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CPC-2-1-25  
Issue 2  
June 2011

Spectrum Management and Telecommunications

Client Procedures Circular

# **Radio Station Licensing Procedure for Radiocommunication Service Providers — System Licensing**

## Preface

Client Procedures Circulars describe the various procedures or processes to be followed by the public when dealing with Industry Canada. The information contained in these circulars is subject to change without notice. It is therefore suggested that interested persons consult the nearest district office of Industry Canada for additional details. While every reasonable effort has been made to ensure accuracy, no warranty is expressed or implied. As well, these circulars have no status in law.

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## **1. Purpose**

The Minister of Industry, 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. Intent**

This document provides radiocommunication service provider licensees and potential licensees with information on system licensing and how it applies to radio licences issued to service providers and their subscribers, with particular attention to the concept of high, medium and low congestion zones. System licensing applies to both land mobile systems (two-way radiocommunication) and to paging systems (one-way radiocommunication).

## **3. Background**

Industry Canada is continually reviewing the radio regulatory and licensing fee structure with a view to improving service to the public and to reducing the costs associated with managing the radio frequency spectrum. It is also incumbent upon the Department to ensure that it maintains its ability to manage the radio frequency spectrum effectively.

After a careful review of the radiocommunication service provider regulatory and operational environment, the Department decided that the above-noted objectives could be accomplished by instituting system licensing. The application of system licensing means that, subject to certain criteria listed below, the vast majority of radiocommunication service provider subscribers will be exempted from the requirement of holding radio station licences. In most cases, only the radiocommunication service provider's repeater station or paging terminal will require a licence.

## **4. System Licensing Eligibility Criteria**

### **4.1 Zones Applicable to System Licensing for Radiocommunication Service Providers**

For the sake of brevity, only general descriptions of the zones are provided below. If more accurate information is required as to which zone any proposed or existing station is located in, refer to the maps contained in Annex A of this document, to the nearest district office of Industry Canada, or to the *Radiocommunication Regulations*, Schedules V and VI. In any event, the Department's spectrum management system will ensure that the correct zone and resultant fee calculations are reflected in the applicable radio station licence.

The metropolitan zones defined in the current fee structure for radiocommunication service provider stations have been replaced by a three-zone concept based on the level of frequency utilization. These zones are as follows:

- **High Congestion Zones**

There are six metropolitan areas of Canada designated as zones of intense frequency use. They are in and/or around the following cities:

Calgary, Edmonton, Montréal, Toronto, Vancouver and Victoria.

- **Medium Congestion Zones**

There are 21 areas of Canada designated as zones of moderate frequency usage. These zones can be either stand-alone areas or areas that are adjacent to the six intense frequency use zones listed above. These moderate zones are as follows:

Calgary, Chicoutimi, Chilliwack, Edmonton, Halifax, London, Montréal, Ottawa, the City of Québec, Regina, Saint John, Saskatoon, St. John's, Sudbury, Thunder Bay, Toronto, Trois-Rivières, Vancouver, Victoria, Windsor and Winnipeg.

- **Low Congestion Zones**

These zones comprise all other areas of Canada.

**Note:** Should a radiocommunication service provider station covered by the guidelines of Section 4.1 be located on one of the lines of latitude and longitude separating the zones, it will be considered to be located in the less congested zone for the purpose of fee calculations.

## **4.2 Radiocommunication Service Provider System Licensing Fees**

### **4.2.1 Land Mobile Systems**

Fixed land mobile service stations authorized to use frequencies in the band 30-960 MHz and that communicate with subscriber stations are covered by system licensing. Fees are payable for each transmit and receive frequency installed in each fixed land mobile station and depending on their location within one of the above-mentioned congestion zones. Radiocommunication Information Circular RIC-42, *Guide for Calculating Radio Licence Fees*, provides the information as to how to calculate radio licence fees for radiocommunication systems operating in the land mobile radio frequency bands.

### **4.2.2 Paging Systems (One-way Radiocommunication)**

Fixed stations, authorized to perform paging service on frequencies in the range 30-960 MHz, are covered by system licensing. Fees are payable for each frequency installed in each terminal radio station

and depending on the station location within one of the above-mentioned congestion zones. RIC-42 provides the information as to how to calculate radio licence fees for radiocommunication systems operating in the land mobile radio frequency bands.

### 4.3 System Licensing Criteria for Radiocommunication Service Provider Subscriber Stations

Subscriber stations communicating with land mobile service stations authorized to perform a radiocommunication service using frequencies in the range 30-960 MHz (except for maritime mobile frequencies) are covered by system licensing. Note that in areas where 30-960 MHz non-aeronautical mobile stations are permitted in aircraft, these stations are excluded from the application of system licensing.

It is a term and condition of a radiocommunication service provider's licence that a subscriber to the services (i.e. a lessee of radio apparatus that the radiocommunication service provider may install) operates or possesses radio apparatus to communicate with other radio apparatus to which that licence applies. Use of the services or radio apparatus of a radiocommunication service provider is restricted to communications with radio apparatus to which the radio licence applies.

#### 4.3.1 Land Mobile Systems

**Subscriber Mobile Stations** — a radio station licence is not required if the station is:

- (a) operating in the 30-50 MHz range with an effective radiated power (e.r.p.) of no more than **60** watts (equivalent to a maximum field strength of 5.4 V/m measured at a distance of 10 metres); or
- (b) operating in the 50-960 MHz range with an e.r.p. of no more than **30** watts (equivalent to a maximum field strength of 3.8 V/m measured at a distance of 10 metres).

**Subscriber Base Stations** (also called fixed or control stations) — a radio station licence is not required if the station is:

- (a) utilizing an **internal** antenna installation (i.e. an antenna located within a building) with an e.r.p. of no more than **30** watts (equivalent to a maximum field strength of 3.8 V/m measured at a distance of 10 metres); or
- (b) utilizing an **external** antenna installation (i.e. an antenna affixed to the exterior of a building), with a maximum height above ground level of 13.5 metres, and an e.r.p. of no more than **10** watts (equivalent to a maximum field strength of 2.2 V/m measured at a distance of 10 metres).

Antenna heights greater than 13.5 metres, to a maximum of 30 metres above ground level, require e.r.p. (field strength) reductions of an order outlined in Annex B, which provides examples of various antenna heights with the associated maximum e.r.p. permitted.

### **4.3.2 Exempted Subscriber Operating Standards**

To be eligible for system licensing, the radio equipment used by a subscriber must be issued a technical acceptance certificate (TAC) as outlined in the Radio Standards Procedure RSP-100, *Radio Equipment Certification Procedure*. This document specifies the procedural requirements and information to be submitted by an applicant wishing to obtain certification of radio equipment by the Certification and Engineering Bureau of Industry Canada.

**Note:** A subscriber operating system-licensed stations remains subject to the *Radiocommunication Regulations*.

### **4.3.3 Non-System Licensed-Subscriber Stations**

Any subscriber base or mobile station not meeting the above exemption criteria must be issued a radio licence. The licensee will be charged radio licence fees specified in the *Radiocommunication Regulations*.

Non-system-licensed subscriber base and mobile station licensees using additional frequencies will be charged for those additional frequencies as per the *Radiocommunication Regulations*, whether the radiocommunication service provider frequencies are exempted or non-exempted, system-licensed or not.

### **4.3.4 Paging Systems (One-way Radiocommunication)**

Subscriber paging receivers do not require a radio licence as is outlined in the *Radiocommunication Regulations*.

## **5. Responsibilities of the Radiocommunication Service Provider Licensees**

### **5.1 System Loading**

The Department may, from time to time, require radiocommunication service provider licensees to submit appropriate information on the degree of utilization of their assigned radio frequencies. For land mobile operations, this may include a list of subscribers along with the number of fixed and mobile stations used by each subscriber.

### **5.2 Subscriber Compliance**

Radiocommunication service provider licensees should ensure that their system-licensed subscriber stations meet the exemption parameters outlined in this document.

## **Annex A - Zones**

Maps depicting high and medium congestion zones in the following provinces are available through the following links.

1. [Alberta](#)
2. [British Columbia](#)
3. [Manitoba](#)
4. [New Brunswick](#)
5. [Newfoundland and Labrador](#)
6. [Nova Scotia](#)
7. [Ontario](#)
8. [Quebec](#)
9. [Saskatchewan](#)

**High Congestion Zones**

Column I		Column II		Column III	
		Geographical Coordinates		Geographical Coordinates	
Item	Regional Area	North Latitude	West Longitude	North Latitude	West Longitude
1.	Calgary, Alta.	51° 06'	114° 13'	51° 06'	113° 58'
2.	Edmonton, Alta.	53° 36'	113° 37'	53° 36'	113° 23'
3.	Montréal, Que.	45° 24'	74° 00'	45° 41'	73° 44'
4.	Toronto, Ont.	44° 08'	79° 40'	44° 00'	78° 45'
5.	Vancouver, B.C.	49° 23'	123° 25'	49° 23'	122° 08'
6.	Victoria, B.C.	49° 20'	124° 30'	49° 20'	124° 00'

Column IV			Column V		Column VI	
Geographical Coordinates			Geographical Coordinates		Geographical Coordinates	
Item	North Latitude	West Longitude	North Latitude	West Longitude	North Latitude	West Longitude
1.	50° 57'	113° 58'	50° 57'	114° 13'	-	-
2.	53° 28'	113° 23'	53° 28'	113° 37'	-	-
3.	45° 42'	73° 27'	45° 31'	73° 24'	45° 24'	73° 27'
4.	43° 02'	78° 45'	43° 02'	79° 30'	43° 10'	80° 00'
5.	49° 00'	122° 08'	49° 00'	123° 20'	49° 19'	123° 25'
6.	48° 50'	123° 00'	48° 18'	123° 15'	48° 18'	123° 45'

Column VII			Column VIII		Column IX		Column X	
Geographical Coordinates			Geographical Coordinates		Geographical Coordinates		Geographical Coordinates	
Item	North Latitude	West Longitude	North Latitude	West Longitude	North Latitude	West Longitude	North Latitude	West Longitude
1.	-	-	-	-	-	-	-	-
2.	-	-	-	-	-	-	-	-
3.	-	-	-	-	-	-	-	-
4.	43° 40'	80° 00'	-	-	-	-	-	-
5.	-	-	-	-	-	-	-	-
6.	48° 35'	123° 45'	-	-	-	-	-	-

**Medium Congestion Zones**

Column I		Column II		Column III	
		Geographical Coordinates		Geographical Coordinates	
Item	Regional Area	North Latitude	West Longitude	North Latitude	West Longitude
1.	Calgary, Alta.	51° 13'	114° 18'	51° 13'	113° 50'
2.	Chicoutimi, Que.	48° 23'	71° 18'	48° 28'	71° 18'
3.	Chilliwack, B.C.	49° 23'	122° 08'	49° 23'	121° 30'
4.	Edmonton, Alta.	53° 45'	113° 45'	53° 45'	113° 10'
5.	Halifax, N.S.	44° 48'	63° 46'	44° 48'	63° 25'
6.	London, Ont.	43° 08'	81° 26'	43° 08'	81° 03'
7.	Montréal, Que.	45° 36'	74° 31'	46° 03'	73° 28'
8.	Ottawa, Ont.	45° 35'	76° 00'	45° 35'	75° 25'
9.	Québec, Que.	46° 49'	71° 32'	46° 40'	71° 22'
10.	Regina, Sask.	50° 33'	104° 43'	50° 33'	104° 29'
11.	Saint John, N.B.	45° 18'	66° 12'	45° 24'	66° 00'
12.	Saskatoon, Sask.	52° 12'	106° 45'	52° 12'	106° 23'
13.	St. John's, Nfld.	47° 38'	52° 50'	47° 38'	52° 36'
14.	Sudbury, Ont.	46° 36'	81° 07'	46° 36'	80° 46'
15.	Thunder Bay, Ont.	48° 29'	89° 20'	48° 29'	89° 09'
16.	Toronto, Ont.	44° 16'	79° 20'	44° 07'	78° 30'
17.	Trois-Rivières, Que.	46° 32'	72° 42'	46° 32'	72° 35'
18.	Vancouver, B.C.	49° 50'	124° 50'	50° 00'	124° 30'
19.	Victoria, B.C.	49° 50'	125° 20'	49° 50'	124° 50'
20.	Windsor, Ont.	42° 21'	83° 07'	42° 21'	82° 45'
21.	Winnipeg, Man.	50° 02'	97° 22'	50° 02'	96° 51'

Column IV		Column V		Column VI		Column VII		
Geographical Coordinates		Geographical Coordinates		Geographical Coordinates		Geographical Coordinates		
Item	North Latitude	West Longitude	North Latitude	West Longitude	North Latitude	West Longitude	North Latitude	West Longitude
1.	50° 51'	113° 50'	50° 51'	114° 18'	-	-	-	-
2.	48° 38'	70° 48'	48° 33'	70° 48'	48° 23'	71° 00'	-	-
3.	49° 00'	121° 30'	49° 00'	122° 08'	-	-	-	-
4.	53° 19'	113° 10'	53° 19'	113° 45'T-	-	-	-	-
5.	44° 33'	63° 25'	44° 33'	63° 46'	-	-	-	-
6.	42° 54'	81° 03'	42° 54'	81° 26'	-	-	-	-
7.	46° 03'	73° 04'	45° 32'	72° 52'	45° 21'	72° 10'	45° 30'	71° 45'
8.	45° 12'	75° 25'	45° 12'	76° 00'	-	-	-	-
9.	46° 40'	71° 13'	46° 49'	71° 06'	46° 55'	71° 10'	46° 55'	71° 20'
10.	50° 22'	104° 29'	50° 22'	104° 43'	-	-	-	-
11.	45° 10'	66° 00'	45° 10'	66° 12'	-	-	-	-
12.	52° 05'	106° 23'	52° 05'	106° 45'	-	-	-	-
13.	47° 29'	52° 36'	47° 29'	52° 50'	-	-	-	-
14.	46° 25'	80° 46'	46° 25'	81° 07'	-	-	-	-
15.	48° 18'	89° 09'	48° 18'	89° 20'	-	-	-	-
16.	42° 53'	78° 30'	42° 53'	80° 00'	43° 20'	80° 45'	43° 40'	80° 45'

Item	Column IV		Column V		Column VI		Column VII	
	Geographical Coordinates		Geographical Coordinates		Geographical Coordinates		Geographical Coordinates	
	North Latitude	West Longitude	North Latitude	West Longitude	North Latitude	West Longitude	North Latitude	West Longitude
17.	46° 23'	72° 27'	46° 18'	72° 35'	-	-	-	-
18.	49° 23'	123° 10'	49° 23'	123° 25'	49° 19'	123° 25'	49° 00'	123° 20'
19.	49° 20'	124° 00'	49° 20'	124° 30'	48° 35'	123° 45'	48° 18'	123° 45'
20.	42° 05'	82° 45'	42° 05'	83° 07'	-	-	-	-
21.	49° 44'	96° 51'	49° 44'	97° 22'	-	-	-	-

Item	Column VIII		Column IX		Column X		Column XI	
	Geographical Coordinates		Geographical Coordinates		Geographical Coordinates		Geographical Coordinates	
	North Latitude	West Longitude	North Latitude	West Longitude	North Latitude	West Longitude	North Latitude	West Longitude
1.	-	-	-	-	-	-	-	-
2.	-	-	-	-	-	-	-	-
3.	-	-	-	-	-	-	-	-
4.	-	-	-	-	-	-	-	-
5.	-	-	-	-	-	-	-	-
6.	-	-	-	-	-	-	-	-
7.	45° 20'	71° 45'	45° 12'	72° 10'	45° 12'	74° 07'	-	-
8.	-	-	-	-	-	-	-	-
9.	-	-	-	-	-	-	-	-
10.	-	-	-	-	-	-	-	-
11.	-	-	-	-	-	-	-	-
12.	-	-	-	-	-	-	-	-
13.	-	-	-	-	-	-	-	-
14.	-	-	-	-	-	-	-	-
15.	-	-	-	-	-	-	-	-
16.	43° 40'	80° 22'	44° 02'	80° 00'	44° 40'	80° 00'	44° 40'	79° 20'
17.	-	-	-	-	-	-	-	-
18.	49° 20'	124° 00'	-	-	-	-	-	-
19.	49° 20'	125° 20'	-	-	-	-	-	-
20.	-	-	-	-	-	-	-	-
21.	-	-	-	-	-	-	-	-

**Annex B - Effective Antenna Height vs. Maximum e.r.p.**

Effective Antenna Height		Maximum e.r.p.	
(metres)	(feet)	(watts)	(dBw)
0-13.5	0-44.3	10.0	10.0
14.0	45.9	9.2	9.6
15.0	49.2	7.9	9.0
16.0	52.5	6.8	8.3
17.0	55.8	6.0	7.8
18.0	59.1	5.3	7.2
19.0	62.3	4.7	6.7
20.0	65.6	4.2	6.2
21.0	68.9	3.7	5.7
22.0	72.2	3.4	5.3
23.0	75.5	3.0	4.8
24.0	78.7	2.8	4.5
25.0	82.0	2.5	4.0
26.0	85.3	2.3	3.6
27.0	88.6	2.1	3.2
28.0	91.9	2.0	3.0
29.0	95.1	1.8	2.6
30.0	98.4	1.7	2.3