Industry Canada

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Spectrum Management

Broadcasting Equipment Technical Standard

Technical Standards and Requirements for Television Transmitters Operating in Small Remote Communities

Canada

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Purpose

This document contains the technical standards and requirements for the issuance of a Technical Acceptance Certificate (TAC) for very low power television transmitters operating in 54 to 88 MHz, 174 to 216 MHz and 470 to 806 MHz bands to provide a very low power TV broadcasting service to small remote communities.

A certificate issued for equipment classified as type approved or as technically acceptable before the coming into force of these technical standards and requirements is considered to be a valid and subsisting TAC.

A Technical Acceptance Certificate is not required for equipment manufactured or imported solely for re-export, prototyping, demonstration, exhibition or testing purposes.

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1. General

1.1 The standards and requirements in this document are the pre-requisite conditions for the issuance of a Technical Acceptance Certificate (TAC) for very low power television transmitters operating in 54 to 88 MHz, 174 to 216 MHz and 470 to 806 MHz bands to provide a very low power TV broadcasting service to small remote communities.

1.2 Those seeking to obtain a Technical Acceptance Certificate for very low power television transmitters shall, at their own expense, carry out the required tests and send to the Department a certification submission prepared in accordance with *Broadcasting Equipment Standards Procedure 100 (BESP-100).*

1.3 The certification submission shall include an affidavit, signed by a professional engineer licensed by a provincial association, stating that the equipment meets the technical standards in this document.

1.4 Test results do not have to be submitted to the Department. However, the results shall be kept on file by the applicant and shall be made available to the Department upon request.

1.5 Notwithstanding the fact that a radio apparatus meets all applicable requirements, the Department reserves the right to require that adjustments be made to the equipment should it cause interference.

1.6 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.

1.7 This document replaces *TRC-53, Issue 2.*

2. Testing and Labelling

2.1 Very low power television transmitters operating in 54 to 88 MHz, 174 to 216 MHz and 470 to 806 MHz bands should be tested according to the methods outlined in *Broadcasting Equipment Technical Standard 4 (BETS-4).*

2.2 The transmitting equipment shall be capable of meeting the standards in this document on each standard TV channel at the rated power output for which it is designed to operate.

2.3 In the event that the equipment fails to function during testing, all tests affected by the failure shall be repeated after the fault has been corrected.

2.4 Each certified broadcasting equipment must display in a conspicuous location:

(a) the manufacturer's name, trade or brand name (if different from the manufacturer's name);

(b) the model identification;

(c) the serial number;

(d) the Technical Acceptance Certificate number;

(e) the name of the certification assignee.

2.5 The identification label must be indelible, tamper-resistant and affixed permanently or stamped in such a manner as not to be removable except by destruction or defacing.

3. Technical Standards and Requirements

3.1 Visual

Visual Power Output Rating	VHF: Up to 2 watts maximum (peak envelope power) UHF: Up to 10 watts maximum (peak envelope power)
Channel Frequency	To conform to standard allotted channels in the TV broadcasting bands
Carrier Frequency Stability	Plus or minus 5 kHz between 15 and 25°C at rated line power input voltage
Spurious Emission	All spurious emissions (including intermodulation products) shall be attenuated at least 40 dB below the rated power output, except those intermodulation products at -4.5 MHz and ±9.0 MHz with respect to visual carrier which shall be at least 30 dB below the rated power output
Group Delay	The group delay shall be within ±120 microseconds of the standard group delay of *BETS-4*.

3.2 Aural

Aural Carrier Output Power	2 to 20 percent of visual power output rating
Aural Frequency Carrier and Stability	4.5 MHz plus or minus 1,500 Hz with respect to video carrier between 15 and 25°C at rated line power input voltage

Frequency Response	±3 dB from 100 Hz to 10 kHz using standard 75 microseconds pre-emphasis.