Extracto textual — ISED Canadá, RSS-210 Issue 11

Fuente: https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/devices-and-equipment/radio-equipment-standards/radio-standards-specifications-rss/rss-210-licence-exempt-radio-apparatus-category-i-equipment — consultado el 29/10/2026. Texto copiado sin modificaciones.

RSS-210 — Licence-Exempt Radio Apparatus: Category I Equipment
Skip to main content
Issue 11
June 25, 2024
Notice No. SMSE-005-24 — Publication of RSS-210, Issue 11
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Annex I: Fixed point-to-point systems in the band 24.05-24.25 GHz
This annex sets out the technical requirements for fixed point-to-point systems operating in the frequency band 24.05-24.25 GHz. Fixed point-to-point operation is limited to systems employing a fixed transmitter that transmits to a fixed location. Point-to-multipoint systems, omnidirectional applications and multiple co-located transmitters transmitting the same information are prohibited.

Annex J: Devices operating in the band 57-71 GHz
This annex sets out the requirements for licence-exempt field disturbance sensors and wireless communication devices operating in the 57-71 GHz band.
J.1 Definitions
Field disturbance sensor (FDS)
was defined in section F.1 and can be either fixed or mobile. Radar devices are a subcategory of FDS devices.
Frequency-agile field disturbance sensors
are FDS devices such as frequency-modulated continuous-wave radar (FMCW radar) or swept-frequency radars.
Pulsed FDS
is a low-power device typically transmitting nanosecond-long pulses that are emitted in sweeps and instantaneously spread across the wide intended band.
Personal portable electronic device
is personal use equipment such as smartphones, tablets and laptops.
J.2 Restrictions
The devices certified under this annex are not permitted to be used on satellites. Devices used on aircraft are permitted under the following conditions:
Except as allowed in J.2(b), devices are only to be used when the aircraft is on the ground.
Devices used in-flight are subject to the following restrictions:
they shall be used within closed, exclusive on-board, communication networks within the aircraft
they shall not be used in wireless avionics intra-communication (WAIC) applications where external structural sensors or external cameras are mounted on the outside of the aircraft structure
they shall not be used on aircraft equipped with a body/fuselage that provides little or no RF attenuation except when installed on unmanned air vehicles (UAVs) and complying with J.2(d)
devices operating in the 59.3-71.0 GHz band shall not be used except if they meet all of the following conditions:
they are FDS
they are installed within personal portable electronic devices
they comply with the relevant requirements in J.3.2(a), J.3.2(b) and J.3.2(c)
Devices' user manuals shall include text indicating restrictions shown in J.2(a) and J.2(b).
FDS devices deployed on UAVs shall comply with all of the following conditions:
they operate in the 60-64 GHz band
the UAVs limit their altitude operation to the regulations established by Transport Canada (e.g. altitudes below 122 metres above ground)
they comply with J.3.2(d)
J.3 Emission limits within the band 57-71 GHz
This section specifies the emission limits inside the allocated band.
J.3.1 General
Within the band 57-71 GHz, the power of any emissions shall be measured during the transmission interval and shall comply with the limits in this section. For the purpose of this annex, the terms "average e.i.r.p." and "peak e.i.r.p." refer to e.i.r.p. with transmitter output power measured in terms of average value or peak value, respectively.
J.3.2 Emission limits for FDS
FDS devices operating in the
57-71 GHz
band shall not exceed –10 dBm peak transmitter conducted output power and 10 dBm peak e.i.r.p. The following exceptions apply:

FDS devices that occupy a bandwidth of 500 MHz or less and where this bandwidth is contained wholly within the frequency band 61.0-61.5 GHz
shall comply with the following limits: the equipment shall not exceed 40 dBm average e.i.r.p. and 43 dBm peak e.i.r.p. in the 61.0-61.5 GHz
band. In addition, the average and peak e.i.r.p. of any emission outside of the band
61.0-61.5 GHz
, but still within the band 57-71 GHz, shall not exceed 10 dBm average e.i.r.p. and 13 dBm peak e.i.r.p.
FDS devices may operate in any mode as indicated in
J.3.2(b)(i)
and
J.3.2(b)(ii)
, as long as they operate in only one of these modes for at least 33 ms before switching to another mode.
FDS devices operating in the
57.0-59.4 GHz
band shall comply with one of the following limits, depending on the operating condition of the device:
the peak e.i.r.p. shall not exceed 20 dBm for indoor usage (devices operating and situated in or designed to be used in, or carried within the interior of a building)
the peak e.i.r.p. for outdoor usage (devices operating, situated in, designed to be used in, or carried in open air) shall not exceed 30 dBm
FDS devices operating in the 57.0-61.56 GHz band shall have the peak e.i.r.p. not exceeding 3 dBm or, if the sum of continuous transmitter off-times of at least 2 ms equals at least 16.5 ms within any contiguous interval of 33 ms, the peak e.i.r.p. shall not exceed 20 dBm.
FDS operating in the 57.0-64.0 GHz band shall comply with one of the following limits, depending on the operating condition of the device:
the peak e.i.r.p. shall not exceed 14 dBm and the sum of continuous transmitter off-times of at least 2 ms shall equal at least 25.5 ms within any contiguous interval of 33 ms
for devices employed for outdoor operation (temporary or permanently fixed application) or vehicular uses (excluding in-cabin applications and operations), the peak e.i.r.p. shall not exceed 20 dBm and the sum of continuous transmitter off-times of at least 2 ms shall equal at least 16.5 ms within any contiguous interval of 33 ms
For pulsed FDS devices operating in the 57-64 GHz band that have a maximum pulse duration of 6 ns:
the average e.i.r.p. shall not exceed 13 dBm and the transmit duty cycle shall not exceed 10% during any 0.3 µs time window
the average integrated e.i.r.p. within the 61.5-64.0 GHz band shall not exceed 5 dBm in any 0.3 µs time window
peak emissions shall not exceed 20 dB above the maximum permitted average emission limit applicable to the device
the bandwidth is the frequency band bounded by the points that are 10 dB below the highest radiated emission, as based on the complete transmission system including the antenna
For FDS devices installed on UAVs, their peak e.i.r.p. shall not exceed 20 dBm and the sum of continuous transmitter off-times of at least 2 ms shall equal at least 16.5 ms within any contiguous interval of 33 ms. See also
J.2(d)
.
J.3.3 Emission limits for devices other than FDS
Following are the conditions for devices other than FDS:
Except when J.3.3(b) applies, the average e.i.r.p. of any emission shall not exceed 40 dBm and the peak e.i.r.p. of any emission shall not exceed 43 dBm.
For fixed point-to-point equipment located outdoors:
The average e.i.r.p. of any emission shall not exceed 82 dBm minus 2 dB for every dB the antenna gain is less than 51 dBi. The peak e.i.r.p. of any emission shall not exceed 85 dBm minus 2 dB for every dB the antenna gain is less than 51 dBi.
The provisions for reducing the transmit power based on the antenna gain, as per J.3.3(b)(i), shall not require that the power levels be reduced below the limits specified in J.3.3(a).
Compliance testing shall be performed using the highest gain and the lowest gain antennas with which the equipment is certified. Further, this equipment shall not be marketed and operated with antennas other than those listed in the certification application with which the equipment is certified.
Except as specified in J.3.3(d), the peak transmitter conducted output power shall not exceed 500 mW. Depending on the gain of the antenna, it may be necessary to operate the intentional radiator using a lower peak transmitter output power in order to comply with the e.i.r.p. limits specified in J.3.3(a) and J.3.3(b).
For devices with an emission bandwidth less than 100 MHz, the peak transmitter conducted output power (PTCOP) shall be less than or equal to the product of 500 mW times their emission bandwidth divided by 100 MHz. For the purpose of J.3.3(d), emission bandwidth is the instantaneous frequency range occupied by a steady radiated signal with modulation, outside which the radiated power spectral density is 6 dB below the maximum radiated power spectral density in the band, as measured with a 100 kHz resolution bandwidth. The centre frequency shall be stationary during the measurement interval, even if not stationary during normal operation (e.g. for frequency hopping devices).
J.4 Spurious emissions
Any emissions outside the band 57-71 GHz shall consist solely of spurious emissions and shall not exceed:
the fundamental emission levels
the general field strength limits specified in RSS-Gen,

General Requirements for Compliance of Radio Apparatus
, for emissions below 40 GHz
90 pW/cm
2
at a distance of 3 m for emissions between 40 GHz and 200 GHz