Spectrum Management and Telecommunications

Radio Standards Specification

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


This document will be in force as of the publication date of Notice No. SMSE-003-13 in *Canada Gazette*, Part I. Upon publication, the public has 120 days to submit comments. Comments received will be taken into account in the preparation of the next version of the document.

Listed below are the changes:

1. The stated requirement that RSS-132 be used in conjunction with RSS-Gen, *General Requirements and Information for the Certification of Radio Apparatus*, has been moved from the Preface section to Section 3.1.

2. The cordless base provision has been removed.

3. The Electronic Serial Number (ESN) feature has been removed.

4. The mobile equipment identifier (MEID) and international mobile equipment identity (IMEI) to identify mobile equipment have been added.

5. The specification that equipment’s transmit power shall be measured in terms of average power has been added. The transmitter’s peak-to-average power ratio is also specified.

6. The alternative unwanted emission limit for base station equipment with bandwidth greater than 4 MHz has been removed. Equipment shall comply with the same limit regardless of its bandwidth.

Issued under the authority of
the Minister of Industry

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1. Scope

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

2. General 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.

2.1 Licensing Requirements

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

2.2 Related Documents


The following Industry Canada document should be consulted:

SRSP-503 Technical Requirements for Cellular Radiotelephone Systems Operating in the Bands 824-849 MHz and 869-894 MHz

SRSP – Standard Radio System Plan

3. General Requirements

3.1 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.

4. General Standard Specifications

4.1 External Controls

Section 5.4 of RSS-Gen only applies to mobile station equipment, and not to base station equipment that is intended to be under the control of a service provider.
4.2 Mobile Equipment Identifier (MEID) or International Mobile Equipment Identity (IMEI)

The 56-bit MEID developed in 3GPP2 (3rd Generation Partnership Project 2) and the IMEI developed in 3GPP (3rd Generation Partnership Project) will be accepted by Industry Canada as complying with the requirements of this section.

a. Each mobile transmitter in service shall have a unique MEID or IMEI.

b. The MEID or IMEI host component shall be permanently attached to a main circuit board of the mobile transmitter and the unit’s operating software must not be alterable. The MEID or IMEI must be isolated from fraudulent contact and tampering. If the MEID or IMEI host component does not contain other information, that component must not be removable, and its electrical connections must not be accessible. If the MEID or IMEI host component contains other information, the MEID or IMEI must be encoded using one or more of the following techniques:

   (i) multiplication or division by a polynomial;
   (ii) cyclic coding;
   (iii) the spreading of MEID or IMEI bits over various non-sequential memory locations.

c. The MEID or IMEI must be factory set and not alterable, transferable, removable or otherwise able to be manipulated. Cellular mobile equipment must be designed such that any attempt to remove, tamper with, or change the MEID or IMEI chip, its logic system, or firmware originally programmed by the manufacturer will render the mobile transmitter inoperative.

5. Transmitter Standard Specifications

5.1 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.

5.2 Types of Modulation

Equipment certified under this standard shall use digital modulation.

5.3 Frequency Stability

The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations and ±1.5 ppm for base stations.

In lieu of meeting the above stability values, the test report may show that the frequency stability is sufficient to ensure that the occupied bandwidth stays within each of the sub-bands (see Section 5.1) when tested to the temperature and supply voltage variations specified in RSS-Gen.
5.4 Transmitter Output Power and Equivalent Isotropically Radiated Power

The transmitter output power shall be measured in terms of average power. The equivalent isotropically radiated power (e.i.r.p.) for mobile equipment shall not exceed 11.5 watts. Refer to SRSP-503 for base station 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.

5.5 Transmitter Unwanted Emissions

Mobile and base station 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.

5.6 Receiver Spurious Emissions

Receiver spurious emissions shall comply with the limits specified in RSS-Gen.