
Spectrum Management

Spectrum Utilization Policy

Spectrum Utilization Policy for the Fixed, Mobile, Radiolocation and Amateur Services in the Band 896 to 960 MHz

1. Intent

The purpose of this document is to specify the spectrum utilization policy for the band 896 to 960 MHz by the fixed, mobile, radiolocation and amateur services.

2. Introduction

In January, 1982 the Canadian Table of Frequency Allocations was modified to include mobile radio services in the range 890-960 MHz. In 1986, at the culmination of a process of public consultation on the spectrum utilization policy in this band, Spectrum Utilization Policy (SP 300.89) was issued specifying the terms for the introduction of certain new radio services such as radio paging, multipoint communication systems and radiolocation in portions of the frequency band 890-960 MHz.

In October 1988, the Department initiated a comprehensive review of the spectrum in the range of 896-960 MHz. The revised Spectrum Utilization Policy SP 896 MHz, issued in February, 1990 completed this public consultation process. The revised SP 896 MHz in February 1990 designated spectrum for low power applications such as cordless telephone. Since then, the Department has received the Recommendations of the Industry Advisory Group on Cordless Telephone convened under the auspices of the Radio Advisory Board of Canada. Based on these Recommendations and the comments received from the public consultation on policy direction for public cordless telephone in Canada (Gazette Notice DGTP-014-89, November, 1989), the Department is releasing this Amendment to SP 896 MHz to confirm the provision of spectrum for cordless telephone in the 900 MHz band.

Reason: To update the introductory material.

3. Policy

3.1 Mobile Services

The mobile service in the band 896-960 MHz has been added to the International Table of Frequency Allocations on either a primary or secondary basis at various World Administrative Radio Conferences. After domestic consultation, many of these mobile allocations were added to the Canadian Table of Frequency Allocations in January 1982. The document SP 300.89 released in July 1986, specified the initial implementation of these allocations. This document gives the spectrum utilization policy for several additional sub-bands that were not previously specified.

3.1.1 Radio Paging

The band 929-932 MHz is designated for utilization by nation-wide, regional, local and in-building/in-plant radio paging services. The band 930-931 MHz is being held in reserve for advanced technology experiments, propagation studies and development of innovative paging services which may, for example, require different channel bandwidths and/or message types. The bands 929-930 MHz and 931-932 MHz are available for paging operations subject to the provisions of Radio Policy 011 and Standard Radio System Plan 504.

3.1.2 Trunked and Conventional Mobile Service

The paired frequency bands 896-901 MHz and 935-940 MHz may be used by the mobile service for both trunked and conventional mobile systems, carrying voice or data or a combination of the two. Priority will be given to use of trunked systems in these bands particularly in areas of high spectrum usage. Standard Radio System Plan 506 describing the technical requirements will be developed shortly.

3.1.2.1 Advanced Train Control Systems

Six pairs of frequencies have been identified in the paired bands 896-901 MHz and 935-940 MHz to be assigned exclusively as required along railway rights-of-way for the Advanced Train Control System (ATCS). The specific frequencies are:

Base	Mobile
935.8875 MHz	896.8875 MHz
935.9375 "	896.9375 "
935.9875 "	896.9875 "
936.8875 "	897.8875 "
936.9375 "	897.9375 "
936.9875 "	897.9875 "

ATCS employs advanced computer-based techniques designed specifically for use with large scale mobile systems, to control and monitor train movements along railway rights-of-way. The system will be used by the appropriate operating agencies in Canada and the United States of America. These frequencies may be used for non-railway applications in areas distant from railway rights-of-way, at the discretion of the Regional Director General.

3.2 Fixed Systems

3.2.1 Studio Transmitter Links (STL's)

The band 956-960 MHz will continue to be available for AM and FM mono and stereo assignments to STL's. The Regional Executive Director may request the submission of information and analysis to demonstrate why the use of a higher frequency band is unsuitable for the STL application. Note that outside of geographical areas requiring heavy use of STL's, this band can be used to establish fixed radio service requirements for voice,

data or other information. Refer to Standard Radio System Plan 300.56 for technical requirements.

3.2.2 Multipoint Communications Systems (MCS)

The paired bands 928-929 MHz and 952-953 MHz and the paired bands 932-932.5 MHz and 941-941.5 MHz may be used to establish single voice channel, or equivalent data, one or two way MCS. Standard Radio System Plan 505 detailing the technical requirements will be released in the near future.

3.2.3 Spectrum for Fixed Services

The paired bands 932.5-935 MHz and 941.5-944 MHz may be used by the fixed service for point-to-point use. The primary use is for single channel systems but multiple channel systems will also be considered for approval.

3.2.4 Fixed Systems Existing on the Effective Date of the Policy

The 1-10 GHz Policy issued in December 1982 and policy document Spectrum Utilization Policy - General (SP-GEN) define frequency diversity operation. Fixed systems using frequency diversity operation in the band 890-960 MHz became non-standard as a result of the release of that policy on January 1, 1983. Such systems were granted a protection period of five years which terminated on December 31, 1987. Since the termination of this period, non-standard frequency diversity systems are not permitted to cause interference to standard systems.

Other existing systems not meeting the requirements of the Spectrum Utilization Policy (SP 300.89) were considered non-standard effective on the release date of the previous revision of this policy, July 1986. A protection period of five years until July 1, 1991 will apply.

Non-standard systems are required to accept interference from standard systems and make the necessary modifications to avoid causing interference. However, it should be noted that SP-GEN also requires that an advance notification period be given to the licensee of a non-standard system prior to the licensing of standard system(s) described in this policy that could affect the operation of the non-standard system. It is to be noted that the notification period can be coincident with the protection period.

3.4 Radiolocation Service

The band 902-928 MHz will continue to be allocated to the radiolocation service on a primary basis in Canada. It is, however, limited to Government of Canada shipborne operations.

These radiolocation operations may take place along Canada's coastline including the coasts of Hudson Bay and James Bay and up the St. Lawrence River as far as Rimouski, Quebec.

Other radio services operating within this band and in these specified areas must accept harmful interference which may be caused by these radiolocation operations. The Department of National Defence will endeavour to arrange their radiolocation operations in consultation with the Department of Communications to minimize interference to existing fixed radio systems through frequency selection once the protection period for existing fixed systems has elapsed. Any interference received by fixed systems operating in the band 902-928 MHz after the expiry of the protection period discussed in section 3.3, will have to be accepted without protest.

3.5 Industrial, Scientific and Medical (ISM)

The band 902-928 MHz is also designated for ISM applications. Radio services operating within this band must accept harmful interference which may be caused by ISM applications.

3.6 Amateur Service

The amateur service will continue to have secondary status in the band 902-928 MHz throughout Canada. All types of emission are permitted. Amateur licensees are advised to consult with the Department to avoid operation on frequencies or sub-bands used by radio systems authorized on a primary basis in that area.

3.7 Low Power Communications Systems

Low power fixed and mobile communications systems may use the 902-928 MHz band on a licence-exempt basis provided they conform to all applicable Departmental requirements. Such systems will operate on low-power only and may not claim protection from radio interference nor cause interference to licensed primary users.

Reason: To clarify the provisions for low-power applications in this band and to enable the use of mobile terminals.

3.8 Cordless Telephone

The band 944-948 MHz is designated for digital cordless telephones as a result of Canada Gazette Notice number DGTP-014-89 inviting public comments on the choice of frequency spectrum and other matters for a public cordless telephone service providing access to the Public Switched Telephone Network. Cordless telephones using this band are to comply to the Department of Communications standards. It is to be noted that should additional spectrum be required and justified for digital cordless telephone the reserve band 948-952 MHz may be allocated.

Reason: To provide an allocation of 4 MHz of frequency spectrum for cordless telephone and to also provide an opportunity for expansion of this band should this be warranted in the future.

3.9 Future Uses and Frequency Allocations

Growth and development in advanced telecommunications systems, which relies on new and innovative radiocommunications, is often unpredictable, and unforeseen new technology and system application trends may develop. The aim of Spectrum Utilization Policies released by the Department of Communications has always been to encourage the availability of efficient radiocommunications services and spectrum resources for future radio technology to all Canadians. The following frequency bands will, therefore, be reserved for future radio services developments. Note that the various services indicated for each band are suggestive rather than restrictive.

901-902 MHz: Reserved (paired with 940-941 MHz) for potential growth and expansion of the conventional and trunked mobile services or other applications.

930-931 MHz: Reserved for advanced technology experiments, propagation studies and development of innovative paging services which may, for example, require different channel bandwidths and/or message types.

940-941 MHz: Reserved (paired with 901-902 MHz) for potential growth and expansion of the conventional and trunked mobile services or other applications.

948-952 MHz: Reserved for potential growth and expansion of digital cordless telephones.

953-956 MHz: Reserved for new services and/or expansion of existing ones.

Reason: To make a specific reservation of additional spectrum for cordless telephone.

3.10 Table of Frequency Allocations and Spectrum Utilization

The Spectrum Utilization Policy given in Table 1 comes into force on the effective date of this Policy.

Table 1

Frequency Band (MHz)	ITU Allocation*	Canadian Allocation	Spectrum Utilization
896 - 901	FIXED MOBILE (except aeronautical mobile) Radiolocation	FIXED MOBILE (except aeronautical mobile) Radiolocation C5A	Mobile (paired with 935 - 940)
901 - 902	"	"	Held in reserve
902 - 928	FIXED Amateur Mobile (except aeronautical mobile) Radiolocation	FIXED RADIOLOCATION C5A Amateur Mobile (except aeronautical mobile)	Government of Canada Shipborne Radars, Low Power Communications Systems, Amateur, ISM (by Frequency Table footnote)
928 - 929	FIXED MOBILE (except aeronautical mobile) Radiolocation	FIXED MOBILE (except aeronautical mobile) Radiolocation C5A	Multipoint Communications Systems
929 - 932	"	"	Paging (930 - 931 MHz is currently reserved for experimentation)

*** International Footnotes are not included in this Table.**

C5A: The use of the radiolocation service is limited to Government of Canada shipborne operations. These operations are not permitted on inland water systems.

Frequency Band (MHz)	ITU Allocation	Canadian Allocation	Spectrum Utilization
932 - 932.5	FIXED MOBILE (except aeronautical mobile) Radiolocation	FIXED MOBILE (except aeronautical mobile) Radiolocation C5A	Multipoint Communications Systems (paired with 941 - 941.5 MHz)
932.5 - 935	"	"	Fixed Links (paired with 941.5 - 944 MHz)
935 - 940	"	"	Mobile (paired with 896-901)
940 - 941	"	"	Held in Reserve
941 - 941.5	"	"	Multipoint Communciations Systems (paired with 932-932.5 MHz)
941.5 - 942	"	"	Fixed Links (paired with 932.5-935 MHz)
942 - 944	FIXED Mobile*	FIXED Mobile	
944 - 948	"	FIXED MOBILE*	Digital cordless telephones

* Canada is proposing to WARC '92 that the status of the mobile allocation in the band 942-960 MHz be changed from secondary to primary in the ITU Region 2 to enable fixed or mobile use according to domestic priorities.

Frequency Band (MHz)	ITU Allocation	Canadian Allocation	Spectrum Utilization
948 - 952	"	FIXED Mobile	Held in reserve for Digital Cordless Telephone
952 - 953	"	"	Multipoint Communications Systems
953 - 956	"	"	Held in reserve
956 - 960	"	"	Studio-Transmitter Links, Other Fixed Links

*** International Footnotes are not included in this Table.**

4. References

1. General Information Related to Spectrum Utilization and Radio Systems Policies (SP GEN). Effective Date: January 1991.
2. Policy for the Utilization of the 0.890 to 10.68 GHz Radio Spectrum by the Fixed Service. Effective Date: December 1982.
3. Spectrum Utilization Policy for the Fixed, Mobile, Radiolocation and Amateur Services in the Band 890 to 960 MHz (SP 300.89). Effective Date: July 1986
4. Radio Systems Policy for Radio Paging with Special Reference to the 900 MHz Band (RP-011). Effective Date: May 1989.
5. Introduction of Very Low-Power Wireless Communications in the Workplace (RP-009). Effective Date: March 1987 and Addendum, Effective Date: September 1989.
6. Provision for Field Trials of Public Cordless Telephone Service in Canada and Public Consultation for Policy Direction (Gazette Notice DGTP-014-89) November, 1989.

7. **Standard Radio System Plan 504: Technical Considerations for the Licensing of Radio Paging Systems in the band 929-932 MHz. Effective Date: May 1989.**
8. **Standard Radio System Plan 505: Technical Requirements for Multipoint Communications Systems Operating in the Bands 928-929 MHz and 952-953 MHz (To be released shortly).**
9. **Call for Expression of Interest for Public Cordless Telephone Service.**
10. **Telecommunications Regulatory Circular 80: Technical Acceptance of Low Power Devices (902-928 MHz): To be issued shortly.**

5. Implementation

It is suggested that applicants contact one of the Department's Regional Offices regarding the licensing status of systems in this band.

Issued under the authority of the
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