

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

In the Matter of)
)
Amendment of the Commission's Rules Governing) WT Docket No. 20-3
Standards for Hearing Aid-Compatible Handsets)

ORDER

Adopted: September 29, 2023

Released: September 29, 2023

By the Chief, Wireless Telecommunications Bureau:

I. INTRODUCTION

1. Today we grant a limited waiver of section 20.19(b)(1) and (b)(3) of the Commission's wireless hearing aid compatibility rules with respect to the volume control technical standard that handset manufacturers use in part to certify handsets as hearing aid-compatible under the 2019 ANSI Standard.¹ Our action is prompted by a request filed by the Alliance for Telecommunications Industry Solutions (ATIS) seeking waiver of certain aspects of these rules.² Under the terms of the time-limited waiver we grant today, a handset may be certified as hearing aid-compatible under the 2019 ANSI Standard if it meets the volume control testing requirements described in this Order as well as all other aspects of the 2019 ANSI Standard.

2. Consistent with ATIS's September 12, 2023, *ex parte* letter (ATIS Ex Parte Letter) and as a condition of this waiver, we require a handset to pass the conversational gain test at the 2 Newton (N) force level on all available narrowband and wideband codecs and air interface combinations.³ With respect to the 8N force level test, we agree with the ATIS Ex Parte Letter that this test should be performed, and we waive the requirement that a handset achieve at least an 18 dB conversational gain.⁴ This waiver is conditioned on manufacturers performing the 8N force level test using the same testing parameters that we are requiring for the 2N force level test and to place on the handset's package label the resulting conversational gain (even if it is below 18 dB) in a manner consistent with our existing hearing aid compatibility labeling rules.

3. With respect to the related receive distortion and noise performance (distortion/noise) and receive acoustic frequency response performance (frequency response) tests, we agree with the ATIS Ex Parte Letter that handsets must pass testing using at least one narrowband *and* one wideband codec of the

¹ The 2019 ANSI Standard refers to the technical document entitled Accredited Standards Committee C63®—Electromagnetic Compatibility, *American National Standard Methods of Measurement of Compatibility Between Wireless Communications Devices and Hearing Aids*, ANSI C63.19-2019 (approved Aug. 19, 2019) (2019 ANSI Standard).

² Petition of ATIS on Behalf of the Covered Entities of the Hearing Aid Compatibility Task Force for Limited, Interim Waiver, WT Docket Nos. 15-285 and 20-3 (filed Dec. 16, 2022) (ATIS Waiver Petition). ATIS filed its waiver petition on behalf of all manufacturers and service providers subject to section 20.19(b)(1) and (b)(3) of the Commission's wireless hearing aid compatibility rules. *Id.* at 1, 4.

³ Letter from Thomas Goode, General Counsel, ATIS, to Marlene H. Dortch, Secretary, FCC, WT Docket Nos. 15-285 and 20-3, at 2 (filed Sept. 12, 2023) (ATIS Ex Parte Letter); *see also* ATIS Waiver Petition at 4, 12-13. Below we explain the conversational gain test. *See infra* para. 9.

⁴ ATIS Ex Parte Letter at 2. Originally, ATIS had proposed to waive the entire 8N force level test. ATIS Waiver Petition at 10-11, 13.

manufacturer's choosing.⁵ We also accept ATIS's suggestion that at least one narrowband and one wideband codec must pass testing for distortion/noise and frequency response and tests will be limited to one bit rate and only with those air interfaces associated with the chosen codecs and that the other codecs used for conversational gain at the 2N and 8N force levels are not required to undergo the distortion/noise and frequency response tests.⁶ Further, as detailed below, we accept ATIS's suggested method to set the volume control setting for testing these other codecs for conversational gain.⁷

4. By taking these steps, we ensure that when the exclusive use transition period ends on December 5, 2023, new handset models can be certified as hearing aid-compatible using the 2019 ANSI Standard as modified by the conditions established in this Order.⁸ Our actions allow consumers with hearing loss who use hearing aids or cochlear implants to benefit from wider availability of handsets offering improved hearing aid compatibility under the 2019 ANSI Standard's radio frequency (RF) interference and inductive coupling requirements. In addition, our approach gives consumers assurance that a handset's amplifier/speaker combination will provide improved volume control functionality over narrowband and wideband modes of voice communications, and that consumers have the information that they need to make informed purchasing decisions. Our actions today will move us closer to the Commission's goal of reaching 100% hearing aid compatibility for wireless handsets, while also creating a path forward for testing to ensure that handsets have volume control capabilities.⁹

5. This waiver is effective immediately upon release of this Order so that manufacturers may afford the benefits of this relief to consumers with hearing loss as soon as feasible. In reliance upon ATIS's representations that efforts are underway to expeditiously develop a new volume control standard through the TIA standards setting process, we limit this waiver to a two-year period.¹⁰ During this waiver period, we will evaluate the effectiveness of the waiver standard in meeting the needs of consumers with hearing loss and take action where appropriate. We expect that a two-year time limitation for the waiver will encourage all interested parties to work together to rapidly develop an improved volume control standard that we can incorporate into our rules in the future. To ensure this outcome, we condition this waiver in part on ATIS filing a status letter on the development of a new

⁵ ATIS Ex Parte Letter at 2. Originally, ATIS had proposed that handsets would only have to pass testing using one narrowband *or* one wideband codec in combination with any air interface. ATIS Waiver Petition at 4, 12-13.

⁶ ATIS Ex Parte Letter at 2 & n.5, 3 & n.7.

⁷ Specifically, we accept the approach that ATIS refers to as its "alternative method." This method will be used to set the volume control setting for testing the other narrowband and wideband codecs for the conversational gain tests at the 2N and 8N force levels. *Id.* at 2 & n.5.

⁸ *Amendment of the Commission's Rules Governing Standards for Hearing Aid-Compatible Handsets*, WT Docket No. 20-3, Order, DA 23-327, at para. 1 (rel. Apr. 14, 2023) (extending the start of the exclusive use period from June 5, 2023 to December 5, 2023) (*2023 HAC Extension Order*). Prior to December 5, 2023, handsets may be certified as hearing aid-compatible using either the 2019 ANSI Standard or the 2011 ANSI Standard that is being phased out. *See infra* paras. 10, 16, 35.

⁹ *See* ATIS Ex Parte Letter at 1 ("Timely grant of the Waiver Request will keep the industry on the path to achieving 100% HAC for wireless handsets, while also incorporating testing to ensure that handsets have volume control."); *see also* Letter from Thomas Goode, General Counsel, ATIS, to Marlene H. Dortch, Secretary, FCC, WT Docket Nos. 15-285 and 20-3, at 1-2 (filed Sept. 27, 2023) (ATIS Sept. 27, 2023 Ex Parte Letter) ("Members of the HAC Task Force reiterate their commitment to working towards the goal that all new handsets will meet HAC requirements. . . . This will include an applicable volume control requirement after a transition period. . . .").

¹⁰ ATIS Waiver Petition at 13-14, 19; *see also* CCA Reply at 4; TIA Reply at 2. The Telecommunications Industry Association (TIA) develops technical standards such as the wireless handset volume control standard through a consensus driven process for the benefit manufacturers and consumers. *See* <https://tiaonline.org/>; *infra* para. 8 (explaining that the 2019 ANSI Standard incorporates by reference the TIA volume control standard for wireless handsets).

volume control standard with us on the one-year anniversary of the release date of this Order.¹¹ The two-year waiver period will run from the release date of this Order and ends 24 months after the release date of this Order.

II. BACKGROUND

6. The Commission's wireless hearing aid compatibility rules require handset manufacturers to ensure that at least 85% of the total number of handset models that they offer are certified as hearing aid-compatible.¹² Handsets are considered to be hearing aid-compatible if they meet certain ANSI technical standards that the Commission has incorporated by reference into the wireless hearing aid compatibility rules.¹³ Before 2017 the Commission's wireless hearing aid compatibility rules addressed acoustic and inductive coupling,¹⁴ but in 2017 the Commission modified its wireless hearing aid compatibility rules by adopting a volume control requirement similar to the requirement for wireline phones.¹⁵ The Commission determined that the objectives of section 710 of the Communications Act would be served by modifying the Commission's acoustic coupling provisions for wireless handsets to include a volume control requirement designed to accommodate consumers with hearing loss who use hearing aids or cochlear implants and those with hearing loss who do not use these devices.¹⁶ The Commission affirmed its belief that a volume control requirement that specifies certain levels of amplification as an element of hearing aid compatibility is just as necessary for wireless handsets as it is for wireline phones in order to ensure the provision of effective telecommunication services for people with hearing loss.¹⁷

7. While the Commission adopted a wireless volume control requirement in 2017, the Commission did not adopt a specific wireless volume control technical standard. Instead, the Commission noted that an industry approved technical standard was nearing completion and, once the Commission adopted this standard into its rules, compliance with this standard would constitute compliance with the Commission's new wireless volume control requirement.¹⁸ The Commission suggested that this standard could include: (1) the use of conversational gain for measuring receive loudness; (2) the establishment of minimum value(s) for the acceptable maximum volume(s); (3) the use of a Head and Torso Simulator (HATS); and (4) the use of two force levels for holding the handset next to the ear—2N force for people who use hearing aids, and 8N force for people who do not use hearing aids.¹⁹

¹¹ See *infra* para. 37.

¹² 47 CFR § 20.19(c)(1)(ii).

¹³ 47 CFR § 20.19(b).

¹⁴ Hearing aids operating in acoustic coupling mode receive sounds through a microphone and then amplify all sounds surrounding the user, including both desired sounds, such as a handset's audio signal, and unwanted ambient noise. To use a wireless handset with a hearing aid or cochlear implant in acoustic coupling mode, radiofrequency interference and other electromagnetic interference from the handset must be controlled. Hearing aids operating in inductive coupling mode turn off their microphone to avoid amplifying unwanted ambient noise, instead using a telecoil (T-Coil) to receive only audio signal-based magnetic fields generated by inductive coupling-capable telephones. The hearing aid converts these fields back to sound or to a signal appropriate for cochlear implant users.

¹⁵ See *Amendment of the Commission's Rules Governing Hearing Aid-Compatible Mobile Handsets*, WT Docket No. 07-250, Report and Order and Order on Reconsideration, 32 FCC Rcd 9063, 9073-074, para. 23 (2017) (*2017 HAC Report and Order*).

¹⁶ *Id.* at 9073-074, 9079-080, paras. 23, 32-33.

¹⁷ *Id.* at 9073-074, para. 23.

¹⁸ *Id.* at 9080, 9083, paras. 34, 41.

¹⁹ *Id.* at 9083, para. 41; TIA 5050 Standard § 4.3.

8. In September 2019, the ANSI Committee²⁰ petitioned the Commission to replace the existing 2011 ANSI Standard²¹ referenced in the Commission's rules for handset certification with the new 2019 ANSI Standard.²² The ANSI Committee oversees the development of the ANSI wireless hearing aid compatibility technical standard, and the committee is composed of handset manufacturers and testing laboratories, among other groups.²³ While the 2011 and the 2019 ANSI Standards address acoustic and inductive coupling between wireless handsets and hearing aids, the new standard also includes the wireless volume control technical standard referenced by the Commission in 2017. The 2019 ANSI Standard specifically incorporates by reference the TIA 5050 Standard for volume control and requires handsets to meet this standard along with the rest of the 2019 ANSI Standard in order for a handset to be certified as hearing aid-compatible under this standard.²⁴

9. The TIA 5050 Standard establishes a volume control testing methodology which defines conversational gain as the acoustic output level of speech from a handset relative to the acoustic level that would be present in a face-to-face conversation with two people one meter apart.²⁵ To be compliant with this standard, a handset must undergo testing at 2N and 8N force levels with each force level requiring the passing of three interrelated tests.²⁶ The 2N test requires a handset to demonstrate at least 6 dB of conversational gain while also meeting certain distortion/noise and frequency response requirements.²⁷ The 8N force level test requires a handset to demonstrate at least 18 dB of conversational gain while also meeting the same distortion/noise and frequency response requirements.²⁸

10. In February 2021, the Commission adopted the 2019 ANSI Standard and the related TIA 5050 Standard and made these standards the exclusive wireless hearing aid compatibility certification standards after a two-year transition period that at the time was set to end on June 5, 2023.²⁹ In adopting the 2019 ANSI Standard, the Commission noted that this standard was broadly supported by both

²⁰ The ANSI Committee refers to the Accredited Standards Committee C63®—Electromagnetic Compatibility, which is the accredited standards development organization whose working group, C63.19, is responsible for developing and maintaining ANSI C63.19—the wireless hearing aid compatibility standard. ANSI, Introduction to ANSI, https://www.ansi.org/about_ansi/introduction/introduction.aspx?menuid=1 (last visited Aug. 20, 2023).

²¹ The 2011 ANSI Standard refers to the technical document entitled Accredited Standards Committee C63®—Electromagnetic Compatibility, *American National Standard Methods of Measurement of Compatibility Between Wireless Communications Devices and Hearing Aids*, ANSI C63.19-2011 (approved May 27, 2011) (2011 ANSI Standard).

²² See Report and Petition of American National Standards Institute Accredited Standards Committee C63®, CG Docket No. 13-46, WT Docket Nos. 07-250 and 10-254, at 1 (filed Sept. 23, 2019).

²³ 2019 ANSI Standard at 6-7 (list of participants).

²⁴ *Id.* at § 7 Volume Control (“For a [wireless device] to comply with this standard, ANSI C63.19, it shall also comply with ANSI/TIA-5050-2018”). The TIA 5050 Standard refers to the technical document entitled ANSI/TIA-5050-2018, Telecommunications – Communications Products – Receive Volume Control Requirements for Wireless (Mobile) Devices (approved January 17, 2018) (TIA 5050 Standard).

²⁵ TIA 5050 Standard at § 1; see also 47 CFR § 20.19(a), (l)(2).

²⁶ TIA 5050 Standard § 4.3.

²⁷ *Id.* at §§ 5.1.1, 5.2, 5.3.

²⁸ *Id.*

²⁹ *Amendment of the Commission's Rules Governing Standards for Hearing Aid-Compatible Handsets*, WT Docket No. 20-3, Report and Order, 36 FCC Rcd 4566, 4570, 4576, paras. 9, 22 (2021) (2021 HAC Report and Order). This order found that during the transition period handset manufacturers could use either the 2011 or the 2019 ANSI Standards when certifying new handset models as hearing aid-compatible. *Id.* at 4576, para. 23; 47 CFR § 20.19(b)(2).

industry and consumer groups.³⁰ Further, the Commission observed that the 2019 ANSI Standard “for the first time . . . incorporates a volume control requirement that will provide significant benefits to persons with hearing loss, whether or not they use hearing aids.”³¹

11. On December 16, 2022, ATIS filed a petition requesting that we grant a limited interim waiver of section 20.19(b)(1) and (b)(3) of the Commission’s wireless hearing aid compatibility rules for all entities subject to these rules to allow handsets to be certified under the 2019 ANSI Standard as hearing aid-compatible using a reduced volume control testing methodology.³² ATIS asserts that the existing volume control testing standard is fundamentally flawed because it uses a pulsed-noise signal, which it claims is insufficiently voice-like to be compatible with many modern codecs.³³ ATIS states that the standard’s use of a pulsed-noise signal resulted in none of the handsets that it tested passing the standard.³⁴

12. ATIS’s Waiver Petition requests that the Commission allow handsets to be certified as hearing aid-compatible if they meet the 2019 ANSI Standard’s acoustical and inductive coupling standards in full and meet a reduced volume control standard that would only require a handset to: (1) pass conversational gain for all available codecs and air interface combinations at the 2N level, and (2) obtain passing results for at least one of the handset’s available codecs for the distortion/noise and frequency response requirements.³⁵ Additionally, it requests that we limit the codecs to be tested to those that are within the scope of the TIA 5050 Standard, which includes narrowband and wideband codecs, and that we completely waive the 8N force level test.³⁶ Finally, it requests that the waiver remain in place until the new volume control technical standard that is being developed through the TIA process becomes effective.³⁷

13. At the same time that ATIS filed its waiver petition for a reduced volume control testing standard, the HAC Task Force filed its Final Report setting forth its recommendations for how the Commission can achieve its goal of requiring that all new handsets be certified as hearing aid-compatible.³⁸ The HAC Task Force is an independent organization composed of groups who represent the interests of people with hearing loss, wireless service providers, and wireless handset manufacturers that formed for the purpose of reporting to the Commission on whether requiring 100% of new handsets to be certified as hearing aid-compatible is an achievable objective.³⁹ Part of the HAC Task Force’s Final Report on how the Commission can achieve its 100% objective includes a recommendation that the Commission adopt ATIS’s reduced volume control testing methodology and maintain it until the

³⁰ 2021 HAC Report and Order, 36 FCC Rcd at 4567, para. 2.

³¹ *Id.* at 4568, 4571, 4582, paras. 4, 10, 38; *see also* TIA 5050 Standard at 1 (the standard establishes volume control requirements and testing methods to aid “individuals with hearing loss who may or may not using a hearing device”); TIA 5050 Standard at Annex C, § C.1 (“A volume control can also make a telephone more accessible to persons with hearing impairment who do not use a hearing device.”).

³² ATIS Waiver Petition at 1.

³³ *Id.* at 3-4. ATIS also states that “these testing results do not mean that the handsets failed to produce sufficient volume control for consumers with hearing loss; tested handsets produced increased amplification, consistent with the Commission’s goal for adopting the volume control requirement as part of the HAC rules.” *Id.* at 4 (emphasis in original).

³⁴ *Id.* at 3.

³⁵ *Id.* at 4, 12-13.

³⁶ *Id.* at 4, 12-13.

³⁷ *Id.* at 12, 19.

³⁸ HAC Task Force Final Report and Recommendation, WT Docket No. 15-285 (filed Dec. 16, 2022) (HAC Task Force Final Report).

³⁹ *Id.* at 1.

Commission has an opportunity to adopt a new volume control standard that is presently being developed through the TIA process.⁴⁰

14. Similarly, ATIS's waiver petition cites data from the HAC Task Force's Final Report to support its description of the issues experienced in relation to the testing methodology for volume control.⁴¹ Testing data included in the HAC Task Force's Final Report indicates that for the distortion/noise test the pulse noise signal passed through the Adaptive Multi-Rate (AMR) codec to produce unintended noise and distortion of the signal.⁴² Conversely, testing data included with the Final Report indicates that this problem did not exist when testing was conducted on the Enhanced Voice Services (EVS) codec.⁴³ As a potential solution, the Final Report indicates that the TIA 5050 Standard's requirement that testing be done using any air interface but generally limited to using the AMR codec could be modified or reinterpreted to allow any codec and air interface combination to be used for the distortion/noise and frequency response measurements.⁴⁴

15. On March 23, 2023, the Wireless Telecommunications Bureau (Bureau) released a Public Notice seeking comment on ATIS's waiver petition that established a 45-day comment period that closed on May 18, 2023.⁴⁵ The Public Notice sought comment on ATIS's waiver petition within the context of the Commission's commitment to attaining 100% hearing aid compatibility for all covered wireless handsets, as soon as achievable,⁴⁶ as well as the Commission's previous finding that a volume control requirement is necessary "to ensure the provision of effective telecommunications for people with hearing loss."⁴⁷ In addition to seeking comment on ATIS's waiver petition, Commission staff have met on an *ex parte* basis with the HAC Task Force on multiple occasions and with the Hearing Loss Association of America (HLAA).⁴⁸ HLAA claims to be "the nation's leading organization representing consumers with hearing loss,"⁴⁹ serves as Co-Chair of the HAC Task Force, and supports the HAC Task Force Final Report recommendations.⁵⁰

⁴⁰ *Id.* at ii, 18, 21-22. The Final Report specifically references ATIS's waiver petition and states that the Commission should grant the petition and allow "wireless handsets to meet a modified volume control test that ensures increased amplification for hearing device users until the TIA 5050 standard has been revised and adopted into the FCC's rules." *Id.* at ii. Given ATIS's waiver request, the Final Report does not recommend a handset model deployment benchmark for volume control. *Id.* at 19.

⁴¹ ATIS Waiver Petition at 8-11.

⁴² HAC Task Force Final Report at 85-86.

⁴³ *Id.*

⁴⁴ *Id.* at 89.

⁴⁵ *Wireless Telecommunications Bureau Seeks Comment on ATIS Waiver Request on Behalf of the Covered Entities of the Hearing Aid Compatibility Task Force*, WT Docket No. 20-3, Public Notice, DA 23-250 (rel. Mar. 23, 2023) (HAC Waiver PN). A summary of this public notice was published in the Federal Register on April 3, 2023, and established deadlines of May 3, 2023, for comments and May 18, 2023 for replies. 88 FR 19639 (Apr. 3, 2023).

⁴⁶ See, e.g., *Improvements to Benchmarks and Related Requirements Governing Hearing Aid-Compatible Mobile Handsets*, WT Docket No. 15-285, Report and Order, 31 FCC Rcd 9336, 9337, 9345, paras. 4, 22 (2016) (2016 HAC Report and Order); *2021 HAC Report and Order*, 36 FCC Rcd at 4566, 4577-78, paras. 1, 27-28.

⁴⁷ *2017 HAC Report and Order*, 32 FCC Rcd at 9073-074, para. 23.

⁴⁸ Letters from Thomas Goode, General Counsel, ATIS, to Marlene H. Dortch, Secretary, FCC, WT Docket Nos. 15-285 and 20-3 (filed June 2, 2023, July 18, 2023, July 24, 2023, Aug. 23, 2023); Letter from Lisa Hamlin, Director of Public Policy, HLAA, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 20-3 (filed Apr. 18, 2023) (HLAA Letter).

⁴⁹ See <https://www.hearingloss.org/about-hlaa/>.

⁵⁰ HLAA Letter at 1.

16. On April 14, 2023, the Bureau released an order extending the transition period for exclusive use of the 2019 ANSI Standard and the related TIA 5050 Standard from June 5, 2023, as originally established by the Commission, to December 5, 2023.⁵¹ The Bureau took this step to ensure that handset manufacturers can continue to certify new handset models with hearing aid compatibility features under the 2011 ANSI Standard while the Commission considers ATIS's waiver petition.⁵² The Bureau stated that continuing to allow new handset models to be certified as hearing aid-compatible is essential as the Commission moves to its goal of all handsets being hearing aid-compatible.⁵³

17. Finally, in the ATIS Ex Parte Letter, ATIS reiterates and clarifies its volume control testing proposals contained in its waiver petition, and partially revises its proposals.⁵⁴ Consistent with its original proposal, ATIS reiterates its suggestion that testing at the 2N force level should require passing of conversational gain for all available narrowband and wideband codecs and air interface combinations. With respect to the 8N force level test, however, ATIS modifies its original proposal and suggests that testing at this force level be done on all available narrowband and wideband codecs and air interface combinations; but that the requirement of at least an 18 dB conversational gain passing rate be waived; and that the resulting conversational gain from testing be placed on the handset's package label. Further, ATIS suggests a modification for its proposal for the distortion/noise and frequency response tests. It proposes obtaining "passing results for at least one of the device's narrowband *and* one wideband codecs for the distortion and frequency response," instead of its original suggestion that a passing result would only have to be obtained for one narrowband *or* one wideband codec.⁵⁵ ATIS clarifies, however, that testing of the chosen narrowband and wideband codecs for the distortion/noise and frequency response tests should be limited to one bit rate and only those air interfaces associated with the chosen codecs. Under its proposal, the other narrowband and wideband codecs used for the 2N and 8N force level conversational gain tests are not required to undergo distortion/noise and frequency response testing.⁵⁶

III. DISCUSSION

18. Section 1.3 of the Commission's rules provides that the Commission may "on its own motion or on petition" waive a rule "for good cause shown, in whole or in part, at any time."⁵⁷ The Commission may find that the "good cause shown" standard is met when: (1) "special circumstances warrant a deviation from the general rule" and (2) "such deviation will serve the public interest."⁵⁸ In this case, we find good cause to grant ATIS's waiver request under the conditions discussed below. Further, we find that the underlying purpose of the rule would not be served by strictly applying all of the requirements at this time since such strict enforcement might have an effect of denying consumers most of the benefits of the latest standard.⁵⁹ For this additional reason, we find it in the public interest to grant limited relief and, thereby, permit consumers with hearing loss to benefit from the advantages that

⁵¹ 2023 HAC Extension Order, at para. 1.

⁵² *Id.*

⁵³ *Id.*

⁵⁴ ATIS Ex Parte Letter at 2.

⁵⁵ *Id.* at 2 (emphasis added).

⁵⁶ *Id.* at 2 & n.5, 3 & n.7. Because the TIA 5050 Standard requires narrowband and wideband codecs to undergo distortion/noise and frequency response testing as part of determining the conversational gain for each codec at the 2N and 8N force levels, the ATIS Ex Parte Letter proposes two alternatives for performing the 2N and 8N conversational gain tests for those codecs that are not required to undergo distortion/noise and frequency response testing under ATIS's proposal. *Id.* at 2 & n.5

⁵⁷ 47 CFR § 1.3.

⁵⁸ See, e.g., *Ne. Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990); see *WAIT Radio v. FCC*, 418 F.2d 1153, 1157-59 (D.C. Cir. 1969) (*WAIT Radio*).

⁵⁹ 47 CFR § 1.925(b)(3).

the 2019 ANSI Standard offers beyond just volume control while at the same time ensuring some volume control benefits.

19. We find special circumstances exist that warrant a deviation from the general rule as well as the fact that strict compliance with the volume control testing standard at this time would undermine the general purpose of the hearing aid compatibility rules. Specifically, ATIS asserts that there are “significant and material problems with the methodology used for testing volume control” that render compliance with the 2019 ANSI Standard functionally impossible given that the standard requires compliance with the TIA 5050 Standard.⁶⁰ According to ATIS, the problem relates to section 20.19(b)(3)(i) of the Commission’s wireless hearing aid compatibility rules even though handset manufacturers never addressed this rule in their filed comments when the Commission was considering adopting the 2019 ANSI Standard and the related TIA 5050 Standard. This provision provides that “a handset is hearing aid-compatible if it meets the 2019 ANSI standard for all frequency bands that are specified in the ANSI standard and all air interfaces over which it operates on those frequency bands. . . .”⁶¹ In turn, the 2019 ANSI Standard specifies that in order for a handset to meet the standard’s volume control requirements the handset must meet the requirements of the TIA 5050 Standard.⁶² The TIA 5050 Standard specifies that handsets must be tested for volume control using one AMR narrowband codec and one AMR wideband codec or the next closest codec if the AMR narrowband or wideband codec is not available in combination with any available air interface of the manufacturer’s choosing that supports the codec being tested.⁶³

20. While the TIA 5050 Standard generally limits testing to one AMR narrowband and one AMR wideband codec in combination with an air interface of the manufacturer’s choosing, ATIS asserts that this is not the case in practice because of the testing guidance the Office of Engineering and Technology (OET) Laboratory Division has issued.⁶⁴ ATIS states that OET’s testing guidance effectively requires a handset to pass the Commission’s volume control standard on all available codecs and air interface combinations even though the TIA 5050 Standard does not specify this approach.⁶⁵ According to ATIS, this situation results from OET’s guidance requiring handset manufacturers to investigate and document “worst-case test conditions and results.”⁶⁶ ATIS states that this all air interface/frequency/codec testing requirement results in a testing standard that handsets cannot pass because the TIA 5050 Standard does not use a speech-like signal that can pass substantially unchanged through all possible speech codecs.⁶⁷

⁶⁰ ATIS Waiver Petition at 3, 6, 9; *see also* CTA Reply at 2; UL Solutions Reply at 1.

⁶¹ 47 CFR § 20.19(b)(3)(i).

⁶² 2019 ANSI Standard at § 7.

⁶³ TIA 5050 Standard at §§ 4.5, 4.5.1, 4.5.2, 4.6.

⁶⁴ ATIS Waiver Petition at 3-4 & n.9. OET’s Laboratory Division issues staff guidance documents to assist the public in following Commission requirements. These documents do not constitute rules and are referred to as Knowledge Database documents or KDBs. *See* <https://apps.fcc.gov/oetcf/kdb/>.

⁶⁵ *See* 285076 DO4 Volume Control v01r01 at https://apps.fcc.gov/kdb/GetAttachment.html?id=sWZ54%2BmGi5Dx5TcA4B7QOQ%3D%3D&desc=285076%20D04%20Volume%20Control%20v01r01&tracking_number=36388 (KDB Volume Control Guidance).

⁶⁶ OET’s KDB Volume Control Guidance states that: “Each submitted test report shall document the codec type (i.e., NB, WB, EVS, etc.), every air interface (i.e., LTE, 5G NR, WI-FI), and band supported for the worst-case codec bit rate, band channel, bandwidth, air interface bit rate, subcarrier spacings, and resource blocks, for the handset to be considered compliant to § 20.19(b)(3).” KDB Volume Control Guidance at § 2.

⁶⁷ ATIS Waiver Petition at 10. ATIS believes this problem has to do with the fact that the TIA 5050 Standard’s testing methodology was developed using pulsed-noise signals that are insufficiently voice-like to be compatible with many modern codecs. *Id.* at 3-4, 10.

21. In support of its argument, ATIS states that all of the handsets that it tested using the 2019 ANSI Standard failed to pass this standard.⁶⁸ Specifically, ATIS states that it tested eighteen handset models that had recently been certified as hearing aid-compatible using the 2011 ANSI Standard and all of these handsets failed to pass the 2019 ANSI Standard because of the Commission's all air interface/frequency/codecs testing requirement reflected in OET's Knowledge Database (KDB) Volume Control Guidance document.⁶⁹ According to ATIS, the tested handsets represented a range of handset models offered by manufacturers, with models being offered at a range of price points, having multiple form factors, and having multiple chip set providers.⁷⁰

22. No party filed comments opposing ATIS's request for a reduced volume control testing methodology on an interim basis until a full volume control testing methodology can take effect.⁷¹ Commenters echo ATIS's statement that the current volume control testing methodology is flawed and needs to be modified so consumers with hearing loss can benefit from other aspects of the 2019 ANSI Standard.⁷² The unanimous supporters of ATIS's waiver request include HLAA, an advocacy organization which represents consumers with hearing loss.⁷³ In addition to these comments, handset manufacturers' most recent compliance filings reveal that not a single handset has been certified as hearing aid-compatible under the 2019 ANSI Standard.⁷⁴ Rather, these reports indicate that all of the handsets that manufacturers are currently offering have been certified as hearing aid-compatible using the 2011 ANSI Standard.

23. Based on these special circumstances and the fact that the underlying purpose of our hearing aid compatibility rules would be frustrated by strict adherence to the volume control testing standard, we find it in the public interest to take action to ensure that handset manufacturers can certify handsets as hearing aid-compatible under the 2019 ANSI Standard and consumers with hearing loss can benefit from the advantages that the 2019 ANSI Standard offers, including some volume control benefits. While ATIS is requesting that we waive certain aspects of the volume control testing methodology as an interim measure, ATIS is not requesting a waiver of the 2019 ANSI Standard's acoustic and inductive coupling requirements. We agree with ATIS and commenters that by waiving certain aspects of the volume control testing methodology, we allow consumers who use hearing aids or cochlear implants to receive the benefits of the 2019 ANSI Standard's heightened RF interference requirements, and we allow consumers who use telecoils to receive the benefits of the 2019 ANSI Standard's improved inductive coupling requirements.⁷⁵ In addition, the 2019 ANSI Standard offers other consumers benefits, including coverage of new technologies and devices, and an expanded frequency range.⁷⁶ As commenters observe, granting the waiver request will allow consumers with

⁶⁸ *Id.* at 3 & n.8, 8-9.

⁶⁹ *See supra* para. 20 (discussing the KDB Volume Control Guidance document).

⁷⁰ ATIS Waiver Petition at 3 & n.8, 8-9.

⁷¹ MWF Comments at 4; CCA Reply at 3-4; CTA Reply at 2; HAC Task Force Reply at 1, 3-4, 5; TIA Reply at 2, 4; UL Solutions Reply at 1.

⁷² MWF Comments at 5; CCA Reply at 2-4; CTA Reply at 2; Task Force Reply at 3-5; UL Solutions Reply at 1.

⁷³ HLAA Letter at 2; *see also* CTA Reply at 1.

⁷⁴ *See* FCC, Hearing Aid Compatibility Reports: Device Manufacturers Summary, Hearing Aid Compatibility Status Reporting, <https://www.fcc.gov/wireless/systems-utilities/universal-licensing-system/hearing-aid-compatibility-status-reporting-1>.

⁷⁵ ATIS Waiver Petition at 5, 13, 15; CCA Reply at 3-4; CTA Reply at 2.

⁷⁶ ATIS Waiver Petition at 5, 15; 2021 HAC Report and Order, 36 FCC Rcd at 4571, para. 6.

hearing loss to fully benefit from the improvements that the 2019 ANSI Standard offers that go beyond those related to volume control.⁷⁷

24. *2N Force Level Conversational Gain Test.* With these benefits in mind, for the conversational gain test at the 2N force level we accept ATIS's proposal as clarified in the ATIS Ex Parte Letter and condition this waiver on handsets having to pass testing using all available narrowband and wideband codecs and air interface combinations.⁷⁸ Further, we require handset manufacturers to place the lowest conversational gain that results from this testing on the handset's package label in a manner consistent with our hearing aid compatibility labeling rules. This approach is consistent with ATIS's waiver request. It is also consistent with our package labeling requirements, which require the lowest conversational gain that results from testing the various combinations of narrowband and wideband codecs and air interfaces to be placed on the package label in order to avoid an inflated test result being placed on the label.⁷⁹ In addition, commenters universally support ATIS's 2N force level test proposal as well as all other aspects of ATIS's waiver testing proposals.

25. *8N Force Level Conversational Gain Test.* As ATIS suggests in the ATIS Ex Parte Letter, manufacturers will continue to be required to conduct the 8N force level conversational gain test, but we waive the requirement that the test achieve at least an 18 dB passing rate.⁸⁰ Under this approach, manufacturers are required to perform the 8N force level test using the same testing parameters as established for the 2N force level test, and must place the resulting conversational gain (even if it is below 18 dB) on the handset's package label in a manner consistent with our existing hearing aid compatibility labeling rules.⁸¹ This decision is consistent with one of the stated reasons that the Commission adopted a handset volume control requirement, which is not only to aid consumers with hearing loss who use hearing devices, but also to aid consumers with hearing loss who do not use hearing devices.⁸² The approach we adopt for the 8N force level test is consistent with this objective and gives consumers with hearing loss who do not use hearing aids the relevant information that they need to make informed handset purchasing decisions.

26. *Distortion/Noise and Frequency Response Tests.* With respect to the related distortion/noise and frequency response tests at the 2N and 8N force levels, we accept ATIS's suggestions set forth in the ATIS Ex Parte Letter. Consistent with the ATIS Ex Parte Letter, we condition this waiver on handsets having to pass testing using at least one narrowband *and* one wideband codec of the manufacturer's choosing. Further, we accept ATIS's suggestion that the chosen narrowband and wideband codecs will be tested using one bit rate and with only those air interfaces associated with the chosen codecs.⁸³ We also accept ATIS's suggestion that only the chosen narrowband and wideband codecs will be tested for distortion/noise and frequency response and the other codecs used for testing for conversational gain at the 2N and 8N force levels are not required to undergo the

⁷⁷ HLA Letter at 2; CCA Reply at 3-4; CTA Reply at 2; HAC Task Force Reply at 2, 5-6; UL Solutions Reply at 1.

⁷⁸ The ATIS Ex Parte Letter clarifies that the 2N and 8N force level testing will be done on all available codecs and with all air interfaces, but in performing the conversational gain test as specified in the TIA 5050 Standard, these codecs are not required to undergo testing for distortion/noise and frequency response unless they are the specific codecs that manufacturers have chosen for the distortion/noise and frequency response tests. ATIS Ex Parte Letter at 2 & n.5.

⁷⁹ 47 CFR § 20.19(f)(1); *see also infra* para. 32.

⁸⁰ ATIS Ex Parte Letter at 2.

⁸¹ 47 CFR § 20.19(f)(1).

⁸² 2017 HAC Report and Order, 32 FCC Rcd at 9073-074, 9077-078, 9079-080, 9083, paras. 23, 29, 33, 41.

⁸³ ATIS states that testing over all bit rates as opposed to just one bit rate will "not benefit consumers because it would not create meaningfully helpful results." ATIS Ex Parte Letter at 3 & n.7. Further, ATIS "notes that the magnetic testing for telecoil (which tests all bitrates) is a fundamentally different test than the *audio* testing being done for volume control." *Id.* (emphasis in original).

distortion/noise and frequency response tests.⁸⁴ In this regard, we accept ATIS's "alternative method" for determining the volume control setting for purposes of testing the other codecs for conversational gain and for reporting those test results consistent with that method.⁸⁵

27. This approach follows the TIA 5050 Standard's requirement that handsets pass testing using one narrowband and one wideband codec.⁸⁶ This approach also gives assurance that a handset's amplifier/speaker combination will meet consumer expectations over both narrowband and wideband modes of voice communications as envisioned by the current standard. At the same time, our decision to accept ATIS's proposed modification and allow manufacturers to choose which narrowband and wideband codecs to test gives manufacturers more flexibility than the TIA 5050 Standard, which specifies the narrowband and wideband codecs to be tested. We accept ATIS's suggestion on this point given the testing methodology flaw seen when testing an AMR codec.

28. ATIS's proposal to give manufacturers flexibility to choose any codec for testing appears linked to the data in the HAC Task Force's Final Report that handsets cannot pass the distortion/noise and frequency response tests using certain codecs. In particular, the data relied upon by ATIS indicates that handsets cannot pass the distortion/noise test when tested using the AMR codecs specified in the TIA 5050 Standard.⁸⁷ ATIS asserts that the developers of the TIA 5050 Standard did not attempt to resolve the technical difficulty of developing a test signal with speech-like characteristics that could pass substantially unchanged through all possible speech codecs or that would evaluate the end-to-end transparency of the various speech codecs.⁸⁸

29. The HAC Task Force's Final Report, however, includes data from two unnamed manufacturers indicating that four of their handsets were able to pass the distortion/noise part of the volume control testing standard using an EVS wideband codec as opposed to an AMR wideband codec.⁸⁹ We are concerned that if manufacturers choose to test just narrowband codecs, the tested handsets will fail to demonstrate the performance of their speaker/amplifier combinations when a wideband voice codec is used. As a result, for the distortion/noise and frequency response tests at the 2N and 8N force level, rather than requiring testing of both narrowband and wideband AMR codecs, as generally required by the TIA 5050 Standard, we require that handsets pass testing of at least one narrowband codec and one wideband codec of the manufacturer's choosing, as discussed above.

30. For the distortion/noise and frequency response tests at the 2N and 8N force levels, manufacturers must choose codecs that are within the scope of the TIA 5050 Standard, which include narrowband and wideband codecs, but these codecs do not necessarily have to be AMR codecs. That is, we are not limiting the codecs that manufacturers can choose for testing to just AMR narrowband and

⁸⁴ *Id.* at 2 & n.5.

⁸⁵ Under ATIS's alternative method for testing the other codecs when it performs conversational gain testing, a manufacturer will first establish the volume control setting by conducting the full set of tests for the selected narrowband and wideband codecs. The manufacturer will then use this adjusted volume control setting for purposes of testing the other codecs and air interfaces for conversational gain at the 2N and 8N force levels. *Id.* This more conservative approach is preferable to the other approach ATIS suggests which is to test the other codecs and air interfaces without first determining the volume control adjustment. *Id.* Determining the volume control adjustment first—as part of the complete test for at least one narrowband and one wideband codec selected for distortion/noise and frequency response testing—before testing the other codecs and air interfaces may lead to more accurate conversational gain test results for these other codecs.

⁸⁶ TIA 5050 Standard §§ 4.5, 5.

⁸⁷ HAC Task Force Final Report at 84-87.

⁸⁸ *Id.* at 88-89; *see also* ATIS Waiver Petition at 3-4, 10. In addition, ATIS's waiver petition states that "TIA 5050 was not intended to be used to validate the quality of electrical transmission of the codec or air interface itself." ATIS Waiver Petition at 10.

⁸⁹ HAC Task Force Final Report at 84-87.

AMR wideband codecs as defined in sections 4.5.1 and 4.5.2 of the TIA 5050 Standard. While manufacturers may choose to test AMR narrowband and AMR wideband codecs, they can also choose EVS narrowband and EVS wideband codecs or any other narrowband or wideband codecs that are within the scope of the TIA 5050 Standard. If a handset does not have a wideband codec or the handset only has an AMR wideband codec, then the test report must document this fact and the passing requirement under these circumstances for the wideband codec test is waived. The passing results for the distortion/noise and frequency response tests must be reported in the handset's test report.

31. *Revised Volume Control KDB Guidance.* To help in this matter, OET, in coordination with WTB, will issue a revised KDB guidance document for volume control testing consistent with this Order.⁹⁰ This revised KDB guidance will address the technical testing requirements for the conversational gain, distortion/noise, and frequency response requirements that are part of the conditions of this Order. The KDB guidance will also address the reporting requirements for the test data required under the conditions of this Order. Manufacturers and testing laboratories are expected to fully follow the KDB guidance's testing instructions as issued. These testing requirements are to ensure the best listening experience for consumers with hearing loss as possible under the waiver we grant today.

32. *Labeling Requirements.* We remind handset manufacturers that our hearing aid compatibility labeling rules require certain information to be placed on a handset's package label and additional information be provided in the handset's package insert and user manual.⁹¹ Our handset package labeling rules require that a handset that is certified as hearing aid-compatible state on the handset's package label that the handset is hearing aid-compatible. In addition, if the handset is certified under a standard that includes volume control requirements, such as under the 2019 ANSI Standard, the label must specify the handset's conversational gain with and without hearing aids.⁹² These requirements give consumers the most pertinent information on a handset's package label and allow consumers to determine if the conversational gain of the handset meets their needs.⁹³

33. In addition, for handsets certified as meeting volume control testing requirements, our rules require that package inserts and user manuals for these kinds of handsets provide an explanation of the handset's volume control capabilities and how special testing circumstances such as those permitted by this Order affect those functions.⁹⁴ Consumers must have this information to ensure they can purchase handsets that best meet their individual needs. Since we are waiving certain aspects of the all air interface/frequency/codec volume control testing approach, consumers must be informed as to how this change affects the volume control capabilities of a handset they are considering that has been certified as hearing aid-compatible under the conditions of this Order. We require package inserts and user manuals for these type of handsets to state which codecs and air interface combinations were used to pass testing for conversational gain and for the related distortion/noise and frequency response tests and which codecs and air interfaces were not tested. Consumers must be able to understand the volume control capabilities of tested operations and non-tested operations and what this means in terms of the volume control differences between the two types of operations.⁹⁵

⁹⁰ See *supra* n.64 (defining a KDB guidance document). The revised KDB guidance will be available through OET's KDB website using Publication Number 285076. See <https://apps.fcc.gov/oetcf/kdb/>.

⁹¹ 47 CFR § 20.19(f).

⁹² 47 CFR § 20.19(f)(1).

⁹³ 2021 HAC Report and Order, 36 FCC Red at 4581, para. 35.

⁹⁴ 47 CFR § 20.19(f)(2)(vii)-(viii).

⁹⁵ Consumers may contact the FCC's Disability Rights Office with questions concerning our hearing aid compatibility requirements. The Office's contact information can be found here: <https://www.fcc.gov/accessibility>. The Office has prepared a consumer guide on Hearing Aid Compatibility for Wireline and Wireless Telephones that can be found here: <https://www.fcc.gov/consumers/guides/hearing-aid-compatibility-wireline-and-wireless-telephones>.

34. *Benchmark Compliance.* Pursuant to this Order, we allow handsets that pass the volume control testing requirements set forth above, as well as the rest of the 2019 ANSI Standard's testing requirements, to be certified as hearing aid-compatible under the 2019 ANSI Standard and the related TIA 5050 Standard. Handsets that satisfy all of these requirements may be marketed as meeting the Commission's hearing aid compatibility requirements and counted as hearing aid-compatible for benchmark deployment purposes. The same is true for handsets that meet the above testing requirements through the permissive change process. These types of handsets can also be marketed as meeting the Commission's hearing aid compatibility requirements and counted as hearing aid-compatible for benchmark deployment purposes. Handset manufacturers, however, must continue to comply with all other aspects of our wireless hearing aid compatibility rules, including labeling, website posting, and reporting requirements.

35. During the remainder of the exclusive use transition period that ends on December 5, 2023, handset manufacturers may continue to certify handsets as hearing aid-compatible using either the 2011 ANSI Standard or the 2019 ANSI Standard as conditioned by this Order.⁹⁶ Handsets certified as hearing aid-compatible under either of these standards may be counted for benchmark deployment purposes. Consistent with established practice, however, handset manufacturers must use one or the other standard for certification purposes and may not mix parts of each standard.⁹⁷ After December 5, 2023, handset manufacturers may only certify new handsets as hearing aid-compatible using the 2019 ANSI Standard as conditioned by this Order.

36. *Waiver Time Limit.* The waiver we adopt today becomes effective upon the release date of this Order and will continue to be effective for a two-year period after the release date of this Order. ATIS and commenters have indicated that a new volume control standard is being developed through the TIA process and that they expect the process to move quickly in order to make the new standard available to the Commission to make effective.⁹⁸ We plan to hold parties to this commitment, and we expect parties to expedite the process for developing a new volume control standard in time for the Commission to adopt the new standard prior to the waiver period expiring. In order to meet this objective, we encourage parties to work rapidly and cooperatively for the benefit of consumers with hearing loss.

37. We further condition this Order on ATIS filing with us a letter on the one-year anniversary of the release date of this Order. This letter must appraise the Commission on the status of the development of a new volume control standard and any issues that have arisen with respect to the establishment of the new standard. Further, the letter must inform us as to when the new standard will be made available to the Commission for adoption. This letter should be seen as an opportunity for ATIS to inform the Commission that parties are on track to petition the Commission to adopt the new standard prior to the waiver period expiring.

38. We find that our actions today are not only in the public interest but also fully consistent with the underlying purpose of our wireless hearing aid compatibility rules. These rules are based on the principle that consumers with hearing loss should have the same access to the newest and most advanced handsets as consumers without hearing loss.⁹⁹ By waiving certain handset testing requirements under the conditions of this Order, we ensure that the underlying purpose of our hearing aid compatibility rules is not frustrated. This Order allows new handsets to be certified under the 2019 ANSI Standard and consumers with hearing loss will be able to enjoy the benefits that these new handsets will be designed

⁹⁶ 2023 HAC Extension Order, at paras. 1, 10.

⁹⁷ 2021 HAC Report and Order, 36 FCC Rcd at 4577, para. 26.

⁹⁸ ATIS Waiver Petition at 13-14, 19; CCA Reply at 4; TIA Reply at 2.

⁹⁹ *Amendment of the Commission's Rules Governing Hearing Aid-Compatible Mobile Handsets*, WT Docket No. 07-250, Policy Statement and Second Report and Order and Further Notice of Proposed Rulemaking, 25 FCC Rcd 11167, 11174, para. 18 (2010).

to offer. In addition, our decision permits handset manufacturers to be able to certify new handsets as hearing aid-compatible after the exclusive use transition period ends this coming December. As such, our actions today are consistent with the underlying purpose of our hearing aid compatibility rules and avoid that purpose from being frustrated by strict adherence to the volume control testing requirements. In view of the unique and unusual factual circumstances of this case, we find that strict application of the volume control testing requirements would be contrary to the public interest.

39. Finally, our decision is consistent with our goal of requiring all new handsets to be certified as hearing aid-compatible.¹⁰⁰ We are encouraged by the members of the HAC Task Force reiterating “their commitment to working towards the goal that all new handsets will meet HAC requirements,” including “an applicable volume control standard.”¹⁰¹ We continue to strive toward our goal of 100% hearing aid compatibility in the near future and our decision to conditionally waive certain aspects of our volume control testing requirements as discussed above is consistent with this objective. Our decision allows handset manufacturers to continue the process of certifying all of their handsets as hearing aid-compatible, as many currently do.¹⁰²

40. *Paperwork Reduction Act.* This document does not contain new or substantively modified information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. In addition, therefore, it does not contain any new or modified information collection burden for small business concerns with fewer than 25 employees, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. § 3506(c)(4).

IV. ORDERING CLAUSE

41. Accordingly, IT IS ORDERED, pursuant to sections 4(i), 303(r), and 610 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(r), 710, and sections 0.331 and 1.3 of the Commission’s rules, 47 CFR §§ 0.331 and 1.3, that ATIS’s request for a partial waiver of Section 20.19(b)(1) and (b)(3) IS GRANTED to the extent indicated herein.

42. IT IS FURTHER ORDERED that this Order IS EFFECTIVE upon release and will remain effective for 24 months from the release date of this Order.

43. IT IS FURTHER ORDERED that the Office of the Managing Director, Performance Evaluation and Records Management, SHALL SEND a copy of this Order in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act, 5 U.S.C. § 801(a)(1)(A).

FEDERAL COMMUNICATIONS COMMISSION

Joel Taubenblatt
Chief, Wireless Telecommunications Bureau

¹⁰⁰ 2016 HAC Report and Order, 31 FCC Rcd at 9337, 9345, paras. 4, 22; *see also* HAC Task Force Reply at 1-2.

¹⁰¹ ATIS Sept. 27, 2023 Ex Parte Letter at 1-2.

¹⁰² *See* FCC, Hearing Aid Compatibility Reports: Device Manufacturers Summary, Hearing Aid Compatibility Status Reporting, <https://www.fcc.gov/wireless/systems-utilities/universal-licensing-system/hearing-aid-compatibility-status-reporting-1> (many handset manufacturers report 100% compliance).