



Spectrum Management and Telecommunications

Radio Standards Specification

General Radio Service Equipment Operating in the Band 26.960 MHz to 27.410 MHz (Citizens Band)

Preface

Radio Standards Specification RSS-236, issue 2, *General Radio Service Equipment Operating in the Band 26.960 MHz to 27.410 MHz (Citizens Band)*, replaces RSS-236, issue 1, dated September 2012.

The main changes are listed below:

1. modified Table 1 in section 4.1
2. changed the method of measurement in section 3.5 and 4.5 from ANSI C63.10 to ANSI C63.26
3. removed section 4.3 Antennas
4. modified sections 4.10 the new FM audio emission F3E
5. removed references to A1D, H1D, J1D, R1D from sections 4.10, 4.11, and 4.12
6. added reference bandwidth to the unwanted transmission in 4.12
7. made editorial changes and clarifications, as appropriate

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1. Online using the [General Inquiry](#) form. In the form, select the Directorate of Regulatory Standards radio button and specify "RSS-236" in the General Inquiry field.
2. By mail to the following address:

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Ottawa ON K1A 0H5
Canada
3. By email to consultationradiostandards-consultationnormesradio@ised-isde.gc.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 documents related to spectrum and telecommunications are available on ISED's [Spectrum Management and Telecommunications](#) website.

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37 the Minister of Innovation, Science and Industry

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42 _____
Martin Proulx

43 Director General

44 Engineering, Planning and Standards Branch

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DRAFT

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71 **1. Scope**

72
73 This Radio Standards Specification (RSS) sets out general requirements for, and provides
74 information on, the certification of radio apparatus that is used for the General Radio
75 Service, also known as the Citizens Band (CB), operating in the 26.960-27.410 MHz
76 frequency band.

78 **2. Purpose and application**

79
80 The Citizens Band (CB) is a two-way, short-distance, voice communications service for
81 either personal or business activities of the general public.

82
83 Operators should reference the operational policies and procedures outlined in [RIC-18](#),
84 General Radio Service (GRS).

86 **3. General requirements and references**

87
88 This section sets out the general requirements and references related to this RSS.

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3.1 Coming into force and transition period

This standard will be in force as of the date of its publication on Innovation, Science and Economic Development Canada’s (ISED) website.

However, a transition period of six months from the publication date will be provided, within which compliance with RSS-236 issue 1, or RSS-236 issue 2, will be accepted. After this period, only applications for the certification of equipment under RSS-236 issue 2 will be accepted. Furthermore after this transition period, equipment manufactured, imported, distributed, leased, offered for sale, or sold in Canada shall comply with RSS-236 issue 2.

A copy of RSS-236, issue 1, is available upon request by [email](#).

3.2 Certification requirements

Equipment covered by this standard is classified as Category I equipment. Either a technical acceptance certificate (TAC) issued by ISED’s [Certification and Engineering Bureau](#) or a certificate issued by a recognized certification body is required.

3.3 Licensing requirements

Equipment covered by this standard is exempt from licensing requirements pursuant to section 15 of the [Radiocommunication Regulations](#).

3.4 RSS-Gen compliance

Equipment being certified under this standard shall also comply with the general requirements set out in Radio Standards Specification RSS-Gen, [General Requirements for Compliance of Radio Apparatus](#).

3.5 Normative publications

The following document shall be consulted in conjunction with this RSS:

ANSI C63.26, “American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services”.

The applicable version of the ETSI/ANSI standards and accepted KDB are listed on ISED’s [Certification and Engineering Bureau](#) website.

131 **3.6 Related documents**

132
133 All spectrum-related documents referred to in this paper are available on ISED's
134 [Spectrum Management and Telecommunications](#) website.

135
136 The following documents should be consulted in conjunction with this RSS:

137
138 RIC-18, [General Radio Service \(GRS\)](#)

139
140 TRC-43, [Designation of Emissions, Class of Station and Nature of Service](#)

141
142 **4. Transmitter requirements**

143
144 This section sets out the requirements applicable to radio transmitters subject to this
145 standard.

146
147
148 **4.1 Channel Allocation**

149
150 CB channel allocations have been established in the band 26.960 - 27.410 MHz with
151 the following frequencies:

152
153
154 **Table 1: CB channel allocations**

CB Channel	Carrier Frequency	CB Channel	Carrier Frequency	CB Channel	Carrier Frequency	CB Channel	Carrier Frequency
1	26.965	11	27.085	21	27.215	31	27.315
2	26.975	12	27.105	22	27.225	32	27.325
3	26.985	13	27.115	23	27.255	33	27.335
4	27.005	14	27.125	24	27.235	34	27.345
5	27.015	15	27.135	25	27.245	35	27.355
6	27.025	16	27.155	26	27.265	36	27.365
7	27.035	17	27.165	27	27.275	37	27.375
8	27.055	18	27.175	28	27.285	38	27.385
9	27.065	19	27.185	29	27.295	39	27.395
10	27.075	20	27.205	30	27.305	40	27.405

155
156 All transmitters shall operate the nominal carrier frequency (f_c) at the frequencies listed
157 in Table 1.

158

159 **4.2 Frequency Allocation**
160

161 In the case of double-sideband (DSB) radio equipment, the assigned frequency shall be
162 the nominal f_c .
163

164 In the case of single-sideband (SSB) equipment, the assigned frequency shall be 1.40
165 kHz above the f_c for upper-sideband (USB) operation, and 1.40 kHz below for lower-
166 sideband (LSB) operation.
167

168 **4.3 External controls**
169

170 There shall be no external controls that cause the equipment to operate in a manner
171 that would violate the requirements of this standard. If a speech clarifier control is
172 provided, it shall not change the transmitter frequency.
173

174 **4.4 Use of batteries**
175

176 Connection to batteries (if used) shall be made in such a manner as to permit
177 replacement by the user without causing improper operation of the transmitter with
178 respect to this RSS.
179

180 **4.5 Measurement method**
181

182 All measurements shall be performed in accordance with the techniques and
183 procedures for measuring equipment provided in ANSI C63.26 "American National
184 Standard for Compliance Testing of Transmitters Used in Licensed Radio Services".
185

186 **4.6 Measurements for Single-Sideband (SSB)**
187

188 The transmitter shall be modulated with a two-tone audio input signal. The test signals
189 shall consist of two sinusoidal tones at the frequencies of 500 Hz +/- 5% and 2400 Hz
190 +/- 5%, which—when simultaneously applied to the audio input of an SSB transmitter—
191 result in equal amplitude radio frequency output signals.
192

193 A sample of the output shall be fed to a spectrum analyzer (or an equivalent instrument)
194 to which the level of the audio input signal is increased. The audio level will be
195 increased until the highest amplitude, odd-order, difference frequency intermodulation
196 product is 20 dB below the level of either of the two test tones or until there is no further
197 increase in output power. The average power output shall then be measured by suitable
198 means. The means used shall be clearly specified in the test report. The peak envelope
199 power is then twice the average power.
200

201 The transmitter shall be operated with the carrier suppressed and modulated with two
202 frequency test signals at a level to produce 50% of the average power measured above.
203 A sample of the output shall be fed to a spectrum analyzer (or equivalent test
204 equipment) and the level of the input signal increased by 10 dB, with the levels of both
205 fundamental signals equal. The sampled output shall be analyzed from the lowest
206 intermediate frequency (IF) generated to 1000 MHz and levels of all significant
207 components recorded in the test report.
208

209 **4.7 Measurement method for Double-Sideband (DSB)**

211 The transmitter shall be operated without modulation. The average carrier power output
212 shall then be measured by suitable means. The means used shall be clearly specified in
213 the test report.
214

215 The transmitter shall be operated using a 2400 Hz modulated sinusoidal signal at a
216 level sufficient to produce 50% of modulation.
217

218 A sample of the RF output shall be fed to a spectrum analyzer or equivalent test
219 equipment and the level of the input signal increased by 16 dB. The sampled output
220 shall be analyzed from the lowest IF generated to 1000 MHz and the levels of all
221 significant components recorded in the test report.
222

223 **4.8 Transmitter Output Power Limits**

225 The transmitter output power shall not exceed 4.0 watts for a DSB mode of operations.
226 For SSB, the RF peak envelope power output shall not exceed 12 watts.
227

228 **4.9 Types of modulation**

230 Transmitters should not employ digital modulation and should not transmit non-voice
231 data except for non-voice emissions as identified in section 4.10.
232

233 **4.10 Permissible emissions**

235 Permissible emissions include the following types: A3E, F3E, H3E, J3E and R3E.
236

237 Non-voice emissions are limited to selective calling or tone-operated squelch tones to
238 establish or to continue voice communications.
239

240 **4.11 Authorized bandwidth**

242 The authorized bandwidth for emission types H3E, J3E and R3E is 4 kHz. The
243 authorized bandwidth for emission types A3E and F3E is 8 kHz.

244
245 When emission type A3E is transmitted by a CB transmitter having a total power of
246 greater than 2.5 W, the CB transmitter must automatically prevent the modulation from
247 exceeding 100%.

248
249 When emission type F3E is transmitted by a CB transmitter the peak frequency
250 deviation shall not exceed ± 2 kHz.

251
252 Each CB transmitter that transmits emission type H3E, J3E or R3E shall be capable of
253 transmitting the upper sideband with suppressed, reduced or full carrier, respectively.
254 The capability of also transmitting the lower sideband with suppressed, reduced or full
255 carrier is permitted.

256
257 **4.12 Transmitter unwanted emissions**

258
259 Unwanted emissions from licence-exempt transmitters that fall within restricted bands
260 as identified in RSS-Gen shall comply with field strength limits as identified in RSS-Gen.

261
262 However, all other emissions shall comply with the limits as identified in this section.

263
264 The unwanted emissions shall be attenuated below the total transmitter power (Pt) by
265 the following levels:

266
267 For A3E, and F3E:

- 268 • At least 25 dB on any frequency removed from the center of the authorized
269 bandwidth by more than 50%, up to and including 100% of the authorized
270 bandwidth, the power of unwanted emissions is to be measured with a
271 reference bandwidth of 300 Hz;
- 272 • At least 35 dB on any frequency removed from the center of the authorized
273 bandwidth by more than 100%, up to and including 250% of the authorized
274 bandwidth, the power of unwanted emissions is to be measured with a
275 reference bandwidth of 300 Hz;
- 276 • At least $53 + 10 \log_{10}(P_t)$ dB on any frequency removed from the center of the
277 authorized bandwidth by more than 250% of the authorized bandwidth, the
278 power of unwanted emissions is to be measured with a reference bandwidth
279 of at least 30 kHz; and
- 280 • At least 60 dB on any frequency equal to or greater than twice the
281 fundamental frequency, the power of unwanted emissions is to be measured
282 with a reference bandwidth of at least 30 kHz.

283
284 For H3E, J3E and R3E:

- 285 • At least 25 dB on any frequency removed from the center of the authorized
286 bandwidth by more than 50%, up to and including 150% of the authorized

- 287 bandwidth, the power of unwanted emissions is to be measured with a
288 reference bandwidth of 300 Hz;
- 289 • At least 35 dB on any frequency removed from the center of the authorized
290 bandwidth by more than 150%, up to and including 250% of the authorized
291 bandwidth, the power of unwanted emissions is to be measured with a
292 reference bandwidth of 300 Hz;
 - 293 • At least $53 + 10 \log_{10}(P_t)$ dB on any frequency removed from the center of the
294 authorized bandwidth by more than 250% of the authorized bandwidth, the
295 power of unwanted emissions is to be measured with a reference bandwidth
296 of at least 30 kHz; and
 - 297 • At least 60 dB on any frequency equal to or greater than twice the
298 fundamental frequency, the power of unwanted emissions is to be measured
299 with a reference bandwidth of at least 30 kHz.

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