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Spectrum Management and Telecommunications

Radio Standards Specification

# Cellular Systems Operating in the Bands 824-849 MHz and 869-894 MHz

## Preface

Radio Standards Specification 132, issue 4, *Cellular Systems Operating in the Bands 824-849 MHz and 869-894 MHz*, replaces issue 3, *Cellular Telephone Systems Operating in the Bands 824 849 MHz and 869-894 MHz*, dated January 2013.

Listed below are the changes:

1. Remove the section on receiver spurious emission since it is not required as per RSS-Gen.
2. Add the definition for mobile equipment and portable equipment.
3. Change the transmitter radiated power for mobile equipment to e.r.p instead of e.i.r.p.
4. Remove section 4 on external control, mobile equipment identifier (MEID) and international mobile equipment identity (IMEI).
5. Remove the frequency stability limit in terms of part per million.
6. Add requirements for portable equipment.

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

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## 1. Scope

This Radio Standards Specification (RSS) sets out the requirements for certification of transmitters for cellular systems in the bands 824-849 MHz and 869-894 MHz.

## 2. Transition Period

This document will be in force as of its publication on Innovation, Science and Economic Development Canada's (ISED) website. However, a transition period of six (6) months following its publication will be provided, within which compliance with RSS-132, issue 3 or issue 4, will be accepted. After this period, only applications for certification of equipment that complies with the requirements in RSS-132, issue 4, will be accepted and equipment manufactured, imported, distributed, leased, offered for sale, or sold in Canada, shall comply with this issue.

A copy of RSS-132 Issue 3 will be available by email.

## 3. General Requirements and Information

Equipment certified under this standard is classified as Category I equipment and a technical acceptance certificate (TAC), issued by the Certification and Engineering Bureau of Industry Canada, or a certificate issued by a Certification Body (CB) is required.

### 3.1. Licensing requirements

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

### 3.2. RSS-Gen Compliance

RSS-132 shall be used in conjunction with [RSS-Gen, General Requirements and Information for the Certification of Radio Apparatus](#), for general specifications and information relevant to the equipment for which this standard applies.

### 3.3. 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-503 *Technical Requirements for Cellular Systems Operating in the Bands 824-849 MHz and 869-894 MHz*

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SRSP – Standard Radio System Plan

### 3.4. Definitions

**Mobile equipment** is equipment that is designed for use 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.

## 4. Transmitter Specifications

### 4.1. Frequency sub-bands

The frequency bands 824-849 MHz and 869-894 MHz are divided into sub-bands as described in SRSP-503. These sub-bands are:

- 824-835 MHz, 835-845 MHz, 845-846.5 MHz, and 846.5-849 MHz for mobile transmit; and
- 869-880 MHz, 880-890 MHz, 890-891.5 MHz, and 891.5-894 MHz for base transmit.

### 4.2. Types of modulation

Equipment certified under this standard shall use digital modulation

### 4.3. Frequency stability

The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within each of the sub-bands (see Section 4.1) when tested at the temperature and supply voltage variations specified in RSS-Gen.

### 4.4. Transmitter output power and equivalent radiated power (e.r.p.)

The transmitter output power shall be measured in terms of average power. The e.r.p. shall not exceed 7 watts for mobile equipment and 3 watts for portable equipment. Refer to SRSP-503 for base station's effective isotropic radiated power (e.i.r.p.) limits.

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 using a signal corresponding to the highest PAPR during periods of continuous transmission.

### 4.5. Transmitter unwanted emissions

Equipment shall comply with the limits in (i) and (ii) below.

- (i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power  $P$  (dBW) by at least  $43 + 10 \log_{10} p$  (watts).
- (ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power  $P$  (dBW) by at least  $43 + 10 \log_{10} p$  (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.