



Innovation, Science and  
Economic Development Canada

Innovation, Sciences et  
Développement économique Canada

CPC-2-1-11  
Issue 4  
November 2019

Spectrum Management and Telecommunications

Client Procedures Circular

# **Licensing Procedure for Licensed Wireless Microphones**

## Preface

Client Procedures Circular CPC-2-1-11, issue 4, *Licensing Procedures for Licensed Wireless Microphones* replaces CPC-2-1-11, issue 3, *Licensed Low-Power Radio Apparatus*, dated February 5, 2015.

Comments and suggestions may be directed to the following address:

Innovation, Science and Economic Development Canada  
Spectrum Management Operations Branch  
235 Queen Street  
Ottawa ON K1A 0H5  
Email: [ic.spectrumoperations-operationsdsuspectre.ic@canada.ca](mailto:ic.spectrumoperations-operationsdsuspectre.ic@canada.ca)

All spectrum-related documents are available on the [Spectrum Management and Telecommunications](#) website.

## Contents

<b>1.</b>	<b>Principle .....</b>	<b>1</b>
<b>2.</b>	<b>Mandate .....</b>	<b>1</b>
<b>3.</b>	<b>Related documents .....</b>	<b>1</b>
<b>4.</b>	<b>Definition .....</b>	<b>2</b>
<b>5.</b>	<b>Licensing policy .....</b>	<b>2</b>
<b>6.</b>	<b>Authorization and operational requirements for wireless microphones .....</b>	<b>3</b>
6.1	General .....	3
6.2	Interference .....	4
6.3	Licensing of wireless microphones .....	4
6.4	Frequencies .....	4
<b>7.</b>	<b>Public information and other non-broadcasting services in the 88-107.5 MHz FM broadcast band.....</b>	<b>5</b>
<b>8.</b>	<b>Low-power announcement service and other broadcasting services in the 88-107.5 MHz Band.....</b>	<b>6</b>
	<b>Annex A: Authorization process for the 88-107.5 MHz band .....</b>	<b>8</b>

## 1. Principle

The Minister of Innovation, Science and Economic Development, through the [\*Department of Industry Act\*](#), the [\*Radiocommunication Act\*](#) and the [\*Radiocommunication Regulations\*](#), with due regard to the objectives of the [\*Telecommunications Act\*](#), is responsible for spectrum management in Canada. As such, the Minister oversees the development of national policies and goals for spectrum resource use and ensures effective management of the radio frequency spectrum.

## 2. Mandate

Section 5 of the [\*Radiocommunication Act\*](#) (the “Act”) specifies that the Minister may issue radio licences in respect of radio apparatus. Further, section 6 of the Act states that the Governor in Council may exempt radio apparatus from the requirement to be licensed.

## 3. Related documents

BETS-1	<a href="#"><i>Technical Standards and Requirements for Low Power Announce Transmitters in the Frequency Bands 525-1,705 kHz and 88-107.5 MHz</i></a>
CRTC	<a href="#"><i>Public Notice CRTC 2000-10</i></a>
CPC-2-1-28	<a href="#"><i>Voluntary Licensing of Licence-Exempt Wireless Microphones in the TV Bands</i></a>
RIC-66	<a href="#"><i>Addresses and Telephone Numbers of District Offices</i></a>
RSS-123	<a href="#"><i>Licensed Wireless Microphones</i></a>
RSS-210	<a href="#"><i>Licence-Exempt Radio Apparatus: Category I Equipment</i></a>
SMSE-003-19	<a href="#"><i>Decision on the Technical, Policy and Licensing Framework for Wireless Microphones</i></a>

---

BETS – Broadcasting Equipment Technical Standard

CRTC - Canadian Radio-television and Telecommunications Commission

CPC – Client Procedures Circular

RIC – Radio Information Circular

RSS – Radio Standards Specification

SMSE – Spectrum Management Spectrum Engineering

#### 4. Definition

The term “wireless microphones” is used generically and is meant to include not only wireless microphones, but also cue and control communications, synchronization of video camera signals and FM transmitters.

#### 5. Licensing policy

The requirement to obtain a radio licence for a wireless microphone is dependent upon the Radio Standards Specification (RSS) under which the wireless microphone has been approved for use in Canada:

- wireless microphones certified under [RSS-210](#) are exempt from licensing requirements
- wireless microphones certified under [RSS-123](#) require radio licences granted by the Minister subject to the *Radiocommunication Act*

This document outlines the licensing process and technical requirements for wireless microphones certified under RSS-123 for the frequency bands listed in table 1. Note that licensing requirements do not apply to low-power announcement service (LPAS) devices that allow operators to communicate informative or commercial messages to the general public by means of ultra-low-power transmitters (e.g. “talking signs”). These types of LPAS are exempt from the requirement to obtain a licence (see section 8 for more information).

Table 1 lists the frequency bands for devices commonly approved under RSS-123 and the maximum bandwidth and power allowed for the operation of these devices. For wireless microphones operating in the television broadcast bands as well as 614-616 MHz and 653-663 MHz, refer to CPC-2-1-28, [Voluntary Licensing of Licence-Exempt Wireless Microphones in TV Bands](#).

Table 1 also indicates licensing eligibility as follows:

**Licensing eligibility A:** To be eligible to apply for licenses within the specified bands, holders of a licensed wireless microphone must meet the eligibility requirements in section 9 (1) of the [Radiocommunication Regulations](#).

**Licensing eligibility B:** To be eligible to apply for licenses within the specified bands, holders of a licensed wireless microphone must meet the eligibility requirements in section 9 (1) of the [Radiocommunication Regulations](#) and operate as one of the following: broadcasters and other program producers, large venue operators/owners and professional sound companies, theatre, music and sporting events/similar organizations that require high quality audio wireless microphones as part of their productions/events.

**Table 1: Frequency bands for devices approved under RSS-123\***

<b>Frequency band (MHz)</b>	<b>Maximum transmit power (W)</b>	<b>Maximum e.r.p. (W)</b>	<b>Authorized bandwidth (kHz)</b>	<b>Licensing eligibility</b>	<b>Device type(s)</b>
26.10-26.48	--	1	200	A	Wireless microphones
88-107.5 (FM broadcast band)**	--	1	200	A	Wireless microphones, LPAS and other broadcasting services devices
150-174	0.05	--	54	A	Wireless microphones
450-451 455-456	--	1	200	A	Auxiliary broadcast wireless microphones
941.5-952 953-959.85	1	--	200	B	Wireless microphones
6930-6955 7100-7125	1	--	600	B	Wireless microphones

\* In case of any discrepancies with this table, refer to the most recent issue of the RSS.

\*\* In the frequency modulation (FM) broadcast band (88-107.5 MHz), transmitters using carrier frequencies (frequencies spaced 200 kHz apart, i.e. 88.1, 88.3, 88.5 up to 107.5 MHz) may be authorized, under certain conditions, to provide public information or land mobile services (see section 7 for details). FM transmitters using carrier frequencies above 107.5 MHz will not be authorized to provide these services in order to protect the aeronautical service operating above 108 MHz.

## **6. Authorization and operational requirements for wireless microphones**

This section explains the authorization and operational requirements for wireless microphones.

### **6.1 General**

A wireless microphone system includes wireless microphones and associated monitors or receiving stations, and can operate only within a 500-metre radius.

All wireless microphones specified within this CPC must comply with the latest RSS for which they have been approved.

## 6.2 Interference

Frequencies for the operation of wireless microphones will be assigned such that interference is not caused to primary users of the band selected.

Licences for wireless microphone systems (considered secondary systems) will indicate that authorization is granted on a no-interference, no-protection basis regarding the primary radio services. It is the secondary licensee's responsibility to resolve any interference problems caused to primary users, even to the point of ceasing operation if an alternate channel cannot be found. Conversely, a licensed wireless microphone system is not entitled to interference protection from primary radio services.

## 6.3 Licensing of wireless microphones

A single base-mobile radio licence will be issued for the wireless microphone system, including all microphones under the mobile section and a single fixed base representing the associated system monitors.

**For simplex (one-way) wireless microphone systems:** The mobile section of the licence will indicate all the authorized transmit frequencies and the fixed base will indicate all of the authorized receive frequencies. Licence fees will be charged for a single frequency regardless of bandwidth and the number of authorized channels.

**For duplex wireless microphone systems:** Both the mobile and base sections of the licence will indicate all the authorized transmit and receive frequencies. Licence fees will be charged for a duplex channel regardless of bandwidth and the number of authorized channels.

Fees for voluntary wireless microphone licences are charged according to RIC-42, [Guide for Calculating Radio Licence Fees](#). For additional information, please contact your local district office via RIC-66, [Addresses and Telephone Numbers of District Offices](#).

## 6.4 Frequencies

Wireless microphones operating in the 26.10-26.48 MHz, 450-451 MHz and 455-456 MHz bands are not required to use specific carrier frequencies. However, the assigned frequencies must be sufficiently far from the band edges to ensure that the occupied bandwidth falls entirely within the band.

In addition to the above, frequencies assigned to microphones operating in the 88-107.5 MHz band must be offset from the upper or lower band limit by 25 kHz or a multiple thereof. Furthermore, the frequencies for wireless microphones operating in the FM broadcast band must be selected to ensure that there is no disruption in the reception of other broadcast signals available in the immediate area.

Table 2 lists the preferred frequencies for wireless microphones operating in the 150-174 MHz frequency band.

**Table 2: Preferred frequencies in the 150-174 MHz band**

169.445	170.245	171.045	171.845
169.505	170.305	171.105	171.905

Should none of the frequencies in table 2 be permissible, Innovation, Science and Economic Development Canada (ISED) may consider selecting one of the broadcasting auxiliary use frequencies listed in table 3, on a special case basis.

**Table 3: Frequencies allocated for broadcasting auxiliary use (MHz)**

152.870	153.050	153.230	166.250*	172.740
152.930	153.110	153.290	170.150*	172.830
152.990	153.170	153.350	172.680	172.890

\* The 166.250 MHz and 170.150 MHz frequencies are reserved exclusively for nationwide use by the Canadian Broadcasting Corporation.

## **7. Public information and other non-broadcasting services in the 88-107.5 MHz FM broadcast band**

The **public information service** is defined in the [Radiocommunication Regulations](#) as “a radiocommunication service that provides for communications in which the transmissions are intended for the public, but does not include transmissions by a broadcasting undertaking.”

Accordingly, a radio authorization can be issued for this type of service using radio apparatus certified under RSS-123 provided **all** of the following criteria are met:

- the transmitter uses FM carrier frequencies (frequencies spaced 200 kHz apart, i.e. 88.1, 88.3, 88.5 up to 107.5 MHz)
- the radio apparatus is not used for broadcasting as defined in the [Broadcasting Act](#): “any transmission of programs, whether or not encrypted, by radio waves or other means of telecommunication for reception by the public by means of broadcasting receiving apparatus, but does not include any such transmission of programs that is made solely for performance or display in a public place”. Applicants should consult the Canadian Radio-television and Telecommunications Commission (CRTC) if it is unclear whether their application meets this definition.
- the effective radiated power (e.r.p.) is limited to 1 W and the field strength at the public place boundary is limited to 100 microvolts per metre (µV/m) (boundary field strength levels can be controlled by reducing transmitter power or by changing the transmitter antenna’s gain, height or location (i.e. indoor vs. outdoor))



- the intended purpose of the radio apparatus is to provide an information service within the confines of a public place (e.g. shopping centre, museum, school, arena, drive-in theatre, parking lot)

In such cases, the following condition of licence will be added:

*The radiated emission from this station shall be confined to the public place where this station is authorized to operate by limiting the field strength produced at the public place boundary to 100 microvolts per metre ( $\mu\text{V/m}$ ). This authorization is granted on a no-interference, no-protection basis.*

In a second scenario, other non-broadcasting services could involve, for example, the use of radio equipment for the distribution of information to employees working on company property. In this case, the transmissions are not intended to be received by the general public, nor are the transmissions made within a public place. Therefore, a land mobile radio station licence can be issued. The modulation, carrier frequency, power and field strength limitations noted above must still be respected. In such cases, the following condition of licence will be added:

*The radiated emission from this station shall be confined to the private property where this station is authorized to operate by limiting the field strength produced at the property boundary to 100 microvolts per metre ( $\mu\text{V/m}$ ). This authorization is granted on a no-interference, no-protection basis.*

Radio apparatus operating with an e.r.p. of 0.01W or greater is subject to an FM/NAVCOM analysis as per section 2.6.2 of Broadcasting Procedures and Rules, BPR-3, [Application Procedures and Rules for FM Broadcasting Undertakings](#). Coordination with NAV CANADA may be required if a potential for interference to NAVCOM services is identified (frequency bands relevant to frequency selection and coordination by NAV CANADA are outlined in appendix A of the [Agreement Between Her Majesty The Queen in Right of Canada as Represented by the Minister of Industry and NAV CANADA Regarding Radio Frequency Spectrum Management](#)). The regional and/or district office involved in broadcasting certification should be consulted to confirm this requirement.

As noted earlier, apparatus certified under [RSS-210](#) and not used for broadcasting are exempt from radio licensing requirements. Such apparatus include personal audio devices equipped with short-range FM transmitters that send radio signals to nearby FM receivers.

## **8. Low-power announcement service and other broadcasting services in the 88-107.5 MHz Band**

If an installation's radio transmissions are intended for reception by the general public and/or the signal is not confined to a public place, the installation is considered a broadcasting undertaking. In that case, the installation's operator is required to obtain an ISED broadcasting certificate and a CRTC broadcasting licence. Such installations must also use radio equipment certified under appropriate Broadcasting Equipment Technical Standards (BETS). However, in accordance with ISED and CRTC policy, certain broadcasting undertakings may be exempt from these requirements. Refer to the CRTC [Broadcasting Exemption Orders](#) and ISED's [Broadcasting Certificate-exempt Radio Apparatus List](#) for

detailed information.

Low-power announcement service (LPAS) stations allow real estate agents, store owners, local authorities and others to communicate messages of an informative or commercial nature to the general public by means of ultra-low-power transmitters (e.g. “talking signs”). As a broadcasting service, an LPAS undertaking may require an ISED broadcasting certificate and a CRTC broadcasting licence. However, as noted in [Public Notice CRTC 2000-10](#), in the section “Exemption order respecting low-power radio: Ultra low power announcement service (LPAS) undertakings,” there are conditions under which an LPAS undertaking is exempt from the requirement to obtain a licence.

If the LPAS radio apparatus is certified under BETS-1, the LPAS undertaking is exempt from the requirement to obtain an ISED broadcasting certificate. If the radio apparatus is not certified under BETS-1, the operator must apply for a broadcasting certificate by following the relevant Broadcasting Procedures and Rules (i.e. [BPR-1](#) and [BPR-3](#)).

Annex A provides an overview of the authorization process for both broadcasting and non-broadcasting services in the 88-107.5 MHz band.

**Annex A: Authorization process for the 88-107.5 MHz band**