

RSS-130 — Mobile Broadband Services (MBS) Equipment Operating in the Frequency Bands 698-756 MHz and 777-787 MHz

Related Documents

Gazette Notice SMSE-012-13 — [Release of New Standards RSS-130 and SRSP-518](#)

SRSP-518 — [Technical Requirements for Mobile Broadband Services \(MBS\) in the Bands 698-756 MHz and 777-787 MHz](#)

SAB-001-13 — [Public Safety Operations in the Band 775-776 MHz](#)

Issue 1
October 2013

Spectrum Management and Telecommunications
Radio Standards Specification

Posted on Industry Canada website: October 4, 2013

Preface

Radio Standards Specification 130, Issue 1, *Mobile Broadband Services (MBS) Equipment Operating in the Frequency Bands 698-756 MHz and 777-787 MHz*, dated October 2013 will be in force as of the publication date of Notice SMSE-012-13 in the *Canada Gazette*, Part I. Upon publication, the public will have 120 days to submit comments. Comments received will be taken into account in the preparation of the next version of this document.

Issued under the authority of
the Minister of Industry

—

Marc Dupuis
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1. Scope

This Radio Standard Specification (RSS) sets out certification requirements for MBS radio transmitters and receivers in the frequency bands 698-756 MHz and 777-787 MHz.

2. General Information

Equipment covered by this standard is classified as Category I equipment. Either a technical acceptance certificate (TAC) issued by the [Certification and Engineering Bureau](#) of Industry Canada or a certificate issued by a recognized Certification Body (CB) is required.

2.1 Licensing Requirements

Equipment covered by this standard is subject to licensing pursuant to subsection 4(1) of the [Radiocommunication Act](#).

2.2 Related Documents

All [Spectrum Management and Telecommunications](#) publications are available under the *Official Publications* link on the following website: www.ic.gc.ca/spectrum.

The following document should be consulted:

SRSP-518

[Technical Requirements for Mobile Broadband Radio Services in the Bands 698-756 MHz and 777-787 MHz](#)

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SRSP — Standard Radio System Plan

2.3 Definitions

Mobile Equipment is equipment that is designed for use while in motion as well as during halts at unspecified points in which the radiating antenna is at least 20 cm apart from the human body.

Portable Equipment is equipment with an embedded radiating antenna having direct contact with or within 20 cm of the human body.

Fixed subscriber equipment is fixed equipment that provides connectivity between the user's equipment and base station equipment. Fixed subscriber equipment is used at a fixed point and is not operational while in motion.

3. General Requirements

3.1 RSS-Gen Compliance

RSS-130 shall be used in conjunction with RSS-Gen, [General Requirements and Information for the Certification of Radiocommunication Apparatus](#), for general specifications and information relevant to the equipment for which this standard applies.

4. Transmitter and Receiver Standard Specifications

4.1 Types of Modulation

Equipment certified under this standard shall employ digital modulation.

4.2 Frequency Block

The frequency bands 698-756 MHz and 777-787 MHz are divided into small frequency blocks as per SRSP-518. Equipment shall operate according to the frequency plan given in the SRSP.

4.3 Transmitter Frequency Stability

The transmitter frequency stability limit shall be determined as follows:

- (a) The frequency offset shall be measured according to the procedure described in RSS-Gen and recorded;
- (b) Using a resolution bandwidth of 1% of the occupied bandwidth, a reference point at the unwanted emission level which complies with the attenuation of $43 + 10 \log_{10} p$ (watts) on the emission mask of the lowest and highest channel shall be selected, and the frequency at these points shall be recorded as f_L and f_H respectively.

The applicant shall ensure frequency stability by showing that f_L minus the frequency offset and f_H plus the frequency offset shall be within the frequency range in which the equipment is designed to operate.

4.4 Transmitter Output Power and Equivalent Isotropic Radiated Power (e.i.r.p.)

The transmitter output power shall be measured in terms of average power.

For base and fixed equipment, refer to [SRSP-518](#) for power limits.

The e.i.r.p. shall not exceed 50 watts for mobile equipment or for outdoor fixed subscriber equipment, nor shall it exceed 5 watts for portable equipment or for indoor fixed subscriber equipment.

In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

4.5 Equipment with Multiple Antennas

4.5.1 Correlated Transmission

When multiple antennas are used to:

- (a) transmit the same digital data in a given symbol period (even with different coding or phase shifts) for transmission diversity; or
- (b) steer signal energy towards a particular direction for enhanced directional gain (i.e. beamforming); or
- (c) devise any other transmission mode,

and where signals from different antennas are correlated, the e.i.r.p. shall be calculated based on the aggregate power (conducted across all antennas) and resulting directional

gain dBi, $G_{\max} + 10 \log_{10} N$, where N is the number of antennas and G_{\max} is the highest gain in dBi among all antennas.

4.5.2 Uncorrelated transmission

When multiple transmitted antennas are used and each antenna:

- (a) transmits different digital data during any given symbol period (i.e. Space-Time Block Codes or Space-Time Codes); or
- (b) transmits independent parallel data stream over the same frequency bandwidth in order to increase data rates (i.e. spatial multiplexing); or
- (c) forms any other transmission mode,

and where signals from different antennas are completely uncorrelated, the e.i.r.p. shall be calculated based on the aggregate power (conducted across all antennas) and maximum antenna gain G_{\max} .

4.6 Transmitter Unwanted Emissions

4.6.1 The power of any unwanted emissions in any 100 kHz bandwidth on any frequency outside the frequency range(s) within which the equipment is designed to operate shall be attenuated below the transmitter power, P (dBW), by at least $43 + 10 \log_{10} p$ (watts), dB. However, in the 100 kHz band immediately outside the equipment's operating frequency range, a resolution bandwidth of 30 kHz may be employed.

4.6.2 In addition to the limit outlined in Section 4.6.1 above, equipment operating in the frequency bands 746-756 MHz and 777-787 MHz shall also comply with the following restrictions:

- (a) The power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least:
 - (i) $76 + 10 \log_{10} p$ (watts), dB, for base and fixed equipment, and
 - (ii) $65 + 10 \log_{10} p$ (watts), dB, for mobile and portable equipment.
- (b) The e.i.r.p. in the band 1559-1610 MHz shall not exceed -70 dBW/MHz for wideband signal and -80 dBW for discrete emission with bandwidth less than 700 Hz.

SRSP-518 — Technical Requirements for Mobile Broadband Services (MBS) in the Bands 698-756 MHz and 777-787 MHz

Related Document

Gazette Notice SMSE-012-13 — [Release of New Standards RSS-130 and SRSP-518](#)

RSS-130 — [Mobile Broadband Services \(MBS\) Equipment Operating in the Frequency Bands 698-756 MHz and 777-787 MHz](#)

SAB-001-13 — [Public Safety Operations in the Band 775-776 MHz](#)

Issue 1
October 2013

Spectrum Management and Telecommunications
Standard Radio System Plan

Posted on Industry Canada website: October 4, 2013

Preface

This Standard Radio System Plan (SRSP) outlines the technical requirements for the operation of Mobile Broadband Services (MBS) in the bands 698-756 MHz and 777-787 MHz.

Issued under the authority of
the Minister of Industry

—

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1. Intent

1.1 This Standard Radio System Plan (SRSP) sets out the minimum technical requirements for the efficient use of the bands 698-756 MHz and 777-787 MHz (known as the 700 MHz band) by Mobile Broadband Services (MBS).

1.2 This SRSP specifies the technical characteristics relating to efficient spectrum usage only, and is not to be regarded as a comprehensive specification for equipment design and/or selection.

2. General

2.1 This SRSP is based on the current or planned technologies being considered by the service providers to implement MBS in Canada. Revisions to this SRSP will be made as required.

2.2 Notwithstanding the fact that a system satisfies the requirements of this SRSP, Industry Canada may require adjustment to radio and auxiliary equipment in radio stations whenever harmful interference^{[Footnote 1](#)} is caused to other radio stations or systems.

2.3 The arrangements for non-standard systems are outlined in the document entitled Spectrum Utilization Policies SP-Gen, [General Information Related to Spectrum Utilization and Radio Systems Policies](#).

2.4 Industry Canada should be advised when potential conflict between radio systems cannot be resolved by the parties concerned. After consultation with these parties,

Industry Canada will determine what modifications need to be made and establish a schedule for these modifications in order to resolve the conflict.

2.5 Industry Canada may require licensees to use receiver selectivity characteristics that provide improved rejection of harmful interference. For example, television broadcasting transmissions in adjacent bands may result in the generation of intermodulation and other interference products within MBS receivers located in areas where television signals are strong.

2.6 MBS equipment must be certified in accordance with Radio Standards Specification RSS-130, [Mobile Broadband Services \(MBS\) Equipment Operating in the Frequency Bands 698-756 MHz and 777-787 MHz](#).

2.7 Licensees are required to make available to Industry Canada, upon request, information on certain technical parameters of their radio systems.

3. Related Documents

The current issues of the following documents are applicable and are available on the [Spectrum Management and Telecommunications](#) website at <http://www.ic.gc.ca/spectrum>.

TRAA

[Treaty Series 1962 No. 15 — Coordination and Use of Radio Frequencies: Exchange of Notes between Canada and the United States of America](#)

[Arrangement O: Sharing Arrangement Between the Department of Industry of Canada and the Federal Communications Commission of the United States of America Concerning the Use of the Frequency Bands 698-758 MHz and 776-788 MHz for the Fixed and Mobile \(Except Aeronautical Mobile\) Services Along the Canada-United States Border](#)

[Letters of Exchange for Arrangement O](#)

CTFA

[Canadian Table of Frequency Allocations 9 kHz to 275 GHz](#)

SP-Gen

[General Information Related to Spectrum Utilization and Radio Systems Policies](#)

SMSE-002-12

[Policy and Technical Framework: Mobile Broadband Services \(MBS\) — 700 MHz Band — Broadband Radio Service \(BRS\) — 2500 MHz Band](#)

DGSA-001-13

[Licensing Framework for Mobile Broadband Services \(MBS\) — 700 MHz Band](#)

SP-746

[Mobile Service Allocation Decision and Designation of Spectrum for Public Safety in the Frequency Band 746-806 MHz](#)

SP-768

[Narrowband and Wideband Public Safety Radiocommunication Systems in the Bands 768-776 MHz and 798-806 MHz](#)

RSS-Gen

[General Requirements and Information for the Certification of Radiocommunication Apparatus](#)

RSS-102

[Radio Frequency \(CRF\) Exposure Compliance of Radiocommunication Apparatus \(All Frequency Bands\)](#)

RSS-130

[Mobile Broadband Services \(MBS\) Equipment Operating in the Frequency Bands 698-756 MHz and 777-787 MHz](#)

RSP-100

[Radio Equipment Certification Procedure](#)

CPC-2-0-03

[Radiocommunication and Broadcasting Antenna Systems](#)

CPC-2-1-23

[Licensing Procedure for Spectrum Licences for Terrestrial Services](#)

SRSP-511

[Technical Requirements for Land Mobile Radio Services Operating in the Bands 768-776 MHz and 798-806 MHz](#)

SAB-001-10

[Low-power Licensed Radiocommunication Devices, Including Wireless Microphones in the Band 698-806 MHz](#)

SAB-001-12

[Low-power Licensed Radiocommunication Devices, Including Wireless Microphones in the Band 698-806 MHz](#)

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- TRAA — Terrestrial Radiocommunication Agreements and Arrangements
 - SP — Spectrum Utilization Policy
 - SMSE — Canada Gazette Notice
 - DGSA — Canada Gazette Notice
 - RSS — Radio Standards Specification
 - RSP — Radio Standards Procedure
 - CPC — Client Procedures Circular
 - SRSP — Standard Radio System Plan
 - SAB — Spectrum Advisory Bulletin
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4. Band Plan

4.1 The block structure for MBS at 700 MHz is shown in Figure 1 and [Table 1](#).

Figure 1 — 700 MHz Band Plan

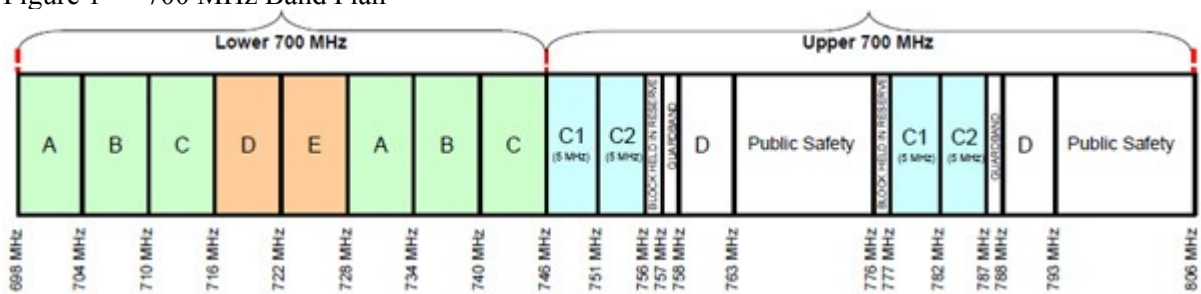


Table 1 — 700 MHz Band Frequency Blocks

Block	Total Spectrum	Lower Sub-band	Upper Sub-band
Paired Block A	12 MHz	698-704 MHz	728-734 MHz
Paired block B	12 MHz	704-710 MHz	734-740 MHz
Paired Block C	12 MHz	710-716 MHz	740-746 MHz
Unpaired block D	6 MHz	716-722 MHz	-
Unpaired block E	6 MHz	722-728 MHz	-
Paired Block C1	10 MHz	746-751 MHz	777-782 MHz
Paired Block C2	10 MHz	751-756 MHz	782-787 MHz

4.1.1 For the paired blocks A, B and C, base station transmission is in the frequency range 728-746 MHz, with the parameters specified in [Section 5.1.1](#). Transmissions from mobile, portable and fixed subscriber equipment^{Footnote 2} are in the frequency range 698-716 MHz with parameters specified in [Section 5.1.2](#).

4.1.2 For the paired blocks C1 and C2, base station transmission is in the frequency range 746-756 MHz with the parameters specified in [Section 5.1.1](#). Transmissions from mobile, portable and fixed subscriber equipment are in the frequency range 777-787 MHz with parameters specified in [Section 5.1.2](#).

4.1.3 For the unpaired blocks D and E, base station transmission is preferred in the frequency range 716-728 MHz with the parameters specified in [Section 5.1.1](#).

4.1.4 Systems using duplexing schemes different than those outlined in sections [4.1.1](#) to [4.1.3](#) may be deployed. Such systems shall not interfere with, nor claim protection from, systems deployed in accordance with sections 4.1.1 to 4.1.3. Furthermore, any possible guardband requirements for systems in the unpaired blocks using different duplexing schemes than the preferred (specified in Section 4.1.3) shall be taken from the unpaired D and E blocks.

5. Technical Criteria

5.1 Radiated Power and Antenna Height Limits

5.1.1 Fixed and base stations

5.1.1.1 For fixed and base stations transmitting in accordance with sections [4.1.1](#) to [4.1.3](#) within the frequency range 716-756 MHz with a channel bandwidth equal to or less than 1 MHz, the maximum permissible equivalent isotropically radiated power (e.i.r.p.) is 1640 watts with an antenna height above average terrain (HAAT)^{Footnote 3} up to 305 metres. The same e.i.r.p. limit also applies to fixed and base stations operating at any frequency in the 700 MHz band in accordance with [Section 4.1.4](#).

5.1.1.2 For fixed and base stations transmitting in accordance with sections [4.1.1](#) to [4.1.3](#) within the frequency range 716-756 MHz with a channel bandwidth greater than 1 MHz, the maximum permissible e.i.r.p. is 1640 watts/MHz (i.e. no more than 1640 watts e.i.r.p. in any 1 MHz band segment) with a HAAT up to 305 metres. The same e.i.r.p. limit also applies to fixed and base stations operating at any frequency in the 700 MHz band in accordance with [Section 4.1.4](#).

5.1.1.3 Fixed and base stations located in geographical areas at a distance greater than 26 km from large or medium population centres^{Footnote 4} and transmitting in accordance with sections [4.1.1](#) to [4.1.3](#) within the frequency range 716-756 MHz, may increase

their e.i.r.p. up to a maximum of 3280 watts/MHz (i.e. no more than 3280 watts e.i.r.p. in any 1 MHz band segment), with an antenna HAAT up to 305 metres.

Within 26 km of any large or medium population centre, fixed and base stations may operate at increased e.i.r.p. if more than 50% of the population within a particular sector's coverage ^{Footnote 5} is located outside these large and medium population centres.

Fixed and base stations with increased e.i.r.p. must not be used to provide coverage to large and medium population centres. However, some incidental coverage of these large and medium population centres by stations with increased e.i.r.p. is permitted.

This provision also applies for fixed and base stations with a channel bandwidth equal to or less than 1 MHz (i.e. e.i.r.p. may be increased up to a maximum of 3280 watts).

5.1.1.4 For all installations with an antenna HAAT in excess of 305 metres, a corresponding reduction in e.i.r.p. according to the following formula shall be applied:

$$\text{EIRP}_{\text{reduction}} = 20 \log_{10}(\text{HAAT}/305) \text{ dB}$$

5.1.2 Mobile and portable stations and fixed subscriber equipment

Mobile stations and outdoor fixed subscriber equipment, which transmit in the bands 698-716 MHz and 777-787 MHz, are limited to an e.i.r.p. of 50 watts. Portable stations and indoor fixed subscriber equipment in these bands are allowed to transmit with a maximum e.i.r.p. of 5 watts. These stations should employ automatic transmit power control such that stations operate on the minimum required power.

5.2 Other Criteria

5.2.1 Power measurement settings

The specified power values in [Section 5.1](#) shall be measured during any continuous transmission time with a measurement instrument calibrated in terms of root-mean-square (rms) equivalent voltage.

5.2.2 Stations with multiple antennas using multiple-input, multiple-output (MIMO) technology

If a fixed or base station is equipped with multiple antennas, the following rules regarding e.i.r.p. and antenna height shall apply.

5.2.2.1 E.i.r.p. for correlated transmission

When multiple antennas are used at a station to transmit the same digital data in a given symbol period (even with different coding or phase shifts) for transmit diversity or to steer signal energy towards a particular direction for enhanced directional gain (i.e. beamforming) or to devise any other transmission mode where signals from different antennas are correlated, the e.i.r.p. shall be calculated based on the aggregate power conducted across all antennas and resulting directional gain $10 \log_{10}(N) + G_{\text{max}}$ dBi. Here, N is the number of antennas and G_{max} is the highest gain in dBi among all antennas.

5.2.2.2 E.i.r.p. for uncorrelated transmission

When multiple antennas are used at a station in which each antenna transmits different digital data during any given symbol period (i.e. space-time block codes) or independent parallel data stream over the same frequency bandwidth in order to increase data rates (i.e. spatial multiplexing), or forms any other transmission mode where signals from different antennas are completely uncorrelated, the e.i.r.p. shall be calculated based on the aggregate power conducted across all antennas and maximum antenna gain G_{\max} .

5.2.2.3 Antenna height

The HAAT of a fixed or a base station with multiple antennas shall be calculated with reference to the highest antenna.

5.2.3 Transmitter unwanted emissions

Transmitter unwanted emissions are specified in RSS-130, [Mobile Broadband Services \(MBS\) Equipment Operating in the Frequency Bands 698-756 MHz and 777-787 MHz.](#)

6. General Guidelines for Coexistence of Systems Operating in the Same Frequency Blocks and in Adjacent Service Areas

6.1 In the event that an MBS system using the same frequency block is authorized to different licensees in adjacent geographic service areas, coordination of any transmitter installations that are close to the boundary shall be required to eliminate any harmful interference that might otherwise exist and ensure continuance of equal access to the frequency block by both licensees.

6.2 Fixed or base stations operating in accordance with sections [4.1.1](#) to [4.1.3](#) in the frequency range 716-756 MHz must not generate outside the licensed service area a power flux density (pfd) that exceeds -116 dBW/m² in any 1 MHz unless agreed otherwise by the affected licensee.

6.3 Possible interference conflicts resulting from the operation of two MBS systems in adjacent geographic service areas may occur. The resolution of those conflicts should be arrived at through mutual arrangements between the affected parties following consultation and coordination. When potential conflicts between systems cannot be resolved in a timely fashion, Industry Canada shall be so advised, whereupon, following consultations with the parties concerned, the Department will determine the necessary course of action.

6.4 System expansion measures, such as addition of cells, cell splitting and sectorization, must not force major changes in the system of the licensee in the adjacent

geographic service area, except by mutual agreement between the affected parties. Changes that would have potential impacts on the other licensee, including cell site locations, cell sectorization and cell splitting, require consultation with the other licensee.

7. General Guidelines for Coexistence of Systems Operating in Adjacent Frequency Blocks

7.1 Possible interference conflicts resulting from the operation of two MBS systems operating in adjacent blocks may occur even though the technical specifications of both this SRSP and [RSS-130](#) are being met. The resolution of those conflicts should be arrived at through mutual arrangements between the affected parties following consultation and coordination.

7.2 When potential conflicts between systems cannot be resolved, Industry Canada shall be so advised, whereupon, following consultations with the parties concerned, the Department will determine the necessary modifications and/or schedule of modifications.

8. Coexistence of Systems Operating in Adjacent Bands

8.1 Coordination may be required with licensees in adjacent bands. In this context, coordination involves consultation between licensees to ensure the coexistence between systems in adjacent bands. Licensees should consult Industry Canada for the most up-to-date list of licensees in the area.

8.2 Possible interference conflicts resulting from the operation of systems in the bands illustrated in [Section 4](#) and radio systems in adjacent bands may occur. The resolution of those conflicts should be through mutual arrangements between the affected parties following consultation and coordination.

8.3 When potential conflicts between systems cannot be resolved in a timely fashion, Industry Canada shall be so advised, whereupon, following consultations with the parties concerned, Industry Canada will determine the necessary course of action.

8.4 Television broadcasting transmissions on channel 51 (692-698 MHz) in Winnipeg, Manitoba, and London, Ontario, may produce adjacent-channel interference for MBS receivers employing Block A spectrum in areas where the TV signals are strong, particularly within the 115 dBu F(50,90) contour of the channel 51 television broadcasting station.

8.5 Any MBS fixed or base station transmitting immediately above channel 51 needs to be coordinated with TV stations operating on channel 51 in the same area.

9. International Coordination

9.1 Licensees in the frequency bands 698-756 MHz and 777-787 MHz operating stations near the Canada-United States border are required to coordinate with U.S. licensees according to [*Arrangement O: Sharing Arrangement Between the Department of Industry of Canada and the Federal Communications Commission of the United States of America Concerning the Use of the Frequency Bands 698-758 MHz and 776-788 MHz for the Fixed and Mobile \(Except Aeronautical Mobile\) Services Along the Canada-United States Border.*](#) The current coordination requirements are stated below. These requirements are subject to change from time to time in accordance with international agreements and arrangements.

9.2 Coordination of a new or modified station shall be required if:

- (a) the station is located at a distance less than 120 km from Canada-United States border; and
- (b) the ground level pfd produced by the station in the other country's territory exceeds -116 dBW/m² in any 1 MHz of the spectrum.

The coordination process is outlined in [Annex A](#).

9.3 The ground level pfd across the border shall not exceed -96 dBW/m² in any 1 MHz bandwidth unless otherwise accepted by the U.S. licensee and by Industry Canada.

9.4 If a licence is transferred, assigned or reissued, Industry Canada requires any existing agreement forming the basis for coordination to continue to apply with respect to the new licensee unless a new agreement is reached.

9.5 Canadian licensees are encouraged to enter into agreements with U.S. licensees (Agreements) to facilitate coordination which should:

- (a) allow reasonable and timely development of the respective systems of the licensees;
- (b) allow for the provision of services by licensees within their service areas on either side of the border to the maximum extent possible;
- (c) utilize all available interference mitigation techniques, including antenna directivity, polarization, frequency offset, shielding, site selection and/or power control; and
- (d) continue to apply to any subordinate licensees or transferees.

9.6 Licensees must retain all data and calculations related to coordination of stations and/or Agreements and must provide Industry Canada with such data and calculations, along with other supporting documentation, upon request.

Annex A — Coordination Procedure Near the Canada-United States Border

A.1 When coordination with U.S. licensees is required, Canadian licensees must complete the process outlined below.

A.2 The licensee seeking coordination shall determine the maximum power flux density (pfd) value at and beyond the border that could be produced by any single transmitting station. In making this determination (calculation), the licensee shall use sound engineering practices and generally accepted terrain-sensitive propagation models.

A.3 The licensee must communicate with any affected U.S. licensee and either enter into an Agreement as defined in the SRSP or provide the U.S. licensee with a Coordination Request.

A.4 A Coordination Request shall set out the following information and parameters:

- - Licensee information (corporate name/ mailing address/ telephone/ email)
- - Licensed service areas
- - Point of contact
- - Location of transmitter (community/ province/ territory)
- - Geographic coordinates of transmitting antenna
- - Effective isotropic radiated power (e.i.r.p.) (dBW)
- - Ground elevation and antenna height above ground (m)
- - Centre frequency (MHz)
- - Antenna polarization
- - Antenna pattern/ tabulation of the pattern
- - Azimuth of the maximum antenna gain
- - Bandwidth and emission designation

A.5 The Coordination Request shall be sent by registered mail (or mutually acceptable method) and shall provide notification that the recipient may respond by registered mail (or mutually acceptable method) within 30 days of its receipt to state any objection to deployment of the proposed facilities. It should be noted that the date of postmark shall be taken as the date of response. If no objection is raised by the U.S. licensee within this time period, then the coordination process may be considered complete.

A.6 If a recipient of a Coordination Request raises an objection within 30 days of receipt of that request, licensees shall collaborate to develop a mutually acceptable solution to the potential interference problem (an Agreement).

A.7 In the event that the Canadian licensee and the U.S. licensee cannot reach an Agreement within 30 days of receipt of an objection, the Canadian licensee may request that Industry Canada facilitate resolution of the case with the Federal Communications Commission (FCC) in the United States.

A.8 A station that requires coordination shall not be placed in operation until an Agreement has been reached between the relevant licensees or until Industry Canada and the FCC have agreed on sharing terms.

A.9 In cases where there is no licensee within 120 km on the U.S. side of the border, no station of the proposed system in Canada shall produce a pfd at or beyond the border that exceeds -106 dBW/m² in any 1 MHz bandwidth, unless otherwise agreed upon by both Industry Canada and the FCC.

A.10 If a licensee in Canada operating in accordance with Section A.9 above is notified by a new licensee on the U.S. side of the border of the issuance of a new licence, the operational licensee in Canada shall seek coordination with the U.S. licensee within 30 days, using the process outlined in sections [A.2](#) to [A.8](#).

A.11 In regard to Section A.10, if the licensees cannot reach a mutually acceptable solution within 90 days of receipt of the notification from the U.S. licensee, the Canadian licensee shall ensure that the transmit power of the relevant stations is reduced to meet -116 dBW/m² within any 1 MHz power flux density (pfd) limit. Subsequently, the Canadian licensee may request that Industry Canada facilitate a resolution of the case with the FCC.

Footnotes

Footnote 1

As defined in the [Radiocommunication Act](#), *harmful interference* means an adverse effect of electromagnetic energy from any emission, radiation or induction that (a) endangers the use or functioning of a safety-related radiocommunication system, or (b) significantly degrades or obstructs, or repeatedly interrupts, the use or functioning of radio apparatus or radio-sensitive equipment.

[Return to footnote 1 referrer](#)

Footnote 2

Refer to [RSS-130](#) for the definitions of mobile, portable and fixed subscriber equipment.

[Return to footnote 2 referrer](#)

Footnote 3

The height of the antenna above average terrain (HAAT) is the height of the centre of radiation of the antenna above the average elevation of the terrain between 3 and 16 km from the antenna, for an individual radial. The final HAAT (also known as the effective height of the antenna above average terrain (EHAAT)) is the average of the antenna heights above the average terrain (HAAT) for 8 radials spaced every 45 degrees of azimuth starting with true north..

[Return to footnote 3 referrer](#)

Footnote 4

Population centres are defined in Statistics Canada Census Dictionary. A large urban population centre is defined as an area with a population of 100,000 or more and a population density of 400 persons or more per square kilometre. A medium population centre is defined as an area with a population between 30,000 and 99,999, and a population density of 400 persons or more per square kilometre.

Source: Statistics Canada. 2012. [2011 Census Dictionary](#), Statistics Canada Catalogue no. 98-301-XWE, February 8. <http://www12.statcan.gc.ca/census-recensement/2011/ref/dict/geo049a-eng.cfm> (accessed October 4, 2013)

[MapInfo](#) files describing boundaries of these centres are available at: <http://spectrumgeo.ic.gc.ca/txt/download-eng.html>.

[Return to footnote 4 referrer](#)

Footnote 5

Population within the sector's coverage may be determined from the [MapInfo](#) spectrum grid cell data available at http://spectrumgeo.ic.gc.ca/txt/download-eng.html#spectrum_grid; see "Table 3: The Spectrum Grid Map Layers."

[Return to footnote 5](#)