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Radiocommunication Information Circular

Radio Station Licensing Procedure for Radiocommunication Service Providers

System Licensing

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1.0 Purpose

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 mobile dispatch systems (two-way radiocommunications) and to paging systems (one-way radiocommunications).

2.0 Background

Industry Canada is continually reviewing the radio regulatory and licensing fee structure with a view to improve service to the public and to reduce 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 to hold radio station licences. In most cases, only Radiocommunication Service Provider's repeater station or paging terminal will require a licence.

3.0 System Licensing Eligibility Criteria

3.1 Zones Applicable to System Licensing for Radiocommunication Service Providers

The metropolitan zones defined in the current fee structure for Radiocommunication Service Provider stations have been replaced by a three-zone concept based on the level of frequency utilization.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 Zone

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, Montreal, Toronto, Vancouver, and Victoria

- Medium Congestion Zone

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 above six intense frequency use zones. These moderate zones are as follows:

Calgary, Chicoutimi, Chilliwack, Edmonton, Halifax, London, Montreal, Ottawa, Quebec City, Regina, Saint John, Saskatoon, St. John's, Sudbury, Thunder Bay, Toronto, Trois-Rivieres, Vancouver, Victoria, Windsor, and Winnipeg

- **Low Congestion Zone**

These zones comprise all other areas of Canada.

For the sake of brevity, only general descriptions have been given above. If you require more accurate information as to which zone your proposed or existing station is located in, it is suggested that you refer to either the maps contained in Appendix A of this document or to the nearest district office of Industry Canada or to the Radiocommunication Regulations, Schedules V and VI. In any event, the Department's computer-based spectrum management system will ensure that the correct zone and resultant fee calculations are reflected in the applicable radio station licence.

Note: Should a Radiocommunication Service Provider station covered by the above guidelines 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 calculating fees.

3.2 Radiocommunication Service Provider System Licensing Fees

3.2.1 Mobile Dispatch Systems (Two-way Radiocommunications)

Fixed stations authorized to perform Dispatch Service on frequencies in the 30 to 960 MHz band and used to communicate with subscriber land and mobile stations are covered by System Licensing. Fees are payable for each transmit and receive frequency installed in each repeater station and depend on their location within one of the above-mentioned congestion zones. [Radiocommunication Information Circular 42 \(RIC 42\)](#), *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.

3.2.2 Paging Systems (One-way Radiocommunications)

Fixed stations, authorized to perform a Paging Service on frequencies in the range 30 to 960 MHz, are covered by System Licensing. Fees are payable for each frequency installed in each terminal radio station and depend on the station location within one of the above-mentioned congestion zones. Radiocommunication Information Circular 42 (RIC 42) provides the information as to how to calculate radio licence fees for radiocommunication systems operating in the Land Mobile radio frequency bands.

3.3 System Licensing Criteria for Radiocommunication Service Provider Subscriber Stations

Subscriber stations communicating with land stations authorized to perform a radiocommunication service utilizing frequencies in the range 30-960 MHz (except for maritime mobile frequencies) are covered by System Licensing. It should be kept in mind that, in those areas where 30-960 MHz non-aeronautical mobile stations are permitted in aircraft, such 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 or a lessee of radio apparatus of the Radiocommunication Service Provider may install, operate or possess 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.

3.3.1 Mobile Dispatch Systems (Two-way Radiocommunications)

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

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

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

- (a) utilizing an **internal** antenna installation (an antenna located within a building) with an effective radiated power (ERP) 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 (an antenna affixed to the exterior of a building), with a maximum height above ground level of 13.5 metres, and an ERP 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 ERP (field strength) reductions of an order outlined in Appendix B which provides examples of various antenna heights with the associated maximum ERP permitted.

3.3.2 Exempted Subscriber Operating Standards

To be eligible for System Licensing, the radio equipment used by a subscriber must have been issued a Technical Acceptance Certificate (TAC) under the certification procedure set out in the edition of [Radio Standards Procedure 100 \(RSP-100\)](#), *Radio Equipment Certification Procedure* identified in the *Radiocommunication Regulations*.

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

3.3.3 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 station licensees using other frequencies as well will be charged for those other frequencies as per the *Radiocommunication Regulations*. Subscriber mobile station licensees also authorized for other frequencies will be charged the normal mobile fee whether the Radiocommunication Service Provider frequencies are exempted or non-exempted system licensed or not.

3.3.4 Paging Systems (One-way Radiocommunications)

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

4.0 Responsibilities of the Radiocommunication Service Provider Licensees

4.1 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 mobile dispatch operations, this may include a list of subscribers along with the number of fixed and mobile stations used by each subscriber.

4.2 Subscriber Compliance

Radiocommunication Service Provider licensees should ensure that their system licensed subscriber stations meet the exemption parameters outlined in this document.

Appendix A

Maps

For electronic distribution purposes, maps of the following provinces are available in separate files:

Alberta

British Columbia

Manitoba

New Brunswick

Newfoundland

Nova Scotia

Ontario

Quebec

Saskatchewan

High Congestion Zone

Column I		Column II		Column III	
		Geographical Coordinate		Geographical Coordinate	
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.	Montreal, 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 Coordinate			Geographical Coordinate		Geographical Coordinate	
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 Coordinate		Geographical Coordinate		Geographical Coordinate		Geographical Coordinate		
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 Zone

Column I		Column II		Column III	
		Geographical Coordinate		Geographical Coordinate	
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.	Montreal, Que.	45° 36'	74° 31'	46° 03'	73° 28'
8.	Ottawa, Ont.	45° 35'	76° 00'	45° 35'	75° 25'
9.	Quebec, 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-Rivieres, 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 Coordinate		Geographical Coordinate		Geographical Coordinate		Geographical Coordinate		
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'	-	-	-	-
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 Coordinate		Geographical Coordinate		Geographical Coordinate		Geographical Coordinate	
	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 Coordinate		Geographical Coordinate		Geographical Coordinate		Geographical Coordinate	
	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.	-	-	-	-	-	-	-	-

Appendix B

Effective Antenna Height		Maximum ERP	
(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