

9/25/2008

## Equipment Authorization Guidance for Hearing Aid Compatibility

### **Introduction:**

This publication provides guidance<sup>1</sup> to clarify the Hearing Aid Compatibility (HAC) equipment certification requirements for wireless handsets subject to 47 CFR 20.19<sup>2</sup> of the rules.

Manufacturers of wireless handsets must submit, as part of the equipment certification process, HAC report exhibit(s)<sup>3</sup> supporting the HAC rating of the model(s)<sup>4</sup> marketed in the U.S. and tested according to the ANSI C63.19 standard.<sup>5</sup>

### **Equipment Certification**

1. HAC test report exhibit(s) are submitted with a Form 731 application, either as an original application, or as a Class II Permissive Change application to add or change the HAC rating of a certified handset.
2. A HAC test report exhibit must contain one complete M test report for model(s) marketed and reported as an M#, or one complete M and one complete T report (see example appendix A) for models(s) marketed and reported as M#T#.

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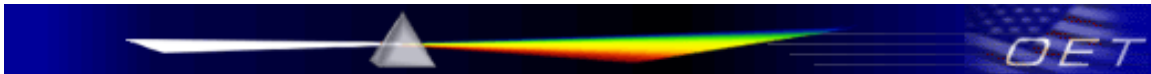
<sup>1</sup> Telecommunication Certification Bodies (TCB), test laboratories, and manufacturers can use this document for equipment certification guidance; however, some requirements may only be applicable to TCB(s) - for example: grant comments and grant note identification entered on the Grant of Equipment Authorization.

<sup>2</sup> FCC 08-68 released February 28, 2008 and effective June 6, 2008 revised the Hearing Aid Compatibility rules of Section 20.19

<sup>3</sup> Service providers and manufacturers are required to make available (providers to customers and manufacturers to providers) a number or percentage of Hearing Aid Compatible (HAC) handset models used in delivery of the digital Commercial Mobile Radio Service. The number is defined by a schedule in Section 20.19 (c) - *Phase-in of requirements relating to radio frequency interference*. Both (providers and manufacturers) must also submit to the Federal Communications Commission Wireless Telecommunications Bureau (WTB) regular reports demonstrating compliance to the schedule in Section 20.19, according to a reporting schedule set out in Section 20.19(i). The handset - model/FCCID/HAC Rating/standard-version - reported to the WTB must match the FCCID/HAC Rating/standard-version granted and the supporting test report exhibits in the Equipment Authorization System (EAS). There is no requirement that the Grant and HAC report exhibits include an up to date model designation in the EAS for each model reported to the WTB.

<sup>4</sup> The requirement for what constitutes a model; the number or percentage of HAC-rated models to be offered; the standard version number that is required; reporting requirements, etc. are defined in Section 20.19. Questions regarding these subjects can be referred to the Wireless Telecommunications Bureau Michael Rowan, [Michael.rowan@fcc.gov](mailto:Michael.rowan@fcc.gov), 202-418-1883

<sup>5</sup> ANSI C63.19 IEEE - Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids



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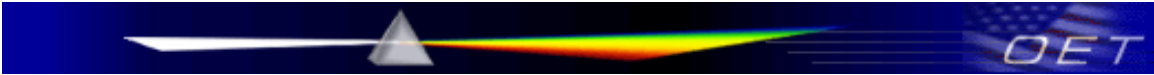
3. The test report exhibit must demonstrate compliance according to ANSI C63.19-2006 or ANSI C63.19-2007. Beginning January 1, 2010, ANSI C63.19-2007 must be used for new certifications or permissive changes.
4. A HAC compliance report can only be submitted if HAC standards for all bands and/or air interfaces for providing Commercial Mobile Radio Service (CMRS Section 20.9) are defined in the ANSI C63.19-2006/2007 standard and the device meets those standards in all bands and/or interfaces in which it operates. The one exception<sup>6</sup> is a handset using Wi-Fi. The applicability of this exception must be clearly stated in the test report and the user's manual; and other consumer materials must clearly disclose that the handset has not been rated for hearing aid compatibility with respect to the Wi-Fi capability. Please note that if this exception is applicable the test report shall not contain Wi-Fi test results for this band (see item 5 below). If a handset operates over other bands and/or air interfaces for which HAC standards are not defined in ANSI C63.19-2006/2007, guidance must be sought on a case-by-case basis.<sup>7</sup>
5. HAC test data for air interfaces and bands not defined in ANSI C63.19-2007 will not be accepted.
6. A grant note of "HC"<sup>8</sup> must be selected in the grant note field, and the note will appear on the Grant of Authorization. The text "HAC Rating M#T\$-200N must be included in the grant comment.<sup>8</sup> (See Items 9 and 10 below when multiple models are marketed with different HAC ratings under the same FCC ID.)
7. An application package for an M and T rating must be based on the same ANSI C63.19 version.
8. An application package that shows performance results in the M4, or M4T4 category cannot declare a lower rating (M3, M3T4). In all cases, the test report must have test results demonstrating the same rating declared by the manufacturer and reported to the Wireless Telecommunications Bureau.

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<sup>6</sup> Digital handsets using Wi-Fi are eligible to be HAC rated, even though there are no established standards. See FCC 08-68 Released February 28, 2008 effective June 6, 2008 paras. 66-68.

<sup>7</sup> Questions regarding this guidance can be sent to the Wireless Telecommunications Bureau Michael Rowan, [Michael.rowan@fcc.gov](mailto:Michael.rowan@fcc.gov), 202-418-1883.

<sup>8</sup> The grant comment shall be formatted as "HAC Rating M#T\$-200N" (# =M Rating [3, 4]; \$= T Rating [3, 4]; N= ANSI C63.19 version [6, 7]).



**Permissive Changes, Product Changes and Model Variations**

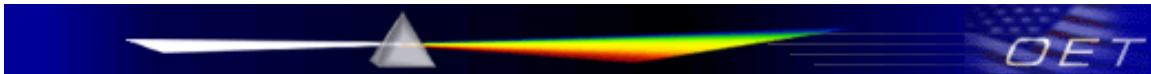
- 9. Multiple compliance reports under one FCC ID that represent distinct models<sup>9</sup> with different HAC ratings are permissible. A Form 731 application is required for each model variant that has a distinct HAC rating. After the initial Form 731 application for an original application, subsequent Form 731 applications for a Class II permissive change request shall be filed.
- 10. For model variations<sup>10</sup> approved under one FCC ID with multiple HAC ratings, a grant note of “HC” must be entered in the grant note field and “HAC Ratings: M#T\$-200N, M#T\$-200N” must be included in the grant comments for all the approved HAC ratings.<sup>11</sup>
- 11. Any changes that affect the HAC rating must be reported as a Class II Permissive Change.<sup>12</sup> The handset must be given a new model designation distinct from that of the prior version of the handset.
- 12. A Class II Permissive Change application that only includes an M report for a phone previously granted as a M#T\$ is only acceptable if (1) the handset is no longer to be marketed or reported as a M#T\$, or (2) there are HAC model variations. The grant comment associated with the Class II Permissive Change would then be “HAC Rating: M#” or “HAC Ratings: M#T\$, M#” for examples 1 and 2 respectively. For cases where the modified equipment continues to be marketed and reported as an M#T\$, revised test data must be submitted in both the M and T reports. If the modification to the equipment results in a change in the HAC rating, a new model designation distinct from that of the handset is required (see item 11).

<sup>9</sup> If a manufacturer assigns different model designations solely to distinguish units (for either the same or different FCC ID), or to signify other distinctions that do not relate to either form, features, or capabilities, such designations shall not count as distinct models for purposes of compliance to the required schedule.

<sup>10</sup> The grant comment “HAC rating only evaluated for the specific configurations described in this filing” is no longer required.

<sup>11</sup> The grant comment must list all HAC ratings for handsets under one FCC ID offered to carriers and reported to the WTB as HAC compliant. The format is “HAC Ratings: M#T\$-200N, M#T\$-200N” after the (:) each distinctive rating/model is separated by a (,).

<sup>12</sup> ANSI C63.19 M rating measurements evaluate the near fields of the RF electrical and magnetic fields at a distance of 1 or 1.5 cm. (ANSI C63.19-2006 uses 1 cm and ANSI C63.19-2007 uses 1.5 cm) from the surface of the handset earpiece. Any type of equipment modification (antenna position, design, metallic surface, adding system processes, changing battery capacity or type, etc.) has the potential to change the rating. The manufacturer must evaluate the equipment modification to determine if there is a change in the rating and if a Class II Permissive Change is required. Equipment changes that do not result in a change of the HAC rating being marketed and reported to the WTB do not require a Class II Permissive Change application and can be considered a Class I Permissive Change.



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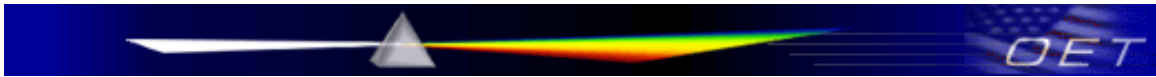
13. When adding T-coil and rating to a device the Class II Permissive Change procedure shall be followed, and a complete M and complete T report submittal is required. If there has been no product change to the handset, the M report submitted may use the same results obtained for the previous application.
14. If the manufacturer builds the product with alternative components, it must be tested and show compliance using the components representing the worst case situation, according to the guidance for the permissive change rules<sup>13</sup>.

### **Features to be Tested**

15. Only held to ear modes need to be tested. The Form 731 application exhibits shall include a clear description justifying the features activated, or not activated, during testing.
16. No external special parts or ancillary devices are permitted in order to demonstrate HAC compliance.
17. A handset model with user instructions that disable any of its features, degrade performance, reduce RF output power, degrade battery performance, etc. for the purpose of meeting HAC compliance is not permitted
18. Settings may be acceptable for processing audio signals in accordance with ANSI C63.19 requirements in order to improve the performance for the hearing impaired. A clear description of these controls must be provided in the application test report.
19. The antenna must be tested in the optimum performance position. If an antenna extension is not obvious, a declaration from the manufacturer regarding the optimum antenna position must be described in the test report, in accordance with ANSI C63.19 requirements.
20. The rating for a phone must be in accordance with the method defined by the ANSI C63.19 version of the standard used. For example, only tests based on the ANSI C63.9-2007 standard can decouple the M and T rating.
21. Since the ANSI C63.19-2006 and ANSI C63.19-2007 use different measurement distances<sup>10</sup> to determine the M rating, the test report package must document that the appropriate measurement plane, gauge block measurement and offset values use the correct values for ANSI C63.19-2006 or ANSI C63.19-2007.
22. The application shall document and list all marketed features<sup>14</sup> of the tested model(s), including all radio services (by 47 CFR Part) on which the equipment

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<sup>13</sup> Permissive Change Policies – KDB 178919



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operates, air interfaces, bands and user capabilities, special HAC audio configurations permitted in accordance with ANSI C63.19, statements regarding special antenna positions for HAC compliance, etc.

23. The applicant shall provide a general declaration stating that specific transmission modes do not operate in the held to ear mode for providing phone service (i.e. Wi-Fi, Bluetooth profile is not in held to ear modes for phone service).
24. Use of any feature discussed above that is disabled during testing must be intuitive, or clearly documented in the user's manual.

#### Appendix A: Example of Test Report

1. Summary
2. Test Site Description
3. Description of Test System
4. Equipment List
5. Description of EUT<sup>14</sup>
  - a. Model Modes Features and Capabilities
  - b. Justification of Held to Ear Modes Tested
6. Test Procedure
7. Test System Validation, Calibration and Alignment Procedures
8. Detailed Measurements for M and T Ratings
9. Measurement Uncertainty
10. Calibration Certificates
11. References and Supporting Test Data
12. Detailed Test Measurement Plots

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<sup>14</sup> An applicant has the option to submit the description of the EUT as a separate exhibit in the Operational Description, and request short term confidentiality.