



Spectrum Management and Telecommunications

Radio Standards Specification

# **Equipment Operating in the Public Safety Broadband Frequency Bands 758-768 MHz and 788-798 MHz**

## **Preface**

Radio Standards Specification RSS-140, issue 1, *Equipment Operating in the Public Safety Broadband Frequency Bands 758-768 MHz and 788-798 MHz*, sets out certification requirements for equipment operating in the public safety broadband frequency bands 758-768 MHz and 788-798 MHz.

Issued under the authority of  
the Minister of Innovation, Science and Economic Development

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# Contents

<b>1.</b>	<b>Scope.....</b>	<b>1</b>
1.1	Enforcement date .....	1
<b>2.</b>	<b>General requirements and information .....</b>	<b>1</b>
2.1	Certification .....	1
2.2	Licensing.....	1
2.3	RSS-Gen compliance.....	1
2.4	Related documents.....	1
2.5	Definitions .....	1
<b>3.</b>	<b>Measurement methods.....</b>	<b>2</b>
3.1	Transmitter output power .....	2
3.2	Transmitter unwanted emissions .....	2
<b>4.</b>	<b>Transmitter specifications.....</b>	<b>2</b>
4.1	Types of modulation .....	2
4.2	Transmitter frequency stability .....	2
4.3	Transmitter output power .....	2
4.4	Transmitter unwanted emission limits.....	2

## 1. Scope

This Radio Standards Specification (RSS) sets out certification requirements for equipment operating in the public safety broadband frequency bands 758-768 MHz and 788-798 MHz.

### 1.1 Enforcement date

This document will be in force as of its publication on Innovation, Science and Economic Development Canada's (ISED) website.

## 2. General requirements and information

### 2.1 Certification

Equipment covered by this standard is classified as Category I equipment. Either a technical acceptance certificate (TAC) issued by ISED's Certification and Engineering Bureau or a certificate issued by a certification body (CB) is required.

### 2.2 Licensing

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

### 2.3 RSS-Gen compliance

RSS-140 shall be used in conjunction with RSS-Gen, [General Requirements for Compliance of Radio Apparatus](#), for general specifications and information relevant to the equipment covered by this standard.

### 2.4 Related documents

All Spectrum Management and Telecommunications publications are available online under [Official Publications](#).

The following departmental document should be consulted in conjunction with this RSS:

SRSP-540, *Technical Requirements for Public Safety Broadband Systems in the Bands 758-768 MHz and 788-798 MHz*

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SRSP – Standard Radio System Plan

### 2.5 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 away from the human body.

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

### **3. Measurement methods**

#### **3.1 Transmitter output power**

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

#### **3.2 Transmitter unwanted emissions**

The equipment's emissions shall be measured with the carrier frequency set at the highest settable frequency and at the lowest settable frequency permitted by the design of the equipment.

### **4. Transmitter specifications**

#### **4.1 Types of modulation**

Equipment shall employ digital modulation techniques.

#### **4.2 Transmitter frequency stability**

The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block when tested at the temperature and supply voltage variations specified in [RSS-Gen](#).

#### **4.3 Transmitter output power**

The equivalent radiated power (e.r.p.) for control and mobile equipment shall not exceed 30 W. The e.r.p. for portable equipment including handheld devices shall not exceed 3 W.

Fixed and base station equipment shall comply with the e.r.p. limits in SRSP-540.

In addition, the peak to average power ratio (PAPR) of the equipment shall not exceed 13 dB for more than 0.1% of the time, using a signal that corresponds to the highest PAPR during periods of continuous transmission.

#### **4.4 Transmitter unwanted emission limits**

The power of any unwanted emission outside the bands 758-768 MHz and 788-798 MHz shall be attenuated below the transmitter output power P in dBW as follows, where p is the transmitter output power in watts:

- a) For any frequency between 769-775 MHz and 799-806 MHz:
  - i)  $76 + 10 \log (p)$ , dB in a 6.25 kHz band for fixed and base station equipment

- ii)  $65 + 10 \log (p)$ , dB in a 6.25 kHz band for mobile and portable/hand-held equipment
- b) For any frequency between 775-788 MHz, above 806 MHz, and below 758 MHz:  
 $43 + 10 \log (p)$ , dB in a bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency bands 758-768 MHz and 788-798 MHz, a resolution bandwidth of 30 kHz may be employed.

In addition, the equivalent isotropically radiated power (e.i.r.p.) of all emissions, including harmonics in the band 1559-1610 MHz, shall not exceed  $-70$  dBW/MHz for wideband emissions, and  $-80$  dBW/kHz for discrete emissions of less than 700 Hz bandwidth.

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