Industry Canada Industrie Canada

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Spectrum Management and Telecommunications

Radio Standards Procedure

Radio Equipment Certification Procedure

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Canada

Preface

Radio Standards Procedure 100, Issue 9 supersedes Issue 8, Revision 1, dated May 2002, and will be in force as of the date of publication. This document was modified to address methods, instrumentation, and facilities for the measurement of RF signals and noise emitted from electrical and electronic devices.

This document will be reviewed and amended from time to time to reflect necessary changes in procedural requirements. The Department encourages comments and welcomes suggestions that will enhance the effectiveness of the document.

Issued under the authority
of the Minister of Industry

_____

R.W. McCaughern
Director General
Spectrum Engineering Branch

Contents

1. Purpose

This document specifies the procedural requirements to be followed and the information to be submitted by an applicant wishing to obtain certification of radio equipment to the Department's standards and specifications by the Certification and Engineering Bureau (the Bureau) of Industry Canada or a recognized Certification Body (CB).

Certificate refers to a document indicating compliance with applicable standards or specifications for the purposes of section 21(1)*(b)* and *(c)* of the *Radiocommunication Regulations.*

For the purpose of this document:

- a certificate can be either a certificate issued by a recognized CB or a Technical Acceptance Certificate (TAC) issued by Industry Canada's Certification and Engineering Bureau; and

- ***radio equipment*** means radio apparatus, including broadcasting equipment.

Radio equipment for which certification is required is referred to as Category I equipment.

Certified radio equipment may require a licence to operate. However, the certification of such equipment does not imply that a licence will be granted.

The Department may require corrective action should the radio equipment (even if certified and licensed) cause interference.

2. General Information

2.1 Related Documents

Industry Canada's publications are available on the Spectrum Management and Telecommunications website at: http://strategis.gc.ca/spectrum, in *Official Publications*.

RSS	Radio Standards Specifications
BETS	Broadcasting Equipment Technical Standards
DC-01	*Procedure for Declaration of Conformity and Registration of Terminal Equipment*
TRC-43	*Notes Regarding Designation of Emission (Including Necessary Bandwidth and Classification), Class of Station and Nature of Service*

TRC-49 *Certification Service Fees*
Information on the Application of the Telecommunications Apparatus Technical Assessment and Testing Fees Order Made under the Financial Administration Act

RIC-66 *Addresses and Telephone Numbers of Regional and District Offices*

DC - Declaration of Conformity
RIC - Radio Information Circular
TRC - Telecommunication Regulation Circular

2.2 Public Inquiries

Inquiries concerning the certification process or this document should be directed to:

Manager, Certification and Market Surveillance
Certification and Engineering Bureau
Industry Canada
P.O. Box 11490, Station H
3701 Carling Avenue (Building 94)
Ottawa, Ontario
K2H 8S2
Telephone: 613-990-4218
Fax: 613-990-5009
E-mail: certification.bureau@ic.gc.ca

Inquiries concerning Radio Equipment Standards should be directed to:

Manager, Radio Equipment Standards
Spectrum Engineering Branch
Industry Canada
365 Laurier Avenue
Ottawa, Ontario
K1A 0C8
Telephone: 613-990-4699
Fax: 613-991-3961
E-mail: res.nmr@ic.gc.ca

Inquiries concerning terminal equipment should be directed to:

TAPAC Secretariat
Directorate of Telecommunications Engineering and Certification
Industry Canada
300 Slater Street, 13th Floor
Ottawa, Ontario
K1A 0C8
Telephone: 613-990-4526
Fax: 613-957-8845
E-mail: tapac-ccprt@ic.gc.ca

Inquiries concerning Transport Canada approval of emergency locator transmitters (ELTs) should be directed to:

Chief, Project Management
Transport Canada – National Aircraft Certification (AARDE)
330 Sparks Street, 3rd Floor, Tower C, Place de Ville
Ottawa, Ontario
K1A 0N8
Telephone: 613-952-4339
Fax: 613-996-9178
E-mail: turnbud@tc.gc.ca

Inquiries concerning Transport Canada approval of emergency position indicating radio beacons (EPIRBs) should be directed to:

Director, Operations & Environmental Programs (AMSE)
Transport Canada - Marine Safety
330 Sparks Street, Tower C, 10th Floor, Place de Ville
Ottawa, Ontario
K1A 0N8
Telephone: 613-991-3131
Fax: 613-993-8196
E-mail: marinesafety@tc.gc.ca

Inquiries concerning National Search and Rescue Secretariat (NSS) approval of personal locator beacons (PLBs) should be directed to:

National Search and Rescue Secretariat (NSS)
275 Slater Street, 4th Floor
Ottawa, Ontario
K1A 0K2
Telephone: 1-800-727-9414
Fax: 613-996-3746
E-mail: inquiry@nss-snrs.gc.ca

3. Certification Requirements

3.1 General

Certification is based on the review of a technical brief that demonstrates that a unit, which is representative of the final production model, complies with the applicable standard(s).

3.2 Radio Equipment

Radio equipment subject to an RSS or BETS found in the Category I Equipment Standards List requires certification.

Such equipment which is intended to be connected to a public telecommunications network is also subject to a Declaration of Conformity and registration to the Terminal Attachment Program as described in Industry Canada's DC-01.

Any radio equipment imported only for demonstration or trial purposes does not have to be certified. However, this equipment may require a developmental radio licence. More information can be obtained from the Industry Canada office nearest to the demonstration or trial site.

3.3 Approval by Other Agencies

Certain radio equipment may require the approval of other regulatory agencies ***before*** a certification application can be submitted. In such cases, the other approval(s) must be included with the application.

Disclaimer: certification does not necessarily imply acceptance or approval by another agency and the approval of another agency does not imply certification.

3.3.1 Approval by Transport Canada Aircraft Certification Branch (AARD)

Emergency locator transmitters (ELT's) must initially be approved by AARD before certification can be granted. Once certified, the ELT will be listed on Industry Canada's Radio Equipment List (REL). Only ELT's that have successfully completed this two-part approval process and are listed in the REL will be eligible for installation in Canadian registered aircraft. Other radio equipment intended for installation on aircraft which does not require prior approval by AARD to qualify for certification will be processed for certification directly. In such cases, Transport Canada will be notified of new certifications through the daily update to the REL.

3.3.2 Approval by Transport Canada Marine Safety (AMSE)

Emergency position indicating radio beacons (EPIRBs) used in the maritime service and Global Maritime Distress and Safety System (GMDSS) equipment must initially be approved by AMSE before certification can be granted.

3.3.3 Approval by National Search and Rescue Secretariat (NSS)

Personal locator beacon (PLB) equipment must initially be approved by NSS before certification can be granted.

3.4 Required Representative

The applicant must provide, in writing, the identity of a representative in Canada who is capable of responding to enquiries and who can provide post-certification audit samples at no charge to Industry Canada.

4. Labelling of Certified Radio Equipment

Certified radio equipment shall be labelled in accordance with the Category I equipment labelling requirements of RSS-Gen.

5. Types of Certification Services

The following sections have been prepared to assist the applicant when filing for equipment certification services.

5.1 Single New Certification

Single certification may be granted to radio equipment provided that the equipment model is assigned a unique model number by the manufacturer and certification has never been granted for that model.

The following information must be submitted:

(a) a completed and signed original copy of Appendix A – Application and Agreement for Certification Services;

(b) a covering letter explaining the type of certification services requested and a brief description of the radio equipment;

(c) a completed and signed original copy of Appendix B – Test Report Cover Sheet;

(d) a detailed test report meeting the technical requirements of the applicable Radio Standards Specification (RSS);

(e) a completed and signed copy of Appendix (A and B) or C of RSS-102 - *Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)*;

(f) photographs and product literature of the new model;

(g) schematic diagrams and block diagrams; and

(h) a drawing, sample or illustration of the product label.

5.2 Family Certification

Family certification (multiple models) may be granted to many models of radio equipment that are electrically identical, provided that each model is assigned a unique model number by the manufacturer.

Equipment is considered electrically identical if no changes are made to equipment that has been certified or if the changes made to the equipment qualify as Class 1 permissive changes (see Section 6.2).

5.2.1 New Family Certification - If family certification is requested and none of the models in the family have ever been certified, the following information shall be provided:

(a) the information required for a new certification; and
(b) a list of all the models to be included in the family.

5.2.2 Family to a previously certified model - If family certification is requested and at least one model in the family has been certified, the following information shall be submitted:

(a) the model number, the previous certification number of the approved equipment with a detailed description of the differences between the new device and the previously certified device, with particular emphasis on the following:

(i) the radio frequency and RF output power;
(ii) the radio frequency circuitry;
(iii) functional capabilities; and
(iv) a test report.

(b) a completed and signed original copy of Appendix A. If more than one model is to be approved, the additional models may be shown on an attached list;

(c) a completed and signed original copy of Appendix B attached to the test report;

(d) a completed and signed copy of Appendix (A and B) or C of RSS-102;

(e) photographs and product literature if the new model's(s') internal or external appearance differ(s) from the previously certified models;

(f) a drawing, sample or illustration of the product label, if this is not shown in (e); and

(g) a brief statement as to why the new product should qualify for family approval. This statement must be augmented with schematic diagrams and block diagrams. If modifications have been made to the circuitry, a test report verifying affected parameters may be required.

5.3 Multiple Listing

Multiple listing of a certified model is required when a manufacturer or distributor wishes to list under its name and unique model number, certified equipment of an original equipment manufacturer (OEM).

A model of equipment may be multiple-listed to other manufacturers or distributors based upon the approval granted to the original applicant and certificate holder.

In order to obtain a multiple-listing certification, the following documentation must be submitted to the Bureau:

(a) the model number and certification number of the approved equipment;

(b) a signed letter from the original applicant and certificate holder authorizing the Department to use information on file to grant a multiple-listing certification. The name/model number and certification number of the radio equipment must be shown. The letter must also declare that the model to be multiple-listed is identical in design and construction to the originally approved model;

(c) a letter, from the applicant, requesting the certification;

(d) completed and signed original copies of Appendix A and Appendix B;

(e) completed and signed copies of Appendix (A and B) or C of RSS-102 - *Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)*; and

(f) a drawing, sample or illustration of the product label.

5.4 Reassessment (Class II Permissive change)

A reassessment is required when a Class II permissive change (see Section 6) is made to previously certified equipment.

In order to obtain a reassessment certification, the following documentation must be presented to the Bureau:

(a) the model number and certification number of the approved radio equipment with a detailed description of the differences between the modified device and the previously certified device, with particular emphasis on the following:

  (i) the radio frequency and RF output power;
  (ii) the radio frequency circuitry;
  (iii) functional capabilities; and
  (iv) a test report.

(b) a completed and signed original copy of Appendix A. If more than one model is to be approved, the additional models may be shown on an attached list;

(c) a completed and signed original copy of Appendix B attached to the test report;

(d) photographs and product literature if the modified model's(s') internal or external appearance differ(s) from the previously certified models;

(e) completed and signed copies of Appendix (A and B) or C of RSS-102;

(f) a drawing, sample or illustration of the product label, if this is not shown in (d), and

(g) a brief statement as to why the modified product still qualifies for certification. This statement must be accompanied by schematic diagrams and block diagrams.

5.5 Transfer of a Certification

Certification ownership may be transferred from the current owner to a new entity that wishes to assume all of the previous owner's responsibilities associated to the certificate. To transfer the ownership, the new entity shall send a letter to the Bureau providing a copy of a signed letter from the current certificate holder, authorizing the Department to transfer the ownership from the current owner to the new entity and change the certificate file information to reflect the new owner's information. The letter must also attest that the equipment covered by the certificate is identical in design and construction to the originally approved model.

A completed and signed copy of Appendix A is also required.

6. Modification of Certified Radio Equipment

6.1 General

Modifications to certified radio equipment may require re-certification of the radio equipment. The certificate holder shall inform the Department of any changes that may affect compliance with the technical requirements of the standards under which the device was originally certified. These changes may require either complete or partial re-testing. Full details shall be submitted to the Bureau, including any test results where applicable.

6.2 Class I Permissive Change

A Class I permissive change includes those modifications in the radio equipment that: DO NOT change the electrical characteristics beyond the rated limits established by the manufacturer and accepted by Industry Canada for its certification; DO NOT change external or internal mechanical characteristics significantly enough to require new photographs to identify the modified radio equipment; and DO NOT change the model number. A Class I permissive change does not require notification to Industry Canada. **However, when Class I permissible changes are made, the certificate holder must ensure that the attestation of compliance with RSS-102, last submitted to the Bureau, continues to be valid.**

6.3 Class II Permissive Change

A Class II permissive change includes those modifications in the radio equipment which *DO* change the electrical characteristics beyond the rated limits established by the manufacturer and accepted by Industry Canada for its certification, *WITHOUT* violating the minimum requirements of the applicable standard. A Class II permissive change requires notification to Industry Canada.

7. Testing and Technical Brief

7.1 Open Area Test Site (OATS) or Alternative site

Test facilities and test methods for field strength radiated measurement, and the conducted measurement of unwanted emissions into the AC power supply network shall be performed in accordance with RSS-Gen.

7.2 Technical Brief

Certification shall be based on the assessment of a technical brief consisting, at a minimum, of:

(a) a covering letter precisely describing the radio apparatus and its specific use;

(b) a detailed description of the product and its application, including advertising literature, user and maintenance manuals, and schematic diagrams of the RF circuitry and block diagrams of associated circuitry;

(c) a test report which shall contain:

(i) the test report cover sheet shown in Appendix B appropriately filled out and signed;

(ii) the results of measurements conducted on the device as described in the applicable technical standard. If used, a full description of the alternative testing method and the reasons for using it shall be provided when filing for certification. If an alternative method is used, it is advisable to adopt a method used by a national or international organization; and

(iii) the radio frequency emission type designator used by the ITU-R (International Telecommunication Union-Radiocommunication Sector). See document TRC-43. An emission designator tool to assist with calculations is available on Industry Canada's Certification and Engineering Bureau website.[1]

[1] The Bureau's website is at: http://strategis.gc.ca/certification. The emission designator tool is in *Testing Utilities.*

(d) the supporting information, which shall contain the photographs of the internal circuit boards and external views of the product, required to precisely identify the radio equipment. Photographs shall be large enough to allow the major components to be clearly identified.

8. Certification Retention and Audits

Certificate holders shall ensure that all production units of certified radio equipment continue to meet the applicable procedural and technical requirements. Post-certification audits will be conducted by the Bureau and the CB in order to ensure continuing compliance.

The adherence of subsequent production units to the technical quality and characteristics under which certification was originally issued is implicit. To this end, periodic testing shall be carried out by the certificate holder to ensure continuing compliance with the technical standards.

The Department may request from a certificate holder random radio equipment samples at the certificate holder's expense for post-certification audit testing, or as a result of radio interference complaints. If the samples fail the tests, the certificate holder will be required to take corrective action.

9. Withdrawal of Certification

Where, as a result of post-certification audit or other information obtained by the CB or by the Department, a certified device fails to meet this procedure or the applicable technical requirements, or where there is reasonable evidence that a certified device is creating electromagnetic interference, or not operating in accordance with the parameters described on the certificate, the certificate holder will be required to take remedial action.

If the certificate holder does not take remedial action, the certification will be withdrawn by the Bureau or the CB and the Department will remove the offending equipment from the REL. The Department will also require that all units of the offending radio equipment be removed from service, and no longer be made available for sale or distribution in Canada.

10. Disclosure of Information

The applicant shall indicate which information and documents furnished in support of an application for certification are confidential. The provisions of the *Access to Information Act* apply.

Appendix A – Application and Agreement for Certification Services

APPLICANT & ADDRESS:	CONTACT NAME: E-MAIL ADDRESS:	TELEPHONE NO.: FACSIMILE NO.:

CANADIAN REPRESENTATIVE & ADDRESS:	CONTACT NAME: E-MAIL ADDRESS:	TELEPHONE NO.: FACSIMILE NO.:

COMPANY NUMBER and UPN NUMBER:

MODEL NUMBER:

SPECIFICATION STANDARD:

TYPE OF SERVICE: ❑ SINGLE ❑ NEW FAMILY ❑ PREVIOUS FAMILY ❑ MULTIPLE LISTING ❑ REASSESSMENT

If payment by cheque/ amount:	CARD HOLDER'S NAME:
CHEQUE Number:	CREDIT CARD TYPE: (VISA, MASTERCARD or AMEX)
Card Holder is: ❑ Applicant or ❑ Test facility	CREDIT CARD NO.:
AUTHORIZED AMOUNT:	EXPIRY DATE:
CARD HOLDER'S SIGNATURE:	

I agree to pay the total amount entered above in accordance with the credit card holder's agreement.

AGREEMENT:
THE APPLICANT AGREES TO:
(i) accept responsibility for all Departmental charges arising from this application;
(ii) meet all requirements in accordance with Radio Standards Procedure 100 and other applicable procedures;
(iii) warrant that the test results submitted are a true representation of the characteristics of the radio equipment type for which certification is requested; and
(iv) inform the Bureau of any changes to the information submitted.

NAME AND TITLE OF APPLICANT (PLEASE PRINT OR TYPE):

SIGNATURE OF APPLICANT:	DATE:

Note: This form must be completed and provided with the submission.

Appendix B – Test Report Cover Sheet

COMPANY NUMBER: _____

MODEL NUMBER: _____

MANUFACTURER: _____

TESTED TO RADIO STANDARDS SPECIFICATION (RSS) NO.: _____

OPEN AREA TEST SITE INDUSTRY CANADA NUMBER: _____

FREQUENCY RANGE (or fixed frequency): _____

RF POWER IN WATTS: _____

FIELD STRENGTH (at what distance): _____

OCCUPIED BANDWIDTH (99% BW): _____

TYPE OF MODULATION: _____

EMISSION DESIGNATOR (TRC-43): _____

TRANSMITTER SPURIOUS (worst case): _____

RECEIVER SPURIOUS (worst case): _____

ATTESTATION: I attest that the testing was performed or supervised by me; that the test measurements were made in accordance with the above-mentioned departmental standard(s), and that the radio equipment identified in this application has been subject to all the applicable test conditions specified in the departmental standards and all of the requirements of the standards have been met. **Signature:** **Date:**
Name and Title (Please print or type):

Note: This form must be completed and provided with the submission.

Appendix C – Checklist for Radio Certification

Obtain Company Number from Industry Canada, if not previously assigned	
Obtain OATS Number from Industry Canada, if not previously assigned	
Complete and sign Application and Agreement for Certification Services (Appendix A)	
Complete and sign Test Report Cover Sheet (Appendix B)	
Attach a cover letter precisely describing the radio apparatus and its specific use	
Attach payment of applicable fees (TRC-49)	