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RSS-123
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Spectrum Management and Telecommunications

Radio Standards Specification

Licensed Wireless Microphones

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Canada 

Preface

Radio Standards Specification RSS-123, issue 4, *Licensed Wireless Microphones* replaces RSS-123, issue 3, *Licensed Low-Power Radio Apparatus* dated February 2015.

Listed below are the changes:

1. Added frequency bands 941.5-952 MHz, 953-959.85 MHz, 6930-6955 MHz and 7100-7125 MHz and their requirements for wireless microphones.
2. Modified the emission mask for devices operating in the frequency bands 26.1-26.480 MHz, 88-107.5 MHz, 450-451 MHz and 455-456 MHz.
3. Removed receiver spurious emission limits since this requirement is included in RSS-Gen, [*General Requirements for Compliance of Radio Apparatus*](#).

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 certification requirements for wireless microphones (see section 2) operating in the frequency bands listed in table 1.

2. Purpose and application

For the purpose of this standard, the term “wireless microphones” is used generically and is meant to include wireless microphones, cue and control communications, and synchronization of video camera signals. FM transmitters may also fall within the scope of this standard, but are restricted and may only be authorized under certain conditions described in Client Procedures Circular CPC-2-1-11, [Licensed Wireless Microphones](#).

This standard does not apply to radio apparatus intended for general public broadcasting services. Such equipment is regulated by Innovation, Science and Economic Development Canada’s (ISED) broadcasting equipment procedures and standards.

3. Transition period

This document will be in force upon publication on ISED’s website. However, a transition period of six (6) months following its publication will be provided, within which compliance with RSS-123, issue 4, or RSS-123, issue 3, will be accepted. After this period, only applications for certification of equipment under RSS-123, 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-123, issue 3, may be requested by [email](#).

4. 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.

5. Licensing

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

6. RSS-Gen compliance

RSS-123 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.

7. Related documents

ISED documents are available in the [Official publications](#) section of the Spectrum Management and Telecommunications website.

The following documents shall be consulted:

- CPC-2-1-11, [Licensed Wireless Microphones](#)
- ETSI EN 300 422-1, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3 GHz frequency range; Part 1: Technical characteristics and methods of measurement*

The applicable version of the ETSI standard is listed on ISED's [Certification and Engineering Bureau](#) website.

CPC – Client Procedures Circular

8. Transmitter specifications

This section provides information on transmitter specifications.

8.1 Modulation

The apparatus may employ any type of modulation.

Equipment employing amplitude modulation (AM) shall have the modulation index not exceed 100%.

Equipment employing frequency modulation (FM) shall have the frequency deviation not exceed ± 75 kHz.

8.2 Frequency bands, transmit power/effective radiated power, authorized bandwidths and frequency stability limits

The device's transmit power or effective radiated power (e.r.p.) shall be measured in average value.

The device shall meet the transmit power/e.r.p., authorized bandwidth and frequency stability limits for its operating bands as specified in table 1.

Table 1: Frequency bands, transmit power/e.r.p., authorized bandwidths and frequency stability limits

| Frequency band (MHz) | Transmit power (W) | e.r.p. (W) | Authorized bandwidth (kHz) | Frequency stability (\pm ppm) |
|----------------------|--------------------|------------|----------------------------|----------------------------------|
| 26.10-26.48 | -- | 1 | 200 | 50 |
| 88-107.5 | -- | 1 | 200 | 50 |
| 150-174 | 0.05 | -- | 54 | 50 |
| 450-451 | -- | 1 | 200 | 50 |
| 455-456 | -- | 1 | 200 | 50 |
| 941.5-952 | 1 | -- | 200 | 20 |
| 953-959.85 | 1 | -- | 200 | 20 |
| 6930-6955 | 1 | -- | 600 | 10 |
| 7100-7125 | 1 | -- | 600 | 10 |

8.3 Transmitter unwanted emissions

The following emission limits shall apply:

- a) Devices operating in frequency bands 26.1-26.480 MHz, 88-107.5 MHz, 450-451 MHz and 455-456 MHz shall have the power of unwanted emissions at any frequency outside the authorized bandwidth attenuated below the transmitter output power, P (in dBW), at least $43 + 10 \log_{10} p$ (watts).
- b) Devices operating in frequency band 150-174 MHz shall have the power of unwanted emissions attenuated below the transmitter output power, P (in dBW), as follows:
 - i. at least 25 dB on any frequency removed from the operating frequency by more than 50% up to and including 100% of the authorized bandwidth;
 - ii. at least 35 dB on any frequency removed from the operating frequency by more than 100% up to and including 250% of the authorized bandwidth; and
 - iii. at least $55 + 10 \log_{10} p$ (watts) on any frequency removed from the operating frequency by more than 250% of the authorized bandwidth.

The power of unwanted emissions shall be measured with a resolution bandwidth of 1% of the authorized bandwidth for limit in i. and ii. and of 30 kHz for limit in iii.

- c) Devices operating in frequency bands 941.5-952 MHz, 953-959.85 MHz, 6930-6955 MHz and 7100-7125 MHz shall have the transmitter's unwanted emissions meet the requirements in sections 8.3 and 8.4 of ETSI EN 300 422-1.