



Innovation, Science and  
Economic Development Canada

Innovation, Sciences et  
Développement économique Canada

RSS-HAC  
Issue 1  
March 2019

Spectrum Management and Telecommunications

Radio Standards Specification

# Hearing Aid Compatibility and Volume Control

Aussi disponible en français — CNR-CPA

Canada 

## Preface

Radio Standards Specification RSS-HAC (Hearing Aid Compatibility), issue 1, *Hearing Aid Compatibility and Volume Control*, sets out the compliance requirements for hearing aid compatibility and volume control features for specific radio apparatus.

This RSS-HAC shall be used in conjunction with [other applicable RSSs](#). This issue of the RSS-HAC standard will come into force upon its publication on Innovation, Science and Economic Development Canada's (ISED) website.

Inquiries may be submitted by one of the following methods:

1. Online, using the [General Inquiry](#) form (select the Regulatory Standards Branch radio button and specify "RSS-HAC" in the General Inquiry field).
2. By mail to the following address:

Innovation, Science and Economic Development Canada  
Engineering, Planning and Standards Branch  
Attention: Regulatory Standards Directorate  
235 Queen Street  
Ottawa ON K1A 0H5

3. By [email](mailto:ic.consultationradiostandards-consultationnormesradio.ic@canada.ca) to: [ic.consultationradiostandards-consultationnormesradio.ic@canada.ca](mailto:ic.consultationradiostandards-consultationnormesradio.ic@canada.ca)

Comments and suggestions for improving this standard may be submitted online using the [Standard Change Request](#) form or by mail or email to the above addresses.

All spectrum and telecommunications-related documents are available on ISED's [Spectrum Management and Telecommunications](#) website.

Issued under the authority of  
the Minister of Innovation, Science and Economic Development

---

Martin Proulx  
Director General  
Engineering, Planning and Standards Branch

## Contents

<b>1. Scope .....</b>	<b>1</b>
<b>2. Coming into force and transition period .....</b>	<b>1</b>
<b>3. Purpose and application .....</b>	<b>1</b>
<b>4. Certification requirement .....</b>	<b>1</b>
<b>5. Normative references .....</b>	<b>1</b>
<b>6. Related documents .....</b>	<b>2</b>
<b>7. Volume control .....</b>	<b>2</b>
7.1. Narrowband and wideband transmission modes .....	2
7.2. Receive volume control performance .....	2
7.3. Receive distortion and noise performance .....	2
7.4. Receive acoustic frequency response performance .....	2
<b>8. Hearing aid compatibility .....</b>	<b>3</b>
8.1. M-rating (wireless device RF emissions test) .....	3
8.2. T-rating (wireless device T-Coil signal test) .....	3
<b>9. RSS-HAC test report requirements .....</b>	<b>3</b>

## 1. Scope

This Radio Standards Specification (RSS-HAC), *Hearing Aid Compatibility and Volume Control*, sets out the compliance requirements for hearing aid compatibility and volume control features for specific radio apparatus.

## 2. Coming into force and transition period

This document will come into force upon its publication on Innovation, Science and Economic Development Canada's (ISED) [Spectrum Management and Telecommunications website](#).

Manufacturers shall ensure that all radio apparatus that fall under the scope of this standard are compliant with the requirements of this standard no later than **January 1, 2024**.

## 3. Purpose and application

The volume control gain feature gives individuals with a hearing impairment the ability to increase the volume of a device. Hearing aid compatibility features will accommodate individuals with hearing aids and cochlear implants. These features minimize potential issues generated by the use of these hearing aids and enhance the hearing experience of users.

Compliance with volume control and hearing aid compatibility requirements has been required on telephone handsets under part V of CS-03, [Compliance Specification for Terminal Equipment, Terminal Systems, Network Protection Devices, Connection Arrangements and Hearing Aids Compatibility](#) for many years. With the increased penetration of wireless handsets on the Canadian market, cellphones are becoming the predominant communication devices used today. Thus, it is reasonable to expect that the same accessibility features, which were and are still required on telephones, also be offered on wireless handsets.

## 4. Certification requirement

Compliance with RSS-HAC shall be evaluated in the context of an application for certification submitted under the RSS(s) applicable to the frequency band and/or technology that pertains to the equipment for which certification is sought.

RSS-HAC shall be used in conjunction with the applicable RSSs listed on ISED's [Certification and Engineering Bureau](#) website.

## 5. Normative references

The following documents, along with the normative references included therein, shall be referred to:

- ANSI/TIA-5050, *Receive Volume Control Requirements for Wireless (Mobile) Devices*
- ANSI C63.19-2011, *American National Standard Methods of Measurement of Compatibility Between Wireless Communications Devices and Hearing Aids*

ANSI – American National Standards Institute  
TIA – Telecommunications Industry Association

Definitions and terminology used in RSS-HAC are described in detail in the respective normative documents.

## **6. Related documents**

ISED documents are available in the [Official publications](#) section of the Spectrum Management and Telecommunications website.

## **7. Volume control**

Measurements shall be performed for volume control in accordance with the method of measurements provided in the normative document ANSI/TIA-5050.

In addition, the conversational gain when tested at the maximum volume setting shall be limited to a maximum of 30 dB and a maximum acoustic level of 100 dB SPL or less.

To measure the maximum acoustic level of 100 dB SPL, increase the -20 dBm0 at the Receive Electrical Test Point (RETP) by steps of 10 dB and measure the acoustic output at the Drum Reference Point (DRP) until the measured acoustic output is constant or has reached saturation.

### **7.1. Narrowband and wideband transmission modes**

The radio apparatus shall comply with either narrowband and/or wideband transmission modes as applicable, described in ANSI/TIA-5050. If a device only supports one transmission mode, it will be considered compliant with this standard if it complies with the requirements of that mode. The test report shall clearly indicate which mode was used for testing.

### **7.2. Receive volume control performance**

The radio apparatus shall comply with the receive volume control performance for narrowband and/or wideband frequency response limits referenced in ANSI/TIA 5050.

### **7.3. Receive distortion and noise performance**

The radio apparatus shall comply with receive distortion and noise performance for narrowband and/or wideband frequency response limits referenced in ANSI/TIA-5050.

### **7.4. Receive acoustic frequency response performance**

The radio apparatus shall comply with the acoustic frequency response performance for narrowband and/or wideband frequency response limits referenced in ANSI/TIA-5050.

## 8. Hearing aid compatibility

Measurements shall be performed for hearing aid compatibility in accordance with the method of measurements provided in the normative document ANSI C63.19:2011. Should there be any discrepancies between the normative ANSI standard and the present standard (RSS-HAC), the measurement requirements of RSS-HAC shall take precedence.

### 8.1. M-rating (wireless device RF emissions test)

The radio apparatus shall meet, at a minimum, the M3 rating as described in ANSI C63.19:2011.

### 8.2. T-rating (wireless device T-Coil signal test)

The radio apparatus shall meet, at a minimum, the T3 rating as described in ANSI C63.19:2011.

## 9. RSS-HAC test report requirements

In addition to the reporting requirements set forth in RSS-Gen, [General Requirements for Compliance of Radio Apparatus](#), and any other applicable RSSs, the test report shall include:

- a. A summary of all tests listed in section 7 and section 8 of the present standard, with a notation of whether the equipment under test (EUT) is in compliance or not with the specific requirements (i.e. PASS or FAIL).
- b. The transmission mode (narrowband, wideband) in which the device was tested.
- c. The detailed results of the measurements conducted on the product as described in section 7 and section 8 of the present standard. (Alternative measurement methods may be used provided they are fully described in the test report. However, ISED's [Certification and Engineering Bureau](#) shall be consulted to determine the acceptability of alternative measurement methods.)