



Federal Communications Commission
Office of Engineering and Technology
Laboratory Division

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HAC COMPLIANCE UNDER WAIVER DA 23-914

1. BACKGROUND

This attachment, KDB 285076 D05 HAC Compliance Under Waiver, provides guidance that amends KDB 285076 D04 Volume Control for handset certification for compliance with the volume control requirements under waiver DA 23-914.¹

In February 2021, the Commission adopted the 2019 ANSI Standard, which referenced the TIA 5050 Volume Control Standard for conversational gain that passed the frequency response and distortion requirements for hearing aid compatibility certification.² These standards became effective for all grants issued on or after June 5, 2023, which was extended to December 5, 2023.³ On or after December 5, 2023, all grants shall comply with guidance 285076 D04 Volume Control for handsets not under the waiver or 285076 D04 Volume Control as amended by this attachment, 285076 D05 HAC Compliance, under waiver DA 23-914.

For a handset to be certified as HAC under the 2019 ANSI Standard, the handset must pass the following testing requirements: Clause 4, “Evaluation of WD FR Interference Potential;” Clause 6, “WD T-Coil Signal Test;” and Clause 7, “Volume Control.” Clause 7 of the 2019 ANSI Standard requires compliance with the TIA 5050 Volume Control Standard.⁴

¹ Manufactures shall note that all applications for certification under waiver DA 23-914 require Telecommunication Certification Bodies (TCB) to use the Pre-Approval Guidance (PAG) procedure defined in Knowledge Data Base (KDB) 388624 item "WAIVER". The administrative procedures for filing any application under a waiver is defined in KDB publication 502150.

² 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; see also 47 CFR § 20.19(b)(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 August 19, 2019). The TIA 5050 Volume Control 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).

³ 47 CFR § 20.19(b)(1); Amendment of the Commission’s Rules Governing Standards for Hearing Aid-Compatible Handsets, WT Docket No. 20-3, Order, DA 23-327 (rel. April 14, 2023).

⁴ This requires passing for all air interfaces, as stated in 285076 D04 Volume Control for handsets. The KDB was updated on 10/24/2022 to clarify that volume control must comply with the rules of §20.19(b)(3), which provides (continued...)

In December 2022, the Alliance for Telecommunications Industry Solutions (ATIS) sought a limited waiver of sections 20.19(b)(1) and (b)(3) of the Commission’s wireless hearing aid compatibility rules for the TIA 5050 Volume Control Standard that handset manufacturers use in part to certify handsets as hearing aid-compatible under the 2019 ANSI Standard.⁵ On September 29, 2023, the Wireless Telecommunications Bureau (WTB) released an Order addressing ATIS’s waiver request.⁶ This Order establishes the conditions of the waiver and must be read in full and in combination with this guidance and 285076 D04 Volume Control for handsets document.

Term Of Waiver: The waiver will expire two years from the release date of waiver order DA 23-914.

2. TECHNICAL TESTING GUIDANCE

This section addresses the technical testing requirements for the conversational gain, distortion, and frequency response tests that amends KDB 285076 D04 Volume Control under the conditions of the limited-term waiver DA 23-914.

- a. Under the waiver, only CMRS narrowband and CMRS wideband voice codecs⁷ are required to comply with the volume control requirements of the TIA 5050-2018 Volume Control Standard as amended as follows:
 1. For the 2N mounting force test, one narrowband and one wideband voice codec embedded with the handset must pass with at least one volume control setting with a conversational gain of ≥ 6 dB for all voice services, bands of operation and air interfaces over which it operates using one codec bit rate of the applicant’s choosing.
 2. For the 8N mounting force test, one narrowband and one wideband voice codec embedded with the handset must pass with at least one volume control setting with a conversational gain of ≥ 6 dB⁸ for all voice services, bands of operation and air interfaces over which they operate but is not required to meet or exceed the full 18 dB of conversational gain specified in section 5.1.1 of the TIA 5050 Volume Control Standard using one codec bit rate of the applicant’s choosing.
- b. For all other narrowband and wideband codecs not evaluated in 2.a. above, TIA 5050-2018 Receive Distortion and Noise Performance and Receive Acoustic Frequency Response Performance evaluations are not required; however, these codecs shall be assessed for conversational gain and documented in the test report at the 2N and 8N levels with a gain of ≥ 6 dB for all voice services,

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, and the handset has been certified as compliant with the test requirements for the 2019 ANSI standard”

⁵ 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).

⁶ Amendment of the Commission’s Rules Governing Standards for Hearing Aid-Compatible Handsets, WT Docket No. 20-3, Order, DA 23-914 (rel. Sept. 29, 2023). Cluse 4. Evaluation of WD RF interference potential and cluse 6. WD T-Coil signal test: The handset must pass in full these requirements of the 2019 ANSI Standard. These requirements are not waived.

⁷ For example, AMR and EVS codecs that operate over licensed-frequency bands and Wi-Fi Calling.

⁸ For the 8N test, the test report shall report the actual gain measured.

bands of operation and air interfaces over which they operate.⁹ The handset volume setting used to comply with 2.a. shall be used for these other CMRS codec evaluations.¹⁰

- c. Any other codec for voice services embedded in the handset, not identified in 2.a. and 2.b. above,¹¹ is not required to comply or demonstrate in the test reports for conversational gain.¹²

3. OTHER CONSIDERATIONS FOR HAC COMPLIANCE

- a. Package label requirements shall be in compliance with 47 CFR 20.19(f)(1) and state actual conversational gain obtained under the waiver for the passing codecs demonstrated in 2.a. and 2.b. above and for the lowest conversational gain achieved for each 2N and 8N.
- b. In addition to 2.a. and 2.b. above, handsets must also comply with the 2019 ANSI Standard: clause 4, Evaluation of WD RF interference potential, and clause 6, WD T-Coil signal test, for all voice services, codecs, bands of operation, and air interfaces over which it operates to be considered HAC compliant under the waiver.
- c. After December 5, 2023, handsets must be certified under either the waiver conditions or meet the 2019 ANSI Standard and the TIA 5050 Volume Control Standard in their entirety. After the expiration of the waiver period, and absent further Commission action, handsets can only be certified as hearing aid-compatible if the handset meets the entire 2019 ANSI Standard and the related TIA 5050 Volume Control Standard.
- d. The waiver conditions expire two years after the release date of waiver order DA 23-914. Handsets granted under the waiver are grandfathered as hearing aid-compatible.¹³
- e. For demonstrating compliance in exhibit test reports, test reduction practices can be followed to reduce the number of possible combinations that need to be documented¹⁴.
- f. Since not all codecs supported by the device must comply, the test report is expected to contain a list of all codecs supported by the device, irrespective of whether those codecs complied, were evaluated, or were not required to be evaluated for conversational gain under the waiver.

4. CHANGE NOTICE:

09/29/2023: Initial publication

⁹ The ATIS Ex Parte Letter of September 12, 2023 suggests testing over all codec bit rates; however, reporting only the worst-case bit rate is required.

¹⁰ This is consistent with the “alternative method” described by ATIS in the Ex Parte Letter of September 12, 2023.

¹¹ e.g., Google Meet, Apple Facetime, non-3GPP VoIP codecs.

¹² Waiver DA 23-914 only requires conversational gain compliance for CMRS narrowband and CMRS wideband voice codecs as stated above. All other codecs either part of 3GPP set such as full-band and super-wideband codecs or OTT codecs are to be documented in the test report but not required to comply with the TIA 5050 Volume Control Standard.

¹³ See 47 CFR § 20.19(b)(5).

¹⁴ Test reduction is permitted under 285076 D01 HAC Guidance in the Testing Guidance section.