antenna, (http://fortunebrainstormtech.files.wordpress.com/2010/06/iphone-4-antennas.jpg), accessed on May 13, 2011, MOTO-APPLE-0006037953_127191: |

**EXHIBIT A**

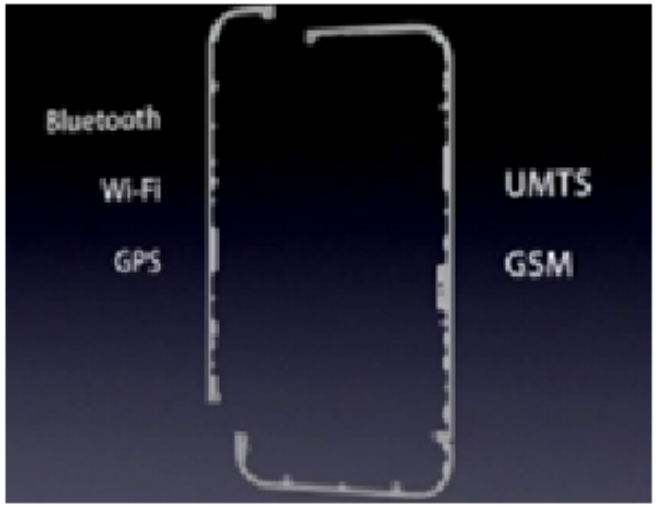
| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| |  <br>Image: Apple Inc.<br><br>*See also* (at 745-Apple11543563): "The iPhone 4 antenna is an exterior antenna which doesn't use internal space so we can add more battery in the phone and give it a longer battery life and there's some other advantages as well." |
| | *See also*, iPhone 5 Teardown, (http://www.ifixit.com/Teardown/iPhone+5+Teardown/10525/5), accessed on 11/06/2012, MOTO-SDFL-0000018710 (arrows and labels added): |

**EXHIBIT A**

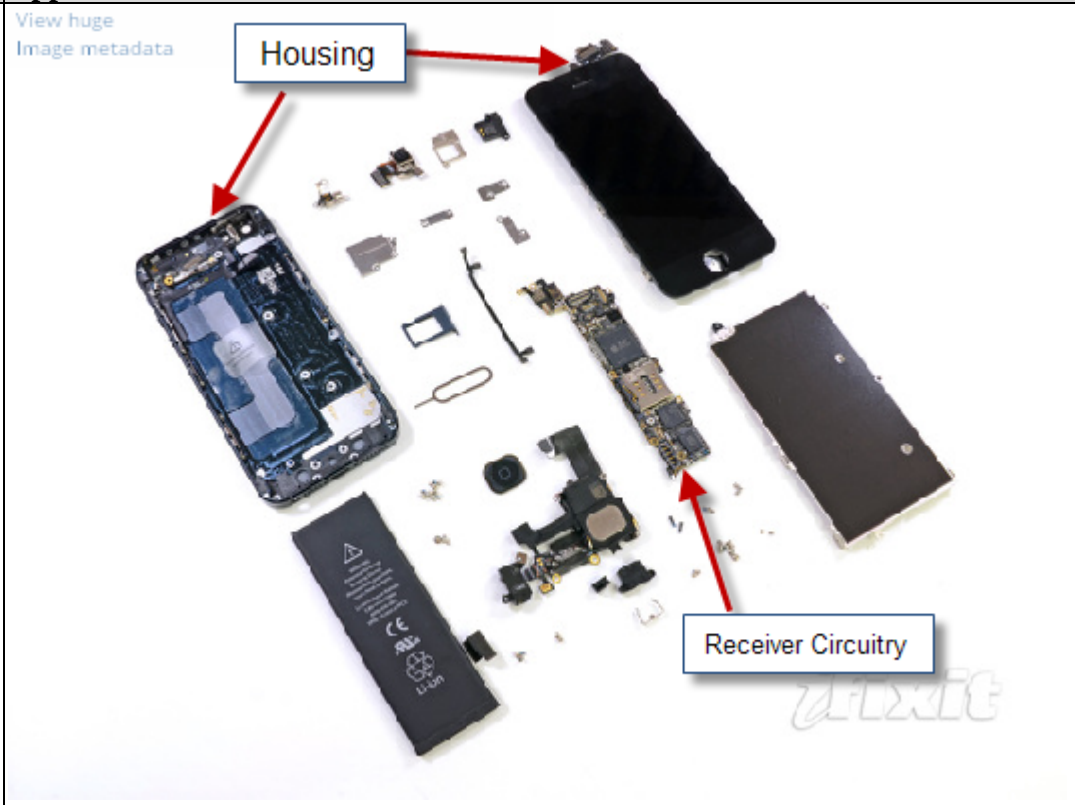
| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| |  |
| | *See also*, iPhone 5 (http://www.ifixit.com/Teardown/iPhone+5+Teardown/10525/2), accessed on 11/06/2012, MOTO-SDFL-0000018702 (box added): |

**EXHIBIT A**

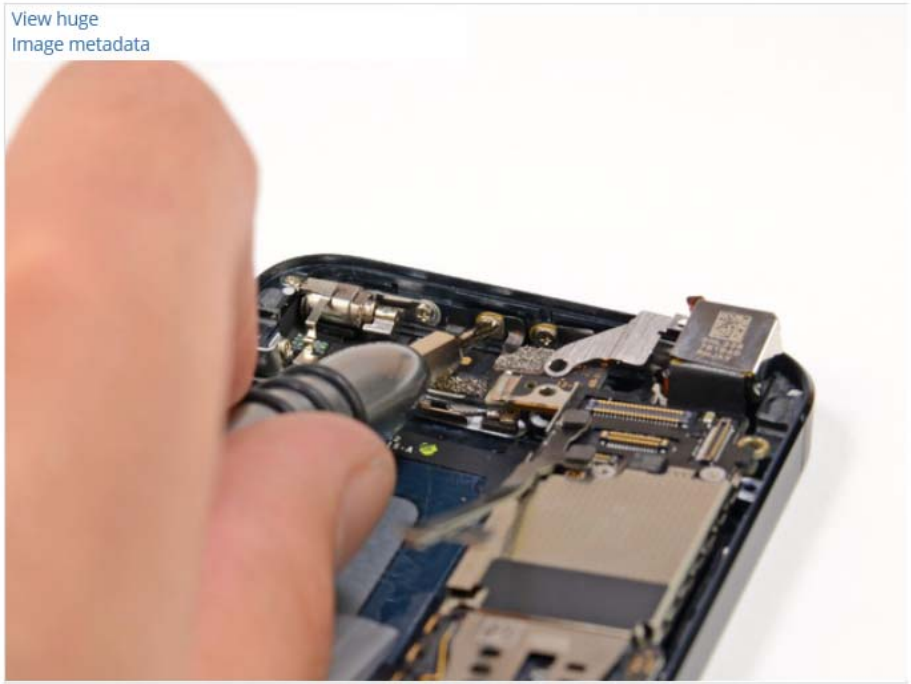
| ’987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
|---|---|
| |   |
| | *See also*, iPhone 5 (http://www.ifixit.com/Guide/Installing+iPhone+5+Wi-Fi+Antenna/10897/4) (Wi-Fi antenna coupled to the receiver circuitry), accessed on 11/06/2012, MOTO-SDFL-0000018673: |

**EXHIBIT A**

| ’987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
|---|---|
| |     <br>Step 27 — Wi-Fi Antenna Edit<br>Starting under the cable connection, use the flat of a spudger to pry the Wi-Fi antenna up from the rear case. |

**EXHIBIT A**

| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| a substantially planar and detachable cover, attached to the outside, nonconductive surface of the housing, for concealing the antenna between the cover and the outside, nonconductive surface of the housing such that the antenna is unnoticeable to a user of the receiver. | Upon information and belief, Apple manufactures, imports, sells, offers to sell, and uses the iPhone 4 "bumper." The iPhone 4 bumper is a substantially planar and detachable cover. The iPhone 4 bumper is designed to be attached to the outside, non-conductive portion of the aluminosilicate glass screen (part of the housing) that covers the front of the iPhone 4.<br><br>The iPhone 4 bumper conceals the stainless steel band portion of the antennas between the bumper and the outside, nonconductive surface of the housing (the non-conductive portion of the aluminosilicate glass display) such that the antenna is unnoticeable to a user of the receiver.<br><br>Apple instructs its customers to attach the iPhone 4 bumper to the outside, nonconductive portion of the aluminosilicate glass display, for concealing the antennas between the bumper and the outside, nonconductive portion of the aluminosilicate glass display.<br><br>*See, e.g.*, Apple iPhone Bumper – Pink, (http://store.apple.com/us/product/APPLE_IPHONE_BUMPERS-104238?mco=MTM3NjU0NTk), accessed on May 9, 2011, MOTO-APPLE-0006037953_127202: "Fits all iPhone 4 models for both AT&T and Verizon." *See also id.*:<br><br>Apple iPhone 4 Bumper - Pink<br><br>  |

**EXHIBIT A**

| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| | The iPhone 4 bumper is designed specifically for the iPhone 4 and will not fit any other phone. *See, e.g,. id.* "Important note: iPhone 4 Bumpers are compatible only with iPhone 4. They will not work with any other iPhone model." There is no substantial non-infringing use for the iPhone 4 bumper.<br><br>See also Antennagate Article, (http://www.msnbc.msn.com/id/38263228/ns/technology_and_sciencewireless/t/apple-gives-free-bumpers-all-iphone-owners/), accessed on May 12, 2011, MOTO-APPLE-0006037953_126955: |

**EXHIBIT A**

| '987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
|---|---|


Paul Sakuma / AP

Apple CEO Steve Jobs talks about the Apple iPhone 4 at Apple headquarters in Cupertino, Calif., Friday, July 16, 2010.

By Wilson Rothman

msnbc.com
updated 7/16/2010 1:51:53 PM ET

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Today, as expected, Steve Jobs announced that Apple would offer free rubber "bumpers" to anyone who bought an iPhone 4 in order to fix the problem caused by the antenna's design flaw. However, Jobs did not promise a hardware fix which would alleviate the problem without marring the phone's aesthetic.

"We're not perfect," Jobs told reporters. "Phones aren't perfect either," adding, "but we want to make all of our users happy."

**EXHIBIT A**

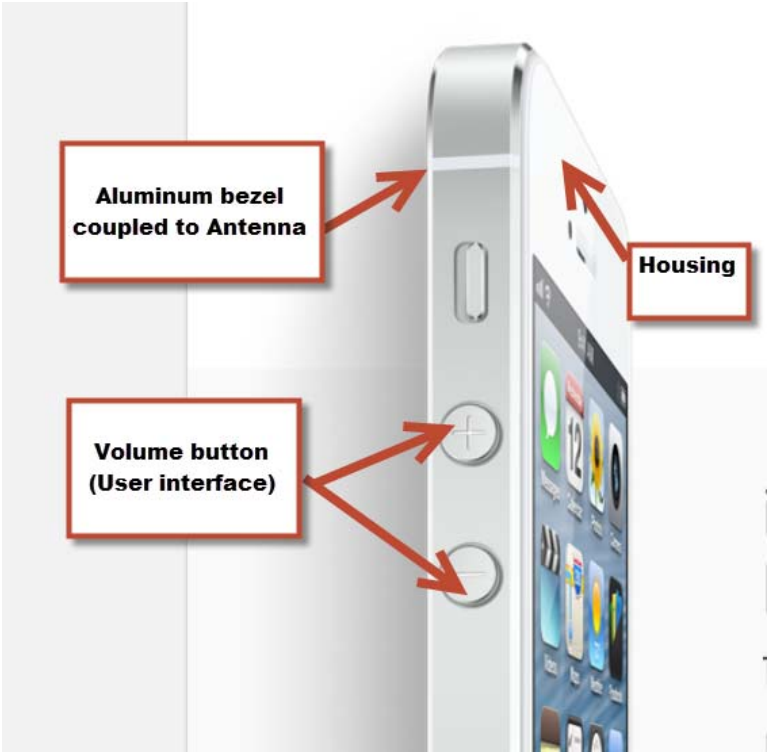
| '987 Patent Claim | Apple iPhone 4 and iPhone 5[3] |
|---|---|
| | Upon information and belief, the antenna in the iPhone 5 is structured substantially in the same way as the one in the iPhone 4.<br><br>*See e.g.*, iPhone 5 Design, (http://www.apple.com/iphone/design/), accessed on 11/06/2012, MOTO-SDFL-0000018642 (arrows and labels added):<br><br>  <br><br><br>In addition, upon information and belief, Apple manufactures, imports, sells, offers to sell, and uses the iPhone 5 case that is a substantially planar and detachable cover; designed to be attached to the outside, non-conductive portion of the housing; and conceals the aluminum bezel portion of the antennas between the cover and the outside, |

**EXHIBIT A**

| **'987 Patent Claim** | **Apple iPhone 4 and iPhone 5[3]** |
|---|---|
| | nonconductive surface of the housing such that the antenna is unnoticeable to a user of the receiver.<br><br>*See e.g.*, Apple iPhone 5 case , (http://store.apple.com/us/product/HA763ZM/A/incase-snap-case-for-iphone-5?fnode=47), accessed on 11/07/2012, MOTO-SDFL-0000020234:<br>**Incase Snap Case for iPhone 5**<br>  |