

Spectrum Management

Telecommunications Regulation Circular

Technical Requirements for Low Power Announcement Transmitters in the Frequency Bands 535 to 1605 kHz and 88 to 107.5 MHz

1. Purpose

This Telecommunications Regulation Circular (TRC) sets forth the minimum standards required for technically acceptable low power announcement transmitters operating in the frequency bands 535 to 1605 kHz and 88 to 107.5 MHz and providing a maximum reception range of approximately 30 metres.

2. General

- 2.1 Those seeking type acceptance certification of low power announcement transmitters shall satisfy the Department at their own expense that the equipment meets the requirements of this TRC. Certification submissions are to be prepared in accordance with Radio Standards Procedure 100 (RSP-100).
- 2.2 Notwithstanding the fact that a particular piece of equipment meets the technical requirement of this TRC, the Department reserves the right to require that adjustments be made to the equipment in the event that it causes interference within the meaning of the *Radio Act*.
- 2.3 There shall be securely fastened to each transmitting unit a nameplate or label having permanently marked thereon the manufacturer's name, the model and serial number. The unit shall also bear the certification number.
- 2.4 Any major design or component changes other than the replacement of defective components by equivalent parts will void the approval unless notified to and approved by the Department.

3. Technical Requirements

3.1 AM Transmitters in the 535 to 1605 kHz Frequency Band

- 3.1.1 The minimum technical requirements for AM transmitters are as follows (for definitions and method of test refer to Radio Standard Specification 150 (RSS-150)).
- 3.1.2 Transmitting Antenna: The antenna is to be permanently connected to the transmitter.
- 3.1.3 Power Output Rating: The maximum power output of the transmitter into its antenna, with no modulation, shall not produce a field strength level of more than 250 $\mu\text{V}/\text{m}$ measured at a distance of 30 metres.
- 3.1.4 Channel Frequency: Using an internal control or adjustments, the transmitter is to be tunable to any discrete frequency used for standard AM broadcasting.

- 3.1.5 Carrier Frequency Stability: The carrier frequency shall not vary by more than 0.02 percent when the equipment is operated at rated supply voltage and over the following temperature range:
- (i) +5° C to +45° C for equipment designed for operation indoors, or
 - (ii) -25° C to +45° C for equipment designed for operation outdoors.
- 3.1.6 Spurious Emissions: Any emission that falls outside the 30 kHz band centered on the carrier frequency shall not exceed 20 $\mu\text{V}/\text{m}$ as measured at a distance of 30 metres.
- 3.1.7 Power Line Conducted Radiation (for power line connected transmitters): The radio frequency voltage appearing on each line shall not exceed 100 microvolts on any frequency from 450 kHz to 30 MHz. Measurements shall be made from each power line to ground both with the equipment grounded and with the equipment ungrounded. Conducted measurements shall be made using a 50 ohm/50 μH line impedance stabilization network (LISN). Refer to Canadian Standards Association CSA CAN3-C108.1.5- M85 for the description of a suitable LISN.

3.2 FM Transmitters in the 88 to 107.5 MHz Frequency Bands

- 3.2.1 The minimum technical requirements for FM transmitters are as follows (for definitions and methods of tests refer to Radio Standard Specification 153 (RSS-153)).
- 3.2.2 Transmitting Antenna: The antenna is to be permanently connected to the transmitter.
- 3.2.3 Power Output Rating: The maximum power output of the transmitter into its antenna, with no modulation, shall not produce a field strength level of more than 100 $\mu\text{V}/\text{m}$ as measured at a distance of 30 metres.
- 3.2.4 Channel Frequency: Using an internal control or adjustment, the transmitter is to be tunable to any discrete frequency used for standard FM broadcasting up to and including 107.5 MHz.
- 3.2.5 Carrier Frequency Stability: The carrier frequency shall not vary by more than 0.01 percent when the equipment is operated at rated supply voltage and over the following temperature range:
- (i) +5° C to +45° C for equipment designed for operation indoors, or
 - (ii) -25° C to +45° C for equipment designed for operation outdoors.
- 3.2.6 Spurious Emissions: Any emission that falls outside the 240 kHz band centered on the carrier frequency shall not exceed 10 $\mu\text{V}/\text{m}$ as measured at a distance of 30 metres.

- 3.2.7 Power Line Conducted Radiation (for power line connected transmitters): The radio frequency voltage appearing on each power line shall not exceed 100 microvolts on any frequency from 450 kHz to 30 MHz. Measurements shall be made from each power line to ground both with the equipment grounded and with the equipment ungrounded. Conducted measurements shall be made using a 50 ohm/50 μ H line impedance stabilization network (LISN). Refer to Canadian Standards Association CSA CAN3-C108.1.5-M85 for the description of a suitable LISN.

Issued under the Authority of
the Minister of Communications

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