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SP 462 MHz  
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Spectrum Management and Telecommunications Policy

Spectrum Utilization Policy

# **Spectrum Utilization Policy to Permit Licence-Exempt Family Radio Devices in the Land Mobile Frequency Sub-bands 462 - 467 MHz**



**Canada**

Aussi disponible en français - PS 462 MHz

**DEPARTMENT OF INDUSTRY**

**RADIOCOMMUNICATION ACT**

*Notice No. DGTP-004-2000 — Spectrum Utilization Policy to Permit Licence-Exempt Family Radio Devices in the Land Mobile Frequency Sub-bands 462 - 467 MHz (SP-462 MHz)*

The purpose of this Notice is to announce the release of spectrum policy provisions under the above-mentioned title. These provisions establish the criteria and time frame for the use of licence-exempt family radio devices in the sub-bands 462.5625 - 462.7125 MHz and 467.5625 - 467.7125 MHz.

On March 4, 1999, in Notice DGTP-002-99, Industry Canada released a consultation paper on this subject. The consultation sought to determine the level of public interest in these licence-exempt family radio devices, the feasibility of accommodating them in spectrum allocated to the land mobile service on a primary basis and the development of appropriate spectrum provisions, if these devices were to be permitted by the Department in the subject frequency bands.

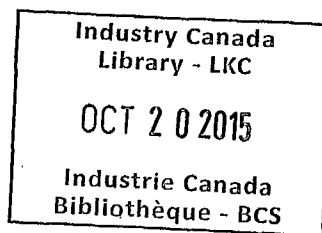
The consultation elicited a number of comments from current land mobile service users who use this band on a primary, licensed and protected from interference basis. As well a number of representations were received from manufacturers/distributors who wish to establish a market for family radio devices in Canada. Consequently, the Department has developed the above-mentioned spectrum provisions to accommodate the strong interest for family radio devices.

This above-mentioned spectrum provisions document is available electronically via the Internet at the following address:

World Wide Web (WWW)  
<http://strategis.ic.gc.ca/spectrum>

or in hard copy, for a fee, from: Tyrell Press Ltd., 2714 Fenton Road, Gloucester, Ontario, K1T 3T7, 1-800-267-4862 (Canada toll-free telephone), 1-800-574-0137 (United States toll-free telephone), (613) 822-0740 (Worldwide telephone), (613) 822-1089 (Facsimile); and Canada Communication Group Inc., 45 Sacré-Coeur Boulevard, Hull, Quebec, K1A 0S9, 1-888-562-5561 (Canada toll-free number), (819) 779-4335 (Worldwide telephone), (819) 779-2833 (Facsimile).

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## 1. Introduction

The purpose of these spectrum policy provisions is to permit the operation of licence-exempt family radio devices in the frequency sub-bands 462.5625 - 462.7125 MHz and 467.5625 - 467.7125 MHz. This spectrum utilization policy was announced in *Canada Gazette* Notice No. DGTP-004-2000.

## 2. Background

*Canada Gazette* Notice DGTP-002-99, dated March 4, 1999, invited public comments on a consultation paper that sought to determine the level of public interest for licence-exempt family radio devices in the sub-bands 462.5625 - 462.7125 MHz and 467.5625 - 467.7125 MHz. The paper also sought to determine the feasibility of accommodating licence-exempt family radio devices in spectrum designated to the land mobile service. In this regard, the Department posed a series of questions to elicit public comments. The questions ranged from consumer interest in these devices and their impact on current land mobile users through to what positive measures could be taken by manufacturers to facilitate the introduction of family radio devices in Canada. The Department required this information to determine whether or not to permit family radio devices to operate in the subject frequency bands. The concern was primarily due to the potential for these devices to cause radio interference to existing licensed land mobile users. In the consultation paper, the Department indicated that based on its preliminary engineering studies, the greatest statistical likelihood for interference was from family radio devices into the receive frequencies of the base stations used to provide land mobile services.

## 3. Public Submissions

In response to the invitation for public comments set out in the aforementioned *Canada Gazette* Notice DGTP-002-99, twenty-four timely submissions were received from a range of interested parties. The submissions were about evenly divided between those supporting and those expressing some concern of the potential for interference if family radio devices are permitted to operate in mobile frequency sub-bands.

Commentators supporting spectrum provisions to permit licence-exempt family radio devices expressed the view that a decision to allow the introduction of family radio devices would effectively meet the projected strong consumer demand and establish a viable market for these devices.

Commentators who expressed some concern over spectrum provisions to permit licence-exempt family radio devices argued that their introduction had the potential to cause radio interference to their operations; i.e. interference potential that would increase with numbers of devices sold.

Some commentators suggested various approaches for the Department to consider to reduce the impact of Family Radio Service (FRS) devices on existing users.

#### 4. Discussion

The 14 frequencies currently used by the land mobile service and being considered for as candidate frequencies for licence-exempt family radio devices at 462 - 467 MHz represent about 1 percent of the 30 MHz of mobile spectrum in the bands 420 - 430 MHz and 450 - 470 MHz. This spectrum is also subject to a redeployment plan that will require the use of more spectrum efficient narrow-band equipment in large urban areas before the year 2004.

The use of the 14 candidate frequencies by the mobile service varies widely across Canada. There is very low usage of these frequencies in Atlantic and Pacific regions of the country, more moderate use in Ontario and Quebec and higher use in Manitoba, Saskatchewan and Alberta. The prevailing potential for interference, i.e. from family radio devices into the receive frequencies of land mobile base stations, must be weighed in the context that only seven of the total 14 frequencies are used for base station reception. The Department has studied the distribution of those base stations across the country considering, among other factors, the proximity to public recreation areas, where the greatest potential concentration of family radio devices would occur. The Department has determined that less than 25 percent of base stations and licensees in these seven frequencies have a high likelihood of potential interference from family radio devices.

Against this backdrop, consumer's interest, in this low-cost communications device for family recreational purposes, is increasing. Since family radio devices have been available in the US for over two years, there are an increasing number of devices entering Canada in a growing illegal gray market. In reaction to consumer demand for these family radio devices and an emerging gray market, manufacturers and distributors are most interested in establishing a legitimate Canadian market.

The analysis by the Department referred to above, identified those base stations with the highest likelihood of potential interference from family radio devices. These findings were communicated to the Radio Advisory Board of Canada (RABC) which represents many of the radio manufacturers/distributors who wish to establish a market for family radio devices in Canada. The RABC was encouraged to develop practical steps with the owners of these base stations to mitigate the potential for interference to their systems. To this end, a number of manufacturers/distributors established the Family Radio Service Alliance (FRSA). The FRSA then contracted Electro-Federation Canada, an industry association that represents many of the members of the FRSA, to manage the process of making private arrangements with the owners of the most affected land mobile base stations to address their concerns and mitigate potential interference. The Department has received written representations from a majority of the owners of these land mobile base stations indicating that they have reached an understanding with the FRSA concerning their co-existence with

FRS devices. The Department is satisfied that these owners have been provided an opportunity to adapt to any potential for interference and that the FRSA will continue to work with them.

It should be noted that the likelihood of interference would also increase as more family radio devices are sold. It should also be noted that potential family radio device users have 14 channels to choose from and that a common feature of these devices is a monitor button that enables the user to determine whether a given channel is used or clear for use. Such features, when responsibly used, enable the user to avoid using channels in use by licensed land mobile users thereby diminishing the potential for interference.

## 5. Spectrum Provisions

The use of family radio devices is permitted in the mobile frequencies (25 kHz channel spacing) listed in Table 1 provided that the devices have received equipment certification from Industry Canada (according to Radio Standards Specification 210 (RSS-210), *Low Power Licence-Exempt Radiocommunication Devices (All Frequency Bands)*); are limited to an output power of 0.5 watt ERP; and are not capable of interconnection to the public switched telephone network (PSTN).

**Table 1 - FRS Frequencies Designated for Family Radio Devices Use**

FREQUENCY (MHz) AND FRS CHANNEL NUMBER	
462.5625 (1)	467.5625 (8)
462.5875 (2)	467.5875 (9)
462.6125 (3)	467.6125 (10)
462.6375 (4)	467.6375 (11)
462.6625 (5)	467.6625 (12)
462.6875 (6)	467.6875 (13)
462.7125 (7)	467.7125 (14)

In addition, a moratorium on any further licensing of these frequency bands to new land mobile systems is now in effect. In this regard, the Department will continue to monitor the use of the subject frequency bands in Table 1 for incidences of interference to licensed users as the potential growth of family radio devices increases. If the growth of these devices increases the potential for interference to licensed land mobile users beyond the manageable levels previously described, the Department will consider declaring all users in the band licence-exempt if such action is warranted following consultation with affected

parties. Licensed land mobile users who wish to move to another frequency band will be accommodated with mobile frequencies where possible. Local spectrum managers from the Department will inform licensees of the availability of alternate frequency bands on a case by case basis at the request of the licensee as required.

## 6. Supplementary Information

- *Canadian Table of Frequency Allocations* (Revised 1998)
- *A Spectrum Policy Framework for Canada* (September 1992)
- *Redeployment Plan for Spectrum Efficient Land Mobile Equipment in the Frequency Range 100-500 MHz* (October 1998)
- Radio Standards Specification 210 (RSS-210), *Low Power Licence-Exempt Radiocommunication Devices (All Frequency Bands)*.

## 7. Implementation

Parties interested in the implementation of these spectrum policy provisions should contact a spectrum manager in the nearest Industry Canada local office.

Issued under the authority  
of the *Radiocommunication Act*

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