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# **Standards for the Operation of Radio Stations in the Amateur Radio Service**

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**Canada**

## Preface

Comments and suggestions may be directed to the following address:

Industry Canada  
Spectrum Management Operations Branch (JETN, 15<sup>th</sup> Floor)  
235 Queen Street  
Ottawa, Ontario K1A 0H5

Attention: Spectrum Management Operations

Email: [spectrum\\_pubs@ic.gc.ca](mailto:spectrum_pubs@ic.gc.ca)

All spectrum publications are available on the Spectrum Management and Telecommunications website at <http://www.ic.gc.ca/spectrum>.

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## 1. Scope

This document sets out the standards for the operation of radio stations in the amateur radio service. Operators must comply with these provisions in accordance with sections 45, 52 and 53 of the *Radiocommunication Regulations*.

## 2. Definitions

For the purposes of this standard,

“amateur station” means a radio station operated in the amateur radio service;

“foreign amateur” means an individual who holds:

- (a) an amateur radio operator licence issued by the Government of the United States, where the holder is a citizen and resident of the United States; or
- (b) a ministerial authorization in accordance with the provisions of paragraph 42(i) of the *Radiocommunication Regulations*;

“Regulations” means the *Radiocommunication Regulations*.

## 3. Frequency Bands and Qualifications

An operator of an amateur station may operate within the frequency bands set out in the attached Schedules I, II and III in accordance with the operator’s qualifications identified for the specified band.

### 3.1 Foreign Amateur Equivalencies

- 3.1.1 A foreign amateur who is not qualified to send and receive in Morse code may operate an amateur station in Canada in accordance with the provisions applicable to the holder of an Amateur Radio Operator Certificate with Basic Qualification.
- 3.1.2 A foreign amateur who is qualified to send and receive in Morse code at a speed of at least 5 w.p.m. may operate an amateur station in Canada in accordance with the provisions applicable to the holder of an Amateur Radio Operator Certificate with Basic, Morse Code (5 w.p.m.) and Advanced Qualifications.

## 4. Bandwidths

- 4.1 The maximum permissible bandwidth of a transmitted signal is set out in Column II of Schedules I, II and III (attached).

- 4.2 The bandwidth of a signal shall be determined by measuring the frequency band occupied by that signal at a level that is 26 dB below the maximum amplitude of that signal.

## **5. Frequencies for Radio Control of Models**

The frequency for the radio control of a model is limited to any frequency within the frequency bands above 30 MHz, as set out in Schedule I.

## **6. Communications on Behalf of Third Parties**

In cases of emergencies or disaster relief, international third party communications are expressly permitted unless specifically prohibited by a foreign administration.

Any foreign administration may permit its amateur stations to communicate on behalf of third parties without having to enter into any special arrangements with Canada.

Canada does not prohibit international communications on behalf of third parties.

## **7. Operation Outside Canada**

- 7.1 An amateur station that is operating on board a ship in international waters or on board an aircraft in international airspace may operate on any frequency within the frequency bands and corresponding bandwidths set out in Schedule I, II or III, as the case may be and subject to the requirements for operator qualifications.
- 7.2 For the purposes of Schedules I, II and III, Regions 1, 2 and 3 are defined in Article 8 of the International Telecommunication Union's *Radio Regulations*, as amended from time to time.

## **8. Interference**

Transmissions from an amateur station shall not cause harmful interference to a station operating in another service nor be protected from interference caused by a station operating in another service in the same frequency band, as set out in Column I of Schedule I, in accordance with the provisions of sections 52 and 53 of the Regulations.

## **9. Station Identification**

- 9.1 The operator of an amateur station in Canada shall identify the station by transmitting the call sign assigned to that station.
- 9.2 The operator of an amateur station licensed by the Government of the United States shall identify the station:

- (a) by transmitting the call sign assigned to the licensee's station by the Federal Communications Commission;
- (b) if transmitting:
  - (i) by radiotelephony, by adding the word "mobile" or "portable," or
  - (ii) by radiotelegraphy, by adding an oblique character ("/"); and
- (c) by adding the Canadian amateur call sign prefix set out in Column I of an item of Schedule IV for the geographical location of the station set out in Column II of that item.

9.3 The operator of any amateur station shall transmit the applicable identification referred to in Section 9.1 or 9.2 as appropriate, in English or in French, at the beginning and at the end of each period of exchange of communication or test transmission, and at intervals of not more than 30 minutes throughout the period of exchange of communication.

## **10. Restrictions on Capacity and Power Output**

The transmitting power of an amplifier installed at an amateur station shall not be capable of exceeding by more than 3 dB the transmitting power limits described in this section.

### **10.1 Amateur Radio Operator Certificate with Basic Qualification**

The holder of an Amateur Radio Operator Certificate with Basic Qualification is limited to a maximum transmitting power of:

- (a) where expressed as direct-current input power, 250 W to the anode or collector circuit of the transmitter stage that supplies radio frequency energy to the antenna; or
- (b) where expressed as radio frequency output power measured across an impedance-matched load,
  - (i) 560 W peak envelope power for transmitters that produce any type of single sideband emission, or
  - (ii) 190 W carrier power for transmitters that produce any other type of emission.

### **10.2 Amateur Radio Operator Certificate with Advanced Qualification**

The holder of an Amateur Radio Operator Certificate with Advanced Qualification is limited to a maximum transmitting power of:

- (a) where expressed as direct-current input power, 1,000 W to the anode or collector circuit of the transmitter stage that supplies radio frequency energy to the antenna; or
- (b) where expressed as radio frequency output power measured across an impedance-matched load,

- (i) 2,250 W peak envelope power for transmitters that produce any type of single sideband emission, or
- (ii) 750 W carrier power for transmitters that produce any other type of emission.

## **11. Unmodulated Carriers and Retransmission**

- 11.1 An unmodulated carrier in a frequency band below 30 MHz may be transmitted for brief tests.
- 11.2 Radiotelephone signals in a frequency band below 29.50 MHz cannot be automatically retransmitted unless these signals are received from a station operated by a person qualified to transmit on frequencies below 29.50 MHz.

## **12. Amplitude Modulation and Frequency Stability**

- 12.1 An amateur station transmitting amplitude modulation is limited to 100 percent modulation.
- 12.2 The frequency stability of an amateur station in a frequency band below 148.000 MHz shall be equal to or greater than that which is obtainable using crystal control.

## **13. Measurements**

An amateur station shall be equipped with a means of:

- (a) determining the transmit frequency to the same degree of accuracy as would a crystal calibrator; and
- (b) indicating or preventing overmodulation of the transmitter in the case of a radiotelephone transmitter.

## **14. Environmental Process, Radio Frequency Fields and Land-Use Consultation**

Industry Canada recognizes the importance of considering the potential impacts of antennas and their supporting structures on their surroundings. As such, amateur radio operators are responsible for complying with Client Procedures Circular CPC-2-0-03, *Radiocommunication and Broadcasting Antenna Systems*, as may be amended from time to time.

## **15. Change of Address**

The holder of an Amateur Radio Operator Certificate shall notify the Department within thirty (30) days with respect to a change of mailing address.

**Schedule I — Frequency Bands and Bandwidths for Use by  
Amateur Stations Operating in Canada and in Region 2**

Item	Column I	Column II	Column III	Column IV
	Frequency Band	Maximum Bandwidth	Operating Provisions	Operator Qualifications
1	135.7-137.8 kHz	100 Hz	5.67A	B and 5, B/H, B&A
2	1.800-2.000 MHz	6 kHz		B and 5, B/H, B&A
3	3.500-4.000 MHz	6 kHz		B and 5, B/H, B&A
4	5.332 MHz	2.8 kHz	C21	B and 5, B/H, B&A
5	5.348 MHz	2.8 kHz	C21	B and 5, B/H, B&A
6	5.3585 MHz	2.8 kHz	C21	B and 5, B/H, B&A
7	5.373 MHz	2.8 kHz	C21	B and 5, B/H, B&A
8	5.405 MHz	2.8 kHz	C21	B and 5, B/H, B&A
9	7.000-7.300 MHz	6 kHz	5.142	B and 5, B/H, B&A
10	10.100-10.150 MHz	1 kHz	C6	B and 5, B/H, B&A
11	14.000-14.350 MHz	6 kHz		B and 5, B/H, B&A
12	18.068-18.168 MHz	6 kHz		B and 5, B/H, B&A
13	21.000-21.450 MHz	6 kHz		B and 5, B/H, B&A
14	24.890-24.990 MHz	6 kHz		B and 5, B/H, B&A
15	28.000-29.700 MHz	20 kHz		B and 5, B/H, B&A
16	50.000-54.000 MHz	30 kHz		B
17	144.000-148.000 MHz	30 kHz		B
18	219.000-220.000 MHz	100 kHz	C11	B
19	220.000-222.000 MHz	100 kHz	C11 – Exceptional circumstances only	B
20	222.000-225.000 MHz	100 kHz		B
21	430.000-450.000 MHz	12 MHz	*	B
22	902.000-928.000 MHz	12 MHz	*	B
23	1.240-1.300 GHz	Not specified	*	B
24	2.300-2.450 GHz	Not specified	*	B
25	3.300-3.500 GHz	Not specified		B
26	5.650-5.925 GHz	Not specified	*	B
27	10.000-10.500 GHz	Not specified	*	B
28	24.000-24.050 GHz	Not specified		B
29	24.050-24.250 GHz	Not specified	*	B
30	47.000-47.200 GHz	Not specified		B
31	76.000-77.500 GHz	Not specified	*	B
32	77.500-78.000 GHz	Not specified		B
33	78.000-81.000 GHz	Not specified	*	B
34	81.000-81.500 GHz	Not specified	5.561A	B
35	122.250-123.000 GHz	Not specified	*	B
36	134.000-136.000 GHz	Not specified		B
37	136.000-141.000 GHz	Not specified	*	B
38	241.000-248.000 GHz	Not specified	*	B
39	248.000-250.000 GHz	Not specified		B

**Notes:** In Column III, “\*” means that transmissions shall not cause interference nor be protected from interference from stations licensed in other services operating in that band. Operating provisions defined below are excerpts from the *Canadian Table of Frequency Allocations*, which is amended from time to time.

In Column IV, “B” means an Amateur Radio Operator Certificate with Basic Qualification, “B/H” means Basic with Honours (score of 80% or above), “5” means an Amateur Radio Operator Certificate with Morse Code (5 w.p.m.) Qualification, and “A” means an Amateur Radio Operator Certificate with an Advanced Qualification.

- C6** The use of the band 10 100-10 150 kHz by the amateur service in Canada is not in accordance with the international frequency allocations. Canadian amateur operations shall not cause interference to fixed service operations of other administrations and if such interference should occur, the amateur service may be required to cease operations. The amateur service in Canada may not claim protection from interference by the fixed service operations of other administrations.
- C11** In the band 219-220 MHz, the amateur service is permitted on a secondary basis. In the band 220-222 MHz, the amateur service may be permitted in exceptional circumstances on a secondary basis to assist in disaster relief efforts.
- 5.67A** Stations in the amateur service using frequencies in the band 135.7-137.8 kHz shall not exceed a maximum radiated power of 1 W (e.i.r.p.) and shall not cause harmful interference to stations of the radionavigation service operating in countries listed in No. **5.67**. (**WRC-07**)
- 5.142** Until 29, March 2009, the use of the band 7 100-7 300 kHz in Region 2 by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3. After 29 March 2009 the use of the band 7 200-7 300 kHz in Region 2 by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3. (**WRC-03**)
- 5.561A** The 81-81.5 GHz band is also allocated to the amateur and amateur-satellite services on a secondary basis. (**WRC-2000**)

The following operating provision is not currently in the *Canadian Table of Frequency Allocations*, but will be included in the next revision of the document.

- C21 (CAN-14)** Amateur service operators may transmit on the following five centre frequencies: 5332 kHz, 5348 kHz, 5358.5 kHz, 5373 kHz, and 5405 kHz. Amateur stations are allowed to operate with a maximum effective radiated power of 100 W PEP and are restricted to the following emission modes and designators: telephony (2K80J3E), data (2K80J2D), RTTY (60H0J2B) and CW (150HA1A). Transmissions may not occupy more than 2.8 kHz centred on these five frequencies. Such use is not in accordance with international frequency allocations. Canadian amateur operations shall not cause interference to fixed and mobile operations in Canada or in other countries and, if such interference occurs, the amateur service may be required to cease operations.

The amateur service in Canada may not claim protection from interference by the fixed and mobile operations of other countries.

**Schedule II — Frequency Bands and Bandwidths for Use by  
Amateur Stations Operating in Region 1**

	<b>Column I</b>	<b>Column II</b>	<b>Column III</b>	<b>Column IV</b>
<b>Item</b>	<b>Frequency Band</b>	<b>Maximum Bandwidth</b>	<b>Operating Provisions</b>	<b>Operator Qualifications</b>
1	135.7 - 137.8 kHz	100 Hz	5.67A	B and 5, B/H, B&A
2	1.810 - 1.850 MHz	6 kHz		B and 5, B/H, B&A
3	3.500 - 3.800 MHz	6 kHz		B and 5, B/H, B&A
4	7.000 - 7.200 MHz	6 kHz		B and 5, B/H, B&A
5	10.100 - 10.150 MHz	6 kHz	C6	B and 5, B/H, B&A
6	14.000 - 14.350 MHz	6 kHz		B and 5, B/H, B&A
7	18.068 - 18.168 MHz	6 kHz		B and 5, B/H, B&A
8	21.000 - 21.450 MHz	6 kHz		B and 5, B/H, B&A
9	24.890 - 24.990 MHz	6 kHz		B and 5, B/H, B&A
10	28.000 - 29.700 MHz	20 kHz		B and 5, B/H, B&A
11	144.000 - 146.000 MHz	30 kHz		B
12	430.000 - 440.000 MHz	Not specified		B
13	1.240 - 1.300 GHz	Not specified		B
14	2.300 - 2.450 GHz	Not specified		B
15	5.650 - 5.850 GHz	Not specified		B
16	10.000 - 10.500 GHz	Not specified		B
17	24.000 - 24.050 GHz	Not specified		B
18	24.050 - 24.250 GHz	Not specified		B
19	47.000 - 47.200 GHz	Not specified		B
20	76.000 - 77.500 GHz	Not specified		B
21	77.500 - 78.000 GHz	Not specified		B
22	78.000 - 81.000 GHz	Not specified		B
23	81.000 - 81.5000 GHz	Not specified	5.561A	B
24	122.250 - 123.000 GHz	Not specified	*	B
25	134.000 - 136.000 GHz	Not specified		B
26	136.000 - 141.000 GHz	Not specified	*	B
27	241.000 - 248.000 GHz	Not specified	*	B
28	248.000 - 250.000 GHz	Not specified		B

**Notes:** In Column III, “\*” means that transmissions shall not cause interference nor be protected from interference from stations licensed in other services operating in that band. Operating provisions defined below are excerpts from the *Canadian Table of Frequency Allocations*, which is amended from time to time.

In Column IV, “B” means an Amateur Radio Operator Certificate with Basic Qualification, “B/H” means Basic with Honours (score of 80% or above), “5” means an Amateur Radio Operator Certificate with Morse Code (5 w.p.m.) Qualification, and “A” means an Amateur Radio Operator Certificate with Advanced Qualification.

- C6** The use of the band 100-150 kHz by the amateur service in Canada is not in accordance with the international frequency allocations. Canadian amateur operations shall not cause interference to fixed service operations of other administrations and if such interference should occur, the amateur service may be required to cease operations. The amateur service in Canada may not claim protection from interference by the fixed service operations of other administrations.
- 5.67A** Stations in the amateur service using frequencies in the band 135.7-137.8 kHz shall not exceed a maximum radiated power of 1 W (e.i.r.p.) and shall not cause harmful interference to stations of the radionavigation service operating in countries listed in No. **5.67**. **(WRC-07)**
- 5.561A** The 81-81.5 GHz band is also allocated to the amateur and amateur-satellite services on a secondary basis. **(WRC-2000)**

**Schedule III — Frequency Bands and Bandwidths for  
Use by Amateur Stations Operating in Region 3**

	<b>Column I</b>	<b>Column II</b>	<b>Column III</b>	<b>Column IV</b>
<b>Item</b>	<b>Frequency Band</b>	<b>Maximum Bandwidth</b>	<b>Operating Provisions</b>	<b>Operator Qualifications</b>
1	135.7 - 137.8 kHz	100 Hz	5.67A	B and 5, B/H, B&A
2	1.800 - 2.000 MHz	6 kHz		B and 5, B/H, B&A
3	3.500 - 3.900 MHz	6 kHz		B and 5, B/H, B&A
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5	10.100 - 10.150 MHz	1 kHz	C6	B and 5, B/H, B&A
6	14.000 - 14.350 MHz	6 kHz		B and 5, B/H, B&A
7	18.068 - 18.168 MHz	6 kHz		B and 5, B/H, B&A
8	21.000 - 21.450 MHz	6 kHz		B and 5, B/H, B&A
9	24.890 - 24.990 MHz	6 kHz		B and 5, B/H, B&A
10	28.000 - 29.700 MHz	20 kHz		B and 5, B/H, B&A
11	50.000 - 54.000 MHz	30 kHz		B
12	144.000 - 148.000 MHz	30 kHz		B
13	430.000 - 440.000 MHz	Not specified	*	B
14	1.240 - 1.300 GHz	Not specified	*	B
15	2.300 - 2.450 GHz	Not specified	*	B
16	3.300 - 3.500 GHz	Not specified	*	B
17	5.650 - 5.850 GHz	Not specified	*	B
18	10.000 - 10.500 GHz	Not specified	*	B
19	24.000 - 24.050 GHz	Not specified		B
20	24.050 - 24.250 GHz	Not specified	*	B
21	47.000 - 47.200 GHz	Not specified		B
22	76.000 - 77.500 GHz	Not specified	*	B
23	77.500 - 78.000 GHz	Not specified		B
24	78.000 - 81.000 GHz	Not specified	*	B
25	81.000 - 81.5000 GHz	Not specified	5.561A	B
26	122.250 - 123.000 GHz	Not specified	*	B
27	134.000 - 136.000 GHz	Not specified		B
28	136.000 - 141.000 GHz	Not specified	*	B
29	241.000 - 248.000 GHz	Not specified	*	B
30	248.000 - 250.000 GHz	Not specified		B

**Notes:** In Column III, “\*” means that transmissions shall not cause interference nor be protected from interference from stations licensed in other services operating in that band. Operating provisions defined below are excerpts from the *Canadian Table of Frequency Allocations*, which is amended from time to time.

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- C6** The use of the band 100-150 kHz by the amateur service in Canada is not in accordance with the international frequency allocations. Canadian amateur operations shall not cause interference to fixed service operations of other administrations and if such interference should occur, the amateur service may be required to cease operations. The amateur service in Canada may not claim protection from interference by the fixed service operations of other administrations.
- 5.67A** Stations in the amateur service using frequencies in the band 135.7-137.8 kHz shall not exceed a maximum radiated power of 1 W (e.i.r.p.) and shall not cause harmful interference to stations of the radionavigation service operating in countries listed in No. **5.67**. (**WRC-07**)
- 5.561A** The 81-81.5 GHz band is also allocated to the amateur and amateur-satellite services on a secondary basis. (**WRC-2000**)

**Schedule IV — Amateur Call Sign Prefixes**

	<b>Column I</b>	<b>Column II</b>
<b>Item</b>	<b>Amateur Call Sign Prefix</b>	<b>Geographical Location</b>
1	VE1-VA1	Nova Scotia
2	VE2-VA2	Quebec
3	VE3-VA3	Ontario
4	VE4-VA4	Manitoba
5	VE5-VA5	Saskatchewan
6	VE6-VA6	Alberta
7	VE7-VA7	British Columbia
8	VE8	Northwest Territories
9	VE9	New Brunswick
10	VE0*	International Waters
11	VO1	Newfoundland
12	VO2	Labrador
13	VY1	Yukon Territory
14	VY2	Prince Edward Island
15	VY0	Nunavut Territory

- \* VE0 call signs are only intended for use when the amateur radio station is operated from vessels that make international voyages.