

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Amendment of the Commission’s Rules)	
Governing Hearing Aid-Compatible Mobile)	WT Docket No. 07-250
Handsets)	
)	
Section 68.4(a) of the Commission’s Rules)	
Governing Hearing Aid Compatible Telephones)	WT Docket No. 01-309
)	
Petition of American National Standards Institute)	
Accredited Standards Committee C63 (EMC))	
ANSI ASC C63™)	

REPLY COMMENTS OF APPLE INC.

Since 1985, Apple Inc. (“Apple”) has been committed to helping people with disabilities access the most advanced consumer electronics products, regardless of the nature of the disability. Apple has complied with all of its legal and regulatory obligations regarding the accessibility of its iPhone by people with disabilities, and fully intends to go beyond those obligations as its products evolve. It cautions, however, that disability access obligations ought not to be imposed in such a way as to limit the development of new technology since that would disadvantage all citizens – the disabled and non-disabled alike. With that in mind, Apple respectfully submits these reply comments in response to the Federal Communications Commission’s (“Commission”) *Second Report and Order and Notice of Proposed Rulemaking (“NPRM”)* in the above-captioned proceeding.¹

¹ *Amendment of the Commission’s Rules Governing Hearing Aid-Compatible Mobile Handsets*, Second Report and Order and Notice of Proposed Rulemaking, WT Docket Nos. 07-250 and 01-309, FCC 07-192 (rel. Nov. 7, 2007) (“NPRM”). Unless otherwise noted, all comments cited herein reference comments filed in this proceeding on December 21, 2007.

Apple is, of course, a new entrant to the CMRS handset manufacturing market. Its iPhone is a spectacular and successful embodiment of cutting edge technology. The iPhone's large multi-touch display and pioneering software interface presents both new challenges and new possibilities for disabilities access. Although Apple falls within the *de minimis* exception to the Commission's hearing aid compatibility ("HAC") rules, *see* 47 C.F.R. § 20.19(e)(1), Apple nevertheless has conducted hearing aid compatibility testing of iPhone throughout its development, and continues to explore ways to make iPhone compatible with hearing aids. But the iPhone is a perfect example of why the *de minimis* exception to the HAC rules serves an important public purpose.

I. The Commission should retain the *de minimis* exception and clarify its application to handsets operating in multiple air interfaces.

Apple supports the Commission's proposal to retain the *de minimis* exception and codify that it applies on a per air interface basis.² In doing so, the Commission proposes to adopt the proposal set forth by the Joint Consensus Plan, which was developed and agreed to by a coalition of equipment manufacturers, wireless service providers, and leading representatives of the deaf and hard of hearing community.³ The majority of commentors urge the Commission to adopt the Joint Consensus Plan's proposal without change.⁴

The *de minimis* exception allows new entrants to the handset manufacturing marketplace, like Apple, to develop innovative devices, like iPhone, and expeditiously bring them to market,

² NPRM ¶ 85.

³ *See* Supplemental Comments of the Alliance for Telecommunications Industry Solutions ("ATIS") at 10, WT Docket No. 06-203 (filed June 25, 2007) ("Joint Consensus Plan").

⁴ *See, e.g.,* Comments of AT&T Inc. ("AT&T") at 6; Comments of Sony Ericsson Mobile Communications ("Sony") at 7-8; Comments of the Telecommunications Industry Association ("TIA") at 9-10; Comments of Nokia Inc. ("Nokia") at 5-6.

while evaluating consumer demand and obtaining feedback from the accessibility community for future generations of the device.⁵ Contrary to the suggestions of some commentors,⁶ this is entirely consistent with the Commission’s adoption of the *de minimis* exception. In 2003, the Commission established the exception not just for *small* manufacturers but for manufacturers of *any size* that “offer a small number of handset models in the U.S.”⁷ Specifically, it recognized that its implementation approach would have a “disproportionate impact” on manufacturers that only offer one or two handset models.⁸ In 2005, when clarifying that the *de minimis* exception applies on a per air interface basis, the Commission again stressed the need to avoid disproportionately impacting manufacturers with small numbers of handset models in each air interface, explaining that its rules should not be construed to require a handset manufacturer, in that case RIM, to either “triple its product offering . . . or withdraw its existing products from the U.S. wireless market.”⁹ The Commission made plain that a proper application of the *de minimis* exception should not “have the effect of retarding technological progress and limiting competition .”¹⁰

⁵ This, in turn, provides larger benefits to competition and consumers. As one industry analyst has noted, for example, Apple’s entry into the handset market with the iPhone has spurred real user interface improvements from every wireless device vendor in the industry. See Andrew Seybold, *2007: Not A Typical Year for Wireless*, Dec. 21, 2007, <http://www.fiercewireless.com/story/2007-not-typical-year-wireless/2007-12-21>.

⁶ See Comments of the Hearing Loss Association of America and Telecommunications for the Deaf and Hard of Hearing, Inc. (“HLAA”) at 6; Comments of the Rehabilitation Engineering Research Center on Telecommunications Access (“RERC-TA”) at 13-14.

⁷ *Section 68.4(a) of the Commission’s Rules Governing Hearing Aid-Compatible Telephones*, Report and Order, 18 FCC Rcd. 16753, 16781 (¶ 69) (2003); *Erratum*, 18 FCC Rcd. 18047 (2003) (“*Report and Order*”); see also *Section 68.4(a) of the Commission’s Rules Governing Hearing Aid-Compatible Telephones*, Order on Reconsideration and Further Notice of Proposed Rulemaking, 20 FCC Rcd. 11221, 11244 (¶ 51) (2005) (“*Reconsideration Order*”).

⁸ *Report and Order* ¶ 69.

⁹ *Reconsideration Order* ¶ 53.

¹⁰ *Id.*

This is no less true now – and, in fact, may be truer than ever – as new wireless networking technology is introduced on a seemingly daily basis. As many of the commentators point out, the “*de minimis* exception is critical to the industry’s ability to promote the innovation of new technologies.”¹¹ The Joint Consensus Plan observed that the exception ensures that new technologies “entering the market have the opportunity to develop adequately prior to the imposition of any stringent HAC regulatory obligations,” while permitting manufacturers to avoid “diverting resources” to soon-to-be discontinued technologies.¹² As TIA explains, the “*de minimis* exception is important for all manufacturers, regardless of size, to enable them to expeditiously bring new innovative products to market and determine whether consumer demand warrants a more expansive deployment of the new technology that may trigger the HAC requirements later on.”¹³ Apple’s iPhone exemplifies this scenario, illustrating how the current *de minimis* exception operates to facilitate the availability of innovative technologies, while providing an opportunity for Apple to evaluate demand and develop accessibility solutions – to the ultimate benefit of all consumers.

Apple recognizes the demand for a hearing-aid compatible iPhone and appreciates the importance of making its products accessible to members of the deaf and hard of hearing community. Throughout iPhone’s development, Apple conducted hearing-aid compatibility testing and explored ways to make iPhone HAC compliant. Currently, none is readily achievable. But rather than holding back its cutting edge device, the *de minimis* exception has allowed Apple to enter the handset market with advanced technology that – among other things – is particularly easy to use by those who have disabilities that make it difficult or impossible to

¹¹ Comments of T-Mobile USA, Inc. (“T-Mobile”) at 10.

¹² ATIS at 10.

¹³ TIA at 9-10.

push buttons. At the same time, Apple has been able to consult with members of the disability community, and obtain feedback on various iPhone accessibility issues, and continue to explore means of making iPhone hearing-aid compatible.

Apple does, however, suggest that the Commission clarify how the *de minimis* exception applies to multi-mode phones. As discussed below, the Commission should not prevent handsets operating in multiple air interfaces from being found HAC compliant because they operate in a new air interface for which no technical standards exist. Similarly, such handsets should only count toward the *de minimis* exception for the air interface with existing technical standards.

II. Requiring that handsets must meet standards that *do not yet exist* is at odds with the Hearing Aid Compatibility Act and bad public policy.

The Commission tentatively concludes that “multi-band and multi-mode phones cannot be counted as compatible in any band or mode if they operate over air interfaces or frequency bands for which technical standards have not been established.” *NPRM* ¶ 33; *see also id.* ¶¶ 81, 84. Like nearly all of those commenting,¹⁴ Apple is opposed to a rule that a handset is not hearing-aid compatible if it is not compatible in each frequency band and mode supported by the handset, even if no technical standards have been established. Such a requirement is not only at odds with the Hearing Aid Compatibility Act, but also imposes an unwarranted regulatory constraint that will delay deployment of new technologies to all consumers.

In the Hearing Aid Compatibility Act of 1988 (“HAC Act”), Congress mandated that wireline telephones “provide internal means for effective use with hearing aids that are designed to be compatible with telephones which meet *established technical standards for hearing aid compatibility.*” HAC Act, Pub. L. 100-394, § 3(b)(1), *codified at* 47 U.S.C. § 610(b)(1)(B).

¹⁴ *See, e.g.*, Sony at 5-6 (“It is axiomatic that a particular handset can only meet HAC standards for those frequencies and air interfaces for which HAC parameters and testing methodologies actually exist;”); Comments of Motorola (“Motorola”) at 7-8; Comments of Research in Motion Limited (“RIM”) at 15-17; T-Mobile at 7-8.

Congress also specifically directed the Commission to structure its HAC rules in a manner that would “not discourage or impair the development of improved technology.” *Id.* § 610(e).

As adopted, the statute exempted wireless telephones from this requirement, authorizing the Commission to determine, subject to certain criteria including technological feasibility, whether to revoke or limit that exemption. *Id.* § 610(b)(2). In 2003, the Commission modified the exemption for wireless phones “to require that digital wireless phones be capable of being effectively used with hearing aids.”¹⁵ Finding that it was “technologically feasible for digital wireless phones to comply with the requirement that they be hearing aid compatible,” the Commission explained that satisfying “the requirement that there be an established technical standard” was “fundamental” to its decision to modify the exemption for wireless phones.¹⁶

The Commission’s proposed rule is difficult to reconcile with the HAC Act and the Commission’s decision to modify the exemption for wireless phones. The statute requires that telephones “meet established technical standards for hearing aid compatibility.” And the Commission’s application of HAC requirements to wireless phones was based on the existence of such “established technical standards.” Yet the proposed rule would prevent an otherwise compliant phone from being deemed hearing aid compatible because it operates over frequencies or in modes “for which technical standards *have not been established*.” While the Commission has authority to “revoke” or “limit” the wireless exemption, the HAC Act provides no authority to adopt a requirement for wireless handsets that exceeds the affirmative hearing aid compatibility requirements set forth in the statute. *See* § 610(b)(1) & (2). Moreover, as discussed further below, the Commission’s tentative conclusion fails to abide by the statute’s

¹⁵ *See Report and Order* ¶ 1.

¹⁶ *See id.* ¶¶ 38, 39; *see also Reconsideration Order* ¶¶ 9-16 (affirming the *Report and Order*’s finding that this technical standard met the “established” requirement set forth in the HAC Act.)

command that the Commission's HAC regulations must "not discourage or impair the development of improved technology." *Id.* § 610(e).

Even if it were consistent with the statute, the proposed rule is simply bad public policy. The creation of technological standards should not be artificially rushed. And it is a process that works best when it can incorporate lessons learned in the marketplace. Requiring manufacturers to wait for the standards bodies puts the cart before the horse. It reeks of the command and control approach to regulation that this Commission has publicly and correctly abandoned, and has often criticized when used in Europe to constrain wireless technologies. This approach will delay the adoption of new technologies to the detriment of all users and to the benefit of none.

Moreover, these adverse consequences will occur, constraining multi-band and multi-mode devices, whether or not the new frequency bands or modes actually cause any interference. The Commission suggests that the proposed rule will speed the development of standards for new technologies.¹⁷ There is no reason to believe this is true, and the suggestion bespeaks a misunderstanding of the standards process. As RIM points out, there is nothing in the record to suggest that the current standards-setting process for new bands or interfaces is moving too slowly or otherwise failing to address new bands or interfaces.¹⁸ Nor do the only two parties supporting the proposed rule point to any evidence of such a problem.¹⁹ Imposing burdensome regulations to solve a problem that does not exist epitomizes unreasonable agency action. As the DC Circuit has said, "A regulation perfectly reasonable and appropriate in the face of a given problem may be highly capricious if that problem does not exist." *See ALLTEL Corp. v. FCC*, 838 F.2d 551, 561 (D.C. Cir. 1988) (citations omitted).

¹⁷ *NPRM* ¶¶ 81, 84.

¹⁸ RIM at 17.

¹⁹ RERC-TA at 14; Comments of the Hearing Industries Association ("HIA") at 3.

The Commission also proposes the rule because it would supposedly “conform with consumers’ expectation” that an HAC-compliant phone labeled is compatible in all its operations.²⁰ But, as Motorola suggests, any such consumer confusion could easily be alleviated by a label clearly informing consumers that the HAC-compliant phone has not been tested for hearing aid compatibility for operations for which no HAC standards exists.²¹

Apple thus agrees with a number of commenters that the better approach is to allow the current standard setting process to evaluate new technologies on a case-by-case basis.²² Scientific investigation by existing standard setting bodies in consultation with hearing aid and handset manufactures is necessary to identify any interference created by a new frequency or interface and to develop effective measurement and rating methodologies. Waiting for established technical standards to exist before imposing HAC compliance requirements is both consistent with the statute and will facilitate, rather than impede, the roll out of new technologies and devices in the U.S. market.

III. The Commission should not prescribe the specific user-interface required to make a device accessible.

Apple is strongly opposed to requirements that prescribe the specific user-interface required to make a device accessible for particular disabilities. The *NPRM* seeks comment on volume control requirements and measures to address emissions from smart phone display screens. The comments are unanimous that any regulation of these features is premature.²³

If, in the future, the Commission determines that volume controls or screen display regulations are appropriate, any new requirements should preserve the maximum discretion of

²⁰ *NPRM* ¶¶ 81, 84.

²¹ Motorola at 8.

²² *See, e.g.*, Nokia at 8, Sony at 6, RIM at 17.

²³ *See, e.g.*, RERC-TA at 19-20, HLAA at 6, Nokia at 9.

the manufacturer. The legislative history of the HAC Act reveals that Congress made a conscious effort to avoid mandating that any particular type of technology be required to achieve hearing aid compatibility. As the Commission explained in the *Report and Order*, Congress did not intend for the HAC Act to “tie manufacturers to a particular technology and inhibit future development; instead, it sought only to require that telephones be compatible.”²⁴ Thus, consistent with the statute, the Commission’s HAC rules must afford manufacturers’ flexibility in implementing accessibility features in order to avoid limiting the functionality of a device for a broader group of users and to avoid prescribing a specific form factor. In the case of volume control, the Commission should keep in mind that the volume output of a device may be controlled for several reasons, including sound output for the receiver, ringer, speakerphone, and headphone jack, which may be used for earbuds, headphones, or connection to other accessories, such as car stereos and other audio systems. A narrow prescription for the user-interface for controlling one function of volume output could negatively affect the functionality of the device with respect to the others to the detriment of a wider set of users. With respect to interference caused by device screens, Apple would be strongly opposed to a rule that could be interpreted to require a device to have physical counterparts to on-screen controls. Such a rule would inhibit the deployment of new technologies, such as iPhone’s innovative touch-screen interface, which offers new possibilities for increasing access to technology by individuals with disabilities.

IV. The Commission should avoid applying HAC rules to emerging technologies such as VoIP over WiFi.

Apple encourages the Commission to avoid applying the HAC rules for handsets that use clearly-established wireless standards, such as GSM and CDMA, to emerging technologies such as VoIP over WiFi or other wireless technologies for which there are no clear standards. Again,

²⁴ *Report and Order* ¶ 28 (citing H.R. Report No. 100-674, at 8 (1988)).

all parties agree that it is premature for the Commission to apply its HAC rules to emerging technologies.²⁵

While HIA advocates a broad application of compatibility regulation, suggesting that the Commission need not engage in “regulatory complexity,”²⁶ it is evident from the record that the statutory authority, regulatory classification, and technological issues involved in placing HAC requirements on emerging technologies are inherently complex. Moreover, absent clear regulatory and technological standards, testing for compliance will be problematic. For example, with VoIP, variability in speech codecs used by different VoIP clients and the different network configurations supported, each of which could affect acoustic compatibility, could result in a prohibitively expensive proliferation of test configurations for assessing hearing-aid compliance.

CONCLUSION

There can be no doubt that disability access is important not only for the disabled but for every member of our society. This is certainly true for the compatibility of CMRS handsets with hearing aids. But, like any regulatory regime, HAC regulations must be imposed in a sufficiently nuanced and flexible manner so that they do not do more harm than good. HAC regulations, if well done, will provide more access and more choices for more Americans. HAC regulations, if badly done, will slow the roll-out of new technologies injuring all Americans, including those with a hearing disability. The Commission here has proposed some regulations that will do far more harm than good. But the record in this proceeding provides sufficient guidance for the Commission to get it right. It should do so.

²⁵ See, e.g., RERC-TA at 17-18; HLAA 6-7; Nokia at 6; TIA at 7-9.

²⁶ HIA at 4.

Respectfully submitted,

A handwritten signature in black ink that reads "SCOTT HARRIS". The signature is written in a cursive style with a horizontal line underneath the name.

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