HAC Updates

Laboratory Division

Office of Engineering and Technology

Justin Rison

Note: The views expressed in this presentation are those of the authors and may not necessarily represent the views of the Federal Communications Commission.

Waiver Background

- June 5, 2021 – 47 CFR 20.19(b)(1) requires that handsets certified as HAC shall meet the 2019 ANSI standard (ANSI C63.19-2019) if certified on or after June 5, 2023
  - Section 5 of C63.19-2019 references ANSI/TIA-5050 2018 for Volume Control
- December 16, 2022 – ATIS requested a limited waiver of the Volume Control standard
- April 14, 2023 – FCC releases order extending the transition period which allowed continued use of the 2011 ANSI standard until December 5, 2023
- September 29, 2023 – The commission published Waiver Order DA 23-914

HAC Waiver Order

- Waiver order DA 23-914 is in effect for 2-years (expires September 29, 2025)
- KDB Publication 285076 attachments D01 & D04 have been updated to reference the waiver order
- KDB 285076 D05 published and contains guidance for handsets certified under the waiver
  - KDB 285076 D04 is amended by D05 but D04 may still be used in its entirety without using the waiver and D05.

HAC Waiver Test Guidance for HAC Compliance

A. CMRS Codecs required to Pass 5.2 & 5.3 Freq & Distortion with Conversational Gain (CG) as noted below.

	2N	8N
A1: Freq. Response & Distortion. TIA-5050 §§5.2 & 5.3	One CMRS narrowband* and One CMRS wideband* voice codec over all air interfaces over which it operates at a bit rate of choice. *Either AMR and EVS codecs that operate over licensed-frequency bands and Wi-Fi Calling	
A2: Conversational Gain for each A1 test above. TIA-5050 §5.1	Limit ≥ 6 dB. Documented in Test report for worst case CG for each A1 test above. (for 8N anticipated to be > 6dB)	

HAC Waiver Test Guidance for HAC Compliance

B. All Other CMRS Codecs not required to Frequency Response and Distortion but required to be tested for Conversational Gain as noted below.

	2N	8N
B1: Freq. Response & Distortion TIA-5050 §§5.2 & 5.3	Not required for all	
B1. Conversational Gain TIA-5050 §5.1*	Limit ≥ 6 dB. Documented in Test report for worst case for each CMRS codec and air interfaces over which it operates for both 2N and 8N. 8N results anticipated to be > 6dB	

C. All Other Codecs are not required to be tested for Volume Control under the waiver. All other codecs either part of 3GPP set such as full-band and super-wideband codecs or OTT codecs are to be noted as offered (as noted in 285076 D01 HAC Guidance D01 Appendix B) in the test report but not required to comply under the waiver with the TIA 5050 Volume Control Standard.

D. The package label [requirements 47 CFR 20.19(f)(1)] shall be lowest 2N and 8N CG values tested obtained for A (Freq/ Dist with CG) and B (CG)

T-Coil, RF Emissions, and Label Requirements

- 2019 ANSI standard section 4 (RF emissions) and section 6 (telecoil) are required
  - i.e., no waiver is given for RF emissions and telecoil test requirements

- Report the lowest conversational gain measured for 2N and 8N for all CMRS narrowband and wideband codecs tested as required by 47 CFR §20.19(f)(1)
  - Do not include CMRS super-wideband, full-band, and non-CMRS codecs in this determination if evaluated
  - The limit for 2N is ≥ 6dB
  - Limit for 8N ≥ 6dB but anticipated to be > 6dB

Other Considerations

- As always, test reduction is permitted for HAC testing and is covered in D01
- Reminders about ANSI C63.19-2019
  - During transition period, mixing of C63.19-2011 and C63.19-2019 is not permitted
  - Transition period for using C63.19-2011 ends December 4, 2023
  - Handsets certified on or after December 5, 2023 will need to either comply with the waiver or ANSI C63.19-2019 in full to be considered toward HAC benchmarks
- The PAG Item “WAIVER” is applicable
- HAC5GS PAG item only required if Call Box does not support establishing 5GNR voice connections

Questions?