

Federal Communications Commission

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NOTE: For the purposes of this part, an amplifier will be deemed incapable of operation below 144 MHz if the amplifier is not capable of being easily modified to increase its amplification characteristics below 120 MHz, and either:

- (1) The mean output power of the amplifier decreases, as frequency decreases from 144 MHz, to a point where 0 decibels or less gain is exhibited at 120 MHz and below 120 MHz; or
- (2) The amplifier is not capable of even short periods of operation below 120 MHz without sustaining permanent damage to its amplification circuitry.

(d) The proscription in paragraph (b) of this section shall not apply to the marketing, as defined in paragraph (b) of this section, by a licensed amateur radio operator to another licensed amateur radio operator of an external radio frequency power amplifier fabricated in not more than one unit of the same model in a calendar year by that operator provided the amplifier is for the amateur operator's personal use at his licensed amateur radio station and the requirements of §§ 97.315 and 97.317 of this chapter are met.

(e) The proscription in paragraph (c) of this section shall not apply in the marketing, as defined in paragraph (c) of this section, by a licensed amateur radio operator to another licensed amateur radio operator of an external radio frequency power amplifier if the amplifier is for the amateur operator's personal use at his licensed amateur radio station and the requirements of §§ 97.315 and 97.317 of this chapter are met.

[40 FR 1246, Jan. 7, 1975; 40 FR 6474, Feb. 12, 1975, as amended at 43 FR 12687, Mar. 27, 1978; 43 FR 33725, Aug. 1, 1978; 46 FR 18981, Mar. 27, 1981; 62 FR 10470, Mar. 7, 1997]

Subpart J—Equipment Authorization Procedures

SOURCE: 39 FR 5919, Feb. 15, 1974, unless otherwise noted.

GENERAL PROVISIONS

§ 2.901 Basis and purpose.

(a) In order to carry out its responsibilities under the Communications Act and the various treaties and international regulations, and in order to promote efficient use of the radio spectrum, the Commission has developed

technical standards for radio frequency equipment and parts or components thereof. The technical standards applicable to individual types of equipment are found in that part of the rules governing the service wherein the equipment is to be operated. In addition to the technical standards provided, the rules governing the service may require that such equipment be verified by the manufacturer or importer, be authorized under a Declaration of Conformity, or receive an equipment authorization from the Commission by one of the following procedures: certification or registration.

(b) The following sections describe the verification procedure, the procedure for a Declaration of Conformity, and the procedures to be followed in obtaining certification from the Commission and the conditions attendant to such a grant.

[61 FR 31045, June 19, 1996, as amended at 62 FR 10470, Mar. 7, 1997; 63 FR 36597, July 7, 1998]

§ 2.902 Verification.

(a) Verification is a procedure where the manufacturer makes measurements or takes the necessary steps to insure that the equipment complies with the appropriate technical standards. Submittal of a sample unit or representative data to the Commission demonstrating compliance is not required unless specifically requested by the Commission pursuant to § 2.957, of this part.

(b) Verification attaches to all items subsequently marketed by the manufacturer or importer which are identical as defined in § 2.908 to the sample tested and found acceptable by the manufacturer.

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083; 47 U.S.C. 154, 303, 307)

[46 FR 23249, Apr. 24, 1981]

§ 2.906 Declaration of Conformity.

(a) A Declaration of Conformity is a procedure where the responsible party, as defined in § 2.909, makes measurements or takes other necessary steps to ensure that the equipment complies with the appropriate technical standards. Submittal of a sample unit or representative data to the Commission

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demonstrating compliance is not required unless specifically requested pursuant to § 2.1076.

(b) The Declaration of Conformity attaches to all items subsequently marketed by the responsible party which are identical, as defined in § 2.908, to the sample tested and found acceptable by the responsible party.

[61 FR 31045, June 19, 1996]

§ 2.907 Certification.

(a) Certification is an equipment authorization issued by the Commission, based on representations and test data submitted by the applicant.

(b) Certification attaches to all units subsequently marketed by the grantee which are identical (see § 2.908) to the sample tested except for permissive changes or other variations authorized by the Commission pursuant to § 2.1043.

[39 FR 5919, Feb. 15, 1974, as amended at 39 FR 27802, Aug. 1, 1974; 63 FR 36597, July 7, 1998]

§ 2.908 Identical defined.

As used in this subpart, the term *identical* means identical within the variation that can be expected to arise as a result of quantity production techniques.

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083; 47 U.S.C. 154, 303, 307)

[46 FR 23249, Apr. 24, 1981]

§ 2.909 Responsible party.

The following parties are responsible for the compliance of radio frequency equipment with the applicable standards:

(a) In the case of equipment which requires the issuance by the Commission of a grant of equipment authorization, the party to whom that grant of authorization is issued (the grantee). If the radio frequency equipment is modified by any party other than the grantee and that party is not working under the authorization of the grantee pursuant to § 2.929(b), the party performing the modification is responsible for compliance of the product with the applicable administrative and technical provisions in this chapter.

(b) In the case of equipment subject to authorization under the verification

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procedure, the manufacturer or, in the case of imported equipment, the importer. If subsequent to manufacture and importation, the radio frequency equipment is modified by any party not working under the authority of the responsible party, the party performing the modification becomes the new responsible party.

(c) In the case of equipment subject to authorization under the Declaration of Conformity procedure:

(1) The manufacturer or, if the equipment is assembled from individual component parts and the resulting system is subject to authorization under a Declaration of Conformity, the assembler.

(2) If the equipment, by itself, is subject to a Declaration of Conformity and that equipment is imported, the importer.

(3) Retailers or original equipment manufacturers may enter into an agreement with the responsible party designated in paragraph (c)(1) or (c)(2) of this section to assume the responsibilities to ensure compliance of equipment and become the new responsible party.

(4) If the radio frequency equipment is modified by any party not working under the authority of the responsible party, the party performing the modifications, if located within the U.S., or the importer, if the equipment is imported subsequent to the modifications, becomes the new responsible party.

(d) If, because of modifications performed subsequent to authorization, a new party becomes responsible for ensuring that a product complies with the technical standards and the new party does not obtain a new equipment authorization, the equipment shall be labelled, following the specifications in § 2.925(d), with the following: "This product has been modified by [insert name, address and telephone number of the party performing the modifications]."

[54 FR 17712, Apr. 25, 1989, as amended at 61 FR 31045, June 19, 1996; 62 FR 10470, Mar. 7, 1997; 62 FR 41880, Aug. 4, 1997]

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APPLICATION PROCEDURES FOR EQUIPMENT AUTHORIZATIONS

§ 2.911 Written application required.

(a) An application for equipment authorization shall be filed on a form prescribed by the Commission.

(b) Each application shall be accompanied by all information required by this subpart and by those parts of the rules governing operation of the equipment, and by requisite test data, diagrams, etc., as specified in this subpart and in those sections of rules whereunder the equipment is to be operated.

(c) Each application including amendments thereto, and related statements of fact required by the Commission, shall be personally signed by the applicant if the applicant is an individual; by one of the partners if the applicant is a partnership; by an officer, if the applicant is a corporation; or by a member who is an officer, if the applicant is an unincorporated association: *Provided, however,* That the application may be signed by the applicant's authorized representative who shall indicate his title, such as plant manager, project engineer, etc.

(d) Technical test data shall be signed by the person who performed or supervised the tests. The person signing the test data shall attest to the accuracy of such data. The Commission may require such person to submit a statement showing that he is qualified to make or supervise the required measurements.

(e) The signatures of the applicant and the person certifying the test data shall be made personally by those persons on the original application; copies of such documents may be conformed. Signatures and certifications need not be made under oath.

(f) Each application shall be accompanied by the processing fee prescribed in subpart G of part 1 of this chapter.

(g) *Signed*, as used in this section, means an original handwritten signature; however, the Office of Engineering and Technology may allow signature by any symbol executed or adopted by the applicant with the intent that such symbol be a signature, in-

cluding symbols formed by computer-generated electronic impulses.

[39 FR 5919, Feb. 15, 1974, as amended at 39 FR 27802, Aug. 1, 1974; 52 FR 5294, Feb. 20, 1987. Redesignated at 54 FR 17712, Apr. 25, 1989; 63 FR 36598, July 7, 1998]

§ 2.913 Submittal of equipment authorization application or information to the Commission.

(a) Unless otherwise directed, applications with fees attached for the equipment authorization, pursuant to § 1.1103 of this chapter, must be submitted following the procedures described in § 0.401(b) of this chapter. The address for applications submitted by mail is: Federal Communications Commission, Equipment Approval Services, P. O. Box 358315, Pittsburgh, PA 15251-5315. If the applicant chooses to make use of an air courier/package delivery service, the following address must appear on the outside of the package/envelope: Federal Communications Commission, c/o Mellon Bank, Three Mellon Bank Center, 525 William Penn Way, 27th floor, Room 153-2713, Pittsburgh, Pennsylvania 15259-0001, Attention: Wholesale Lockbox Supervisor.

(b) Any information or equipment samples requested by the Commission pursuant to the provisions of subpart J of this part shall, unless otherwise directed, be submitted to the Federal Communications Commission, Equipment Authorization Division, 7435 Oakland Mills Road, Columbia, Maryland 21046.

(c) Effective October 5, 1999, all applications for equipment authorization must be filed electronically. The Commission will be amenable to consideration of waiver requests from small businesses that find it a hardship to file applications electronically. Information on the procedures for electronically filing equipment authorization applications can be obtained from the address in paragraph (b) of this section.

[61 FR 31045, June 19, 1996, as amended at 62 FR 10470, Mar. 7, 1997; 63 FR 36598, July 7, 1998]

§ 2.915 Grant of application.

(a) The Commission will grant an application for certification if it finds from an examination of the application

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and supporting data, or other matter which it may officially notice, that:

(1) The equipment is capable of complying with pertinent technical standards of the rule part(s) under which it is to be operated; and,

(2) A grant of the application would serve the public interest, convenience and necessity.

(b) Grants will be made in writing showing the effective date of the grant and any special condition(s) attaching to the grant.

(c) Certification shall not attach to any equipment, nor shall any equipment authorization be deemed effective, until the application has been granted.

[39 FR 5919, Feb. 15, 1974, as amended at 48 FR 3621, Jan. 26, 1983; 62 FR 10470, Mar. 7, 1997; 63 FR 36598, July 7, 1998]

§2.917 Dismissal of application.

(a) An application which is not in accordance with the provisions of this subpart may be dismissed.

(b) Any application, upon written request signed by the applicant or his attorney, may be dismissed prior to a determination granting or denying the authorization requested.

(c) If an applicant is requested by the Commission to file additional documents or information and fails to submit the requested material within 60 days, the application may be dismissed.

[39 FR 5919, Feb. 15, 1974, as amended at 62 FR 10470, Mar. 7, 1997]

§2.919 Denial of application.

If the Commission is unable to make the findings specified in §2.915(a), it will deny the application. Notification to the applicant will include a statement of the reasons for the denial.

§2.921 Hearing on application.

Whenever it is determined that an application for equipment authorization presents substantial factual questions relating to the qualifications of the applicant or the equipment (or the effects of the use thereof), the Commission may designate the application for hearing. A hearing on an application for an equipment authorization shall be conducted in the same manner as a hearing on a radio station application

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as set out in subpart B of part 1 of this chapter.

§2.923 Petition for reconsideration; application for review.

Persons aggrieved by virtue of an equipment authorization action may file with the Commission a petition for reconsideration or an application for review. Rules governing the filing of petitions for reconsideration and applications for review are set forth in §§1.106 and 1.115, respectively, of this chapter.

§2.924 Marketing of electrically identical equipment having multiple trade names and models or type numbers under the same FCC Identifier.

The grantee of an equipment authorization may market devices having different model/type numbers or trade names without additional authorization from the Commission, provided that such devices are electrically identical and the equipment bears an FCC Identifier validated by a grant of equipment authorization. A device will be considered to be electrically identical if no changes are made to the device authorized by the Commission, or if the changes made to the device would be treated as class I permissive changes within the scope of §2.1043(b)(1). Changes to the model number or trade name by anyone other than the grantee, or under the authorization of the grantee, shall be performed following the procedures in §2.933.

[62 FR 10470, Mar. 7, 1997, as amended at 63 FR 36598, July 7, 1998]

§2.925 Identification of equipment.

(a) Each equipment covered in an application for equipment authorization shall bear a nameplate or label listing the following:

(1) FCC Identifier consisting of the two elements in the exact order specified in §2.926. The FCC Identifier shall be preceded by the term *FCC ID* in capital letters on a single line, and shall be of a type size large enough to be legible without the aid of magnification.

Example: FCC ID XXX123. XXX—Grantee Code 123—Equipment Product Code

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(2) Any other statements or labeling requirements imposed by the rules governing the operation of the specific class of equipment, except that such statement(s) of compliance may appear on a separate label at the option of the applicant/grantee.

(3) Equipment subject only to registration will be identified pursuant to part 68 of this chapter.

(b) Any device subject to more than one equipment authorization procedure may be assigned a single FCC Identifier. However, a single FCC Identifier is required to be assigned to any device consisting of two or more sections assembled in a common enclosure, on a common chassis or circuit board, and with common frequency controlling circuits. Devices to which a single FCC Identifier has been assigned shall be identified pursuant to paragraph (a) of this section.

(1) Separate FCC Identifiers may be assigned to a device consisting of two or more sections assembled in a common enclosure, but constructed on separate sub-units or circuit boards with independent frequency controlling circuits. The FCC Identifier assigned to any transmitter section shall be preceded by the term *TX FCC ID*, the FCC Identifier assigned to any receiver section shall be preceded by the term *RX FCC ID* and the identifier assigned to any remaining section(s) shall be preceded by the term *FCC ID*.

(2) Where telephone equipment subject to part 68 of this chapter, and a radiofrequency device subject to equipment authorization requirements are assembled in a common enclosure, the nameplate/label shall display the FCC Registration Number in the format specified in part 68 and the FCC Identifier in the format specified in paragraph (a) of this section.

(3) Applications filed on or after May 1, 1981, and applications filed earlier requesting equipment authorization using the single system of identification pursuant to section (a)(1) will receive a review of the identification portion by the Commission's Laboratory with respect to nameplate/label design within 30 days after receipt at the Laboratory. Failure by the Laboratory to reject a nameplate design proposed in any particular application within this

time period will constitute de-facto acceptance of the nameplate/label design for that particular equipment. Such de facto acceptance will be limited to the equipment covered by the particular application and will not be considered to establish a precedent for other applications. This review deadline applies only to the proposed nameplate/label design, not to the remainder of the application.

(4) For a transceiver, the receiver portion of which is subject to verification pursuant to § 15.101 of this chapter, the FCC Identifier required for the transmitter portion shall be preceded by the term *FCC ID*.

(c) [Reserved]

(d) In order to validate the grant of equipment authorization, the nameplate or label shall be permanently affixed to the equipment and shall be readily visible to the purchaser at the time of purchase.

(1) As used here, *permanently affixed* means that the required nameplate data is etched, engraved, stamped, indelibly printed, or otherwise permanently marked on a permanently attached part of the equipment enclosure. Alternatively, the required information may be permanently marked on a nameplate of metal, plastic, or other material fastened to the equipment enclosure by welding, riveting, etc., or with a permanent adhesive. Such a nameplate must be able to last the expected lifetime of the equipment in the environment in which the equipment will be operated and must not be readily detachable.

(2) As used here, *readily visible* means that the nameplate or nameplate data must be visible from the outside of the equipment enclosure. It is preferable that it be visible at all times during normal installation or use, but this is not a prerequisite for grant of equipment authorization.

(e) A software defined radio may be equipped with a means such as a user display screen to display the FCC identification number normally contained in the nameplate or label. The information must be readily accessible, and the user manual must describe how to access the electronic display.

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(f) Where it is shown that a permanently affixed nameplate is not desirable or is not feasible, an alternative method of positively identifying the equipment may be used if approved by the Commission. The proposed alternative method of identification and the justification for its use must be included with the application for equipment authorization.

NOTE: As an example, a device intended to be implanted within the body of a test animal or person would probably require an alternate method of identification.

(g) The term *FCC ID* and the coded identification assigned by the Commission shall be in a size of type large enough to be readily legible, consistent with the dimensions of the equipment and its nameplate. However, the type size for the FCC Identifier is not required to be larger than eight-point.

[44 FR 17177, Mar. 21, 1979, as amended at 44 FR 55574, Sept. 27, 1979; 46 FR 21013, Apr. 8, 1981; 52 FR 21687, June 9, 1987; 54 FR 1698, Jan. 17, 1989; 62 FR 10470, Mar. 7, 1997; 66 FR 50840, Oct. 5, 2001]

§ 2.926 FCC identifier.

(a) A grant of equipment authorization issued by the Commission will list the validated FCC Identifier consisting of the grantee code assigned by the FCC pursuant to paragraph (b) of this section, and the equipment product code assigned by the grantee pursuant to paragraph (c) of this section. See § 2.925.

(b) The grantee code assigned pursuant to paragraph (c) of this section is assigned permanently to applicants/grantees and is valid only for the party specified as the applicant/grantee in the code assignment(s).

(c) A grantee code will have three characters consisting of Arabic numerals, capital letters, or combination thereof. A prospective grantee or his authorized representative may submit a written request to the Commission for assignment of a grantee code at any time. However, it is preferred that grantee codes be requested prior to filing applications for equipment authorization. If a grantee code is not requested in advance, one will be assigned at the time an application is received by the FCC Laboratory and the

applicant will be notified to make any necessary label revisions in order to comply fully with application procedural rules.

(1) After assignment of a grantee code each grantee will continue to use the same grantee code for subsequent equipment authorization applications.

In the event the grantee name is changed or ownership is transferred, the circumstances shall be reported to the Commission so that a new grantee code can be assigned, if appropriate. See §§ 2.934 and 2.935 for additional information.

(2) [Reserved]

(d) The equipment product code assigned by the grantee shall consist of a series of Arabic numerals, capital letters or a combination thereof, and may include the dash or hyphen (-). The total of Arabic numerals, capital letters and dashes or hyphens shall not exceed 14 and shall be one which has not been previously used in conjunction with:

(1) The same grantee code, or

(2) An application denied pursuant to § 2.919 of this chapter.

(e) No FCC Identifier may be used on equipment to be marketed unless that specific identifier has been validated by a grant of equipment authorization issued by the Commission. This shall not prohibit placement of an FCC identifier on a transceiver which includes a verified receiver subject to § 15.101, provided that the transmitter portion of such transceiver is covered by a valid grant of type acceptance or certification. The FCC Identifier is uniquely assigned to the grantee and may not be placed on the equipment without authorization by the grantee. See § 2.803 for conditions applicable to the display at trade shows of equipment which has not been granted equipment authorization where such grant is required prior to marketing. Labelling of such equipment may include model or type numbers, but shall not include a purported FCC Identifier.

[44 FR 17179, Mar. 21, 1979, as amended at 46 FR 21014, Apr. 8, 1981; 52 FR 21687, June 9, 1987; 54 FR 1698, Jan. 17, 1989; 62 FR 10471, Mar. 7, 1997]

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CONDITIONS ATTENDANT TO AN EQUIPMENT AUTHORIZATION

§ 2.927 Limitations on grants.

(a) A grant of equipment authorization is valid only when the FCC Identifier is permanently affixed on the device and remains effective until revoked or withdrawn, rescinded, surrendered, or a termination date is otherwise established by the Commission.

(b) A grant of an equipment authorization signifies that the Commission has determined that the equipment has been shown to be capable of compliance with the applicable technical standards if no unauthorized change is made in the equipment and if the equipment is properly maintained and operated. The issuance of a grant of equipment authorization shall not be construed as a finding by the Commission with respect to matters not encompassed by the Commission's rules, especially with respect to compliance with 18 U.S.C. 2512.

(c) No person shall, in any advertising matter, brochure, etc., use or make reference to an equipment authorization in a deceptive or misleading manner or convey the impression that such equipment authorization reflects more than a Commission determination that the device or product has been shown to be capable of compliance with the applicable technical standards of the Commission's rules.

[39 FR 5919, Feb. 15, 1974, as amended at 44 FR 29066, May 18, 1979; 62 FR 10471, Mar. 7, 1997]

§ 2.929 Changes in name, address, ownership or control of grantee.

(a) An equipment authorization issued by the Commission may not be assigned, exchanged or in any other way transferred to a second party, except as provided in this section.

(b) The grantee of an equipment authorization may license or otherwise authorize a second party to manufacture the equipment covered by the grant of the equipment authorization provided:

(1) The equipment manufactured by such second party bears the FCC Identifier as is set out in the grant of the equipment authorization.

NOTE TO PARAGRAPH (b)(1): Any change in the FCC Identifier desired as a result of such production or marketing agreement will require the filing of a new application for an equipment authorization as specified in § 2.933.

(2) The grantee of the equipment authorization shall continue to be responsible to the Commission for the equipment produced pursuant to such an agreement.

(c) Whenever there is a change in the name and/or address of the grantee of an equipment authorization, written notice of such change(s) shall be submitted to the Commission within 30 days after the grantee starts using the new name and/or address.

(d) In the case of transactions affecting the grantee, such as a transfer of control or sale to another company, mergers, or transfer of manufacturing rights, notice must be given to the Commission in writing within 60 days after the consummation of the transaction. Depending on the circumstances in each case, the Commission may require new applications for equipment authorization. In reaching a decision the Commission will consider whether the acquiring party can adequately ensure and accept responsibility for continued compliance with the regulations. In general, new applications for each device will not be required. A single application for equipment authorization may be filed covering all the affected equipment.

[63 FR 36598, July 7, 1998]

§ 2.931 Responsibility of the grantee.

In accepting a grant of an equipment authorization, the grantee warrants that each unit of equipment marketed under such grant and bearing the identification specified in the grant will conform to the unit that was measured and that the data (design and rated operational characteristics) filed with the application for certification continues to be representative of the equipment being produced under such grant within the variation that can be expected due to quantity production and testing on a statistical basis.

[63 FR 36598, July 7, 1998]

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§ 2.932 Modification of equipment.

(a) A new application for an equipment authorization shall be filed whenever there is a change in the design, circuitry or construction of an equipment or device for which an equipment authorization has been issued, except as provided in paragraphs (b) through (d) of this section.

(b) Permissive changes may be made in certificated equipment, and equipment that was authorized under the former type acceptance procedure, pursuant to § 2.1043.

(c) Permissive changes may be made in equipment that was authorized under the former notification procedure without submittal of information to the Commission, unless the equipment is currently subject to authorization under the certification procedure. However, the grantee shall submit information documenting continued compliance with the pertinent requirements upon request.

(d) All requests for permissive changes submitted to the Commission must be accompanied by the anti-drug abuse certification required under § 1.2002 of this chapter.

(e) Manufacturers must take steps to ensure that only software that has been approved with a software defined radio can be loaded into such a radio. The software must not allow the user to operate the transmitter with frequencies, output power, modulation types or other parameters outside of those that were approved. Manufacturers may use authentication codes or any other means to meet these requirements, and must describe the methods in their application for equipment authorization.

[63 FR 36598, July 7, 1998, as amended at 66 FR 50840, Oct. 5, 2001]

§ 2.933 Change in identification of equipment.

(a) A new application for equipment authorization shall be filed whenever there is a change in the FCC Identifier for the equipment with or without a change in design, circuitry or construction. However, a change in the model/type number or trade name performed in accordance with the provisions in § 2.924 of this chapter is not considered

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to be a change in identification and does not require additional authorization from the Commission.

(b) An application filed pursuant to paragraph (a) of this section where no change in design, circuitry or construction is involved, need not be accompanied by a resubmission of equipment or measurement or test data customarily required with a new application, unless specifically requested by the Commission. In lieu thereof, the applicant shall attach a statement setting out:

(1) The original identification used on the equipment prior to the change in identification.

(2) The date of the original grant of the equipment authorization.

(3) How the equipment bearing the modified identification differs from the original equipment.

(4) Whether the original test results continue to be representative of and applicable to the equipment bearing the changed identification.

(5) The photographs required by § 2.1033(b)(7) or § 2.1033(c)(12) showing the exterior appearance of the equipment, including the operating controls available to the user and the identification label. Photographs of the construction, the component placement on the chassis, and the chassis assembly are not required to be submitted unless specifically requested by the Commission.

(c) If the change in the FCC Identifier also involves a change in design or circuitry which falls outside the purview of a permissive change described in § 2.1043, a complete application shall be filed pursuant to § 2.911.

[63 FR 36598, July 7, 1998]

§ 2.936 FCC inspection.

Upon reasonable request, each responsible party shall submit the following to the Commission or shall make the following available for inspection:

(a) The records required by §§ 2.938, 2.955, and 2.1075.

(b) A sample unit of the equipment covered under an authorization.

(c) The manufacturing plant and facilities.

[62 FR 10471, Mar. 7, 1997]

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§ 2.937 Equipment defect and/or design change.

When a complaint is filed with the Commission concerning the failure of equipment subject to this chapter to comply with pertinent requirements of the Commission's rules, and the Commission determines that the complaint is justified and arises out of an equipment fault attributable to the responsible party, the Commission may require the responsible party to investigate such complaint and report the results of such investigation to the Commission. The report shall also indicate what action if any has been taken or is proposed to be taken by the responsible party to correct the defect, both in terms of future production and with reference to articles in the possession of users, sellers and distributors.

[61 FR 31046, June 19, 1996]

§ 2.938 Retention of records.

(a) For each equipment subject to the Commission's equipment authorization standards, the responsible party shall maintain the records listed as follows:

(1) A record of the original design drawings and specifications and all changes that have been made that may affect compliance with the standards and the requirements of § 2.931.

(2) A record of the procedures used for production inspection and testing to ensure conformance with the standards and the requirements of § 2.931.

(3) A record of the test results that demonstrate compliance with the appropriate regulations in this chapter.

(b) The provisions of paragraph (a) of this section shall also apply to a manufacturer of equipment produced under the provisions of § 2.929(b). The retention of the records by the manufacturer under these circumstances shall satisfy the grantee's responsibility under paragraph (a) of this section.

(c) The records listed in paragraph (a) of this section shall be retained for one year for equipment subject to authorization under the certification procedure or former type acceptance procedure, or for two years for equipment subject to authorization under any other procedure, after the manufacture of said equipment has been permanently discontinued, or until the con-

clusion of an investigation or a proceeding if the responsible party (or, under paragraph (b) of this section, the manufacturer) is officially notified that an investigation or any other administrative proceeding involving its equipment has been instituted.

(d) If radio frequency equipment is modified by any party other than the original responsible party, and that party is not working under the authorization of the original responsible party, the party performing the modifications is not required to obtain the original design drawings specified in paragraph (a)(1) of this section. However, the party performing the modifications must maintain records showing the changes made to the equipment along with the records required in paragraphs (a)(3) of this section. A new equipment authorization may also be required. See, for example, §§ 2.909, 2.924, 2.933, and 2.1043.

[62 FR 10471, Mar. 7, 1997, as amended at 63 FR 36599, July 7, 1998]

§ 2.939 Revocation or withdrawal of equipment authorization.

(a) The Commission may revoke any equipment authorization:

(1) For false statements or representations made either in the application or in materials or response submitted in connection therewith or in records required to be kept by § 2.938.

(2) If upon subsequent inspection or operation it is determined that the equipment does not conform to the pertinent technical requirements or to the representations made in the original application.

(3) If it is determined that changes have been made in the equipment other than those authorized by the rules or otherwise expressly authorized by the Commission.

(4) Because of conditions coming to the attention of the Commission which would warrant it in refusing to grant an original application.

(b) Revocation of an equipment authorization shall be made in the same manner as revocation of radio station licenses.

(c) The Commission may withdraw any equipment authorization in the event of changes in its technical standards. The procedure to be followed will

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be set forth in the order promulgating such new technical standards (after appropriate rulemaking proceedings) and will provide a suitable amortization period for equipment in hands of users and in the manufacturing process.

[39 FR 5919, Feb. 15, 1974, as amended at 51 FR 39535, Oct. 29, 1986]

§ 2.941 Availability of information relating to grants.

(a) Grants of equipment authorization, other than for receivers and equipment authorized for use under parts 15 or 18 of this chapter, will be publicly announced in a timely manner by the Commission. Information about the authorization of a device using a particular FCC Identifier may be obtained by contacting the Commission's Office of Engineering and Technology Laboratory.

(b) Information relating to equipment authorizations, such as data submitted by the applicant in connection with an authorization application, laboratory tests of the device, etc., shall be available in accordance with §§ 0.441 through 0.470 of this chapter.

[62 FR 10472, Mar. 7, 1997]

§ 2.943 Submission of equipment for testing.

(a) The Commission may require an applicant to submit one or more sample units for measurement at the Commission's laboratory.

(b) In the event the applicant believes that shipment of the sample to the Commission's laboratory is impractical because of the size or weight of the equipment, or the power requirement, or for any other reason, the applicant may submit a written explanation why such shipment is impractical and should not be required.

[39 FR 5919, Feb. 15, 1974, as amended at 48 FR 3621, Jan. 26, 1983; 63 FR 36599, July 7, 1998]

§ 2.944 Submission of radio software.

The grantee or other party responsible for compliance of a software defined radio, or the applicant for authorization of a software defined radio shall submit a copy of the software that controls the radio frequency operating parameters upon request by the Commis-

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sion. Failure to comply with such a request within 14 days or such additional time as the Commission may allow may be cause for denial of authorization, forfeiture pursuant to § 1.80 of this chapter, or other administrative sanctions.

[66 FR 50840, Oct. 5, 2001]

§ 2.945 Sampling tests of equipment compliance.

The Commission will, from time to time, request the responsible party to submit equipment subject to this chapter to determine the extent to which subsequent production of such equipment continues to comply with the data filed by the applicant (or on file with the responsible party for equipment subject to notification or a Declaration of Conformity). Shipping costs to the Commission's laboratory and return shall be borne by the responsible party.

[61 FR 31046, June 19, 1996]

§ 2.946 Penalty for failure to provide test samples and data.

(a) Any responsible party, as defined in § 2.909, or any party who markets equipment subject to the provisions of this chapter, shall provide test sample(s) or data upon request by the Commission. Failure to comply with such a request within 14 days may be cause for forfeiture, pursuant to § 1.80 of this chapter, or other administrative sanctions such as suspending action on any applications for equipment authorization submitted by such party while the matter is being resolved.

(b) The Commission may consider extensions of time upon submission of a showing of good cause.

[63 FR 36599, July 7, 1998]

§ 2.947 Measurement procedure.

(a) The Commission will accept data which have been measured in accordance with the following standards or measurement procedures:

(1) Those set forth in bulletins or reports prepared by the Commission's Office of Engineering and Technology. These will be issued as required, and specified in the particular part of the rules where applicable.

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(2) Those acceptable to the Commission and published by national engineering societies such as the Electronic Industries Association, the Institute of Electrical and Electronic Engineers, Inc., and the American National Standards Institute.

(3) Any measurement procedure acceptable to the Commission may be used to prepare data demonstrating compliance with the requirements of this chapter.

(b) Information submitted pursuant to paragraph (a) of this section shall completely identify the specific standard or measurement procedure used.

(c) In the case of equipment requiring measurement procedures not specified in the references set forth in paragraphs (a) (1) and (2) of this section, the applicant shall submit a detailed description of the measurement procedures actually used.

(d) A listing of the test equipment used shall be submitted.

(e) If deemed necessary, the Commission may require additional information concerning the measurement procedures employed in obtaining the data submitted for equipment authorization purposes.

[42 FR 44987, Sept. 8, 1977, as amended at 44 FR 39181, July 5, 1979; 51 FR 12616, Apr. 14, 1986]

§ 2.948 Description of measurement facilities.

(a) Each party making measurements of equipment that is subject to an equipment authorization under part 15 or part 18 of this chapter, regardless of whether the measurements are filed with the Commission or kept on file by the party responsible for compliance of equipment marketed within the U.S. or its possessions, shall compile a description of the measurement facilities employed.

(1) If the measured equipment is subject to the verification procedure, the description of the measurement facilities shall be retained by the party responsible for verification of the equipment.

(i) If the equipment is verified through measurements performed by an independent laboratory, it is acceptable for the party responsible for verification of the equipment to rely

upon the description of the measurement facilities retained by or placed on file with the Commission by that laboratory. In this situation, the party responsible for verification of the equipment is not required to retain a duplicate copy of the description of the measurement facilities.

(ii) If the equipment is verified based on measurements performed at the installation site of the equipment, no specific site calibration data is required. It is acceptable to retain the description of the measurement facilities at the site at which the measurements were performed.

(2) If the equipment is to be authorized by the Commission under the certification procedure, the description of the measurement facilities shall be filed with the Commission's Laboratory in Columbia, Maryland. The data describing the measurement facilities need only be filed once but must be updated as changes are made to the measurement facilities or as otherwise described in this section. At least every three years, the organization responsible for filing the data with the Commission shall certify that the data on file is current.

(3) If the equipment is to be authorized under a Declaration of Conformity, the description of the measurement facilities shall be retained by the party performing the measurements.

(b) The description shall contain the following information:

(1) Location of the test site.

(2) Physical description of the test site accompanied by photographs of size A4 (21 cm × 29.7 cm) or 8×10 inches (20.3 cm × 25.4 cm). Smaller photographs may be used if they clearly show the details of the test site and are mounted on full size sheets of paper.

(3) A drawing showing the dimensions of the site, physical layout of all supporting structures, and all structures within 5 times the distance between the measuring antenna and the device being measured.

(4) Description of structures used to support the device being measured and the test instrumentation.

(5) List of measuring equipment used.

(6) Information concerning the calibration of the measuring equipment,

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i.e., the date the equipment was last calibrated and how often the equipment is calibrated.

(7) If desired, a statement as to whether the test site is available to do measurement services for the public on a fee basis.

(8) A plot of site attenuation data.

(i) For a measurement facility that will be used for testing radiated emissions from a digital device on or after May 1, 1994, or for testing intentional and other unintentional radiators authorized under part 15 of the rules on or after June 1, 1995, the site attenuation data shall be taken pursuant to the procedures contained in Sections 5.4.6 through 5.5 of the following procedure: American National Standards Institute (ANSI) C63.4-1992, entitled "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz," published by the Institute of Electrical and Electronics Engineers, Inc. on July 17, 1992 as document number SH15180. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of ANSI C63.4-1992 may be obtained from: IEEE Standards Department, 455 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331, telephone 1-800-678-4333. Copies of ANSI C63.4-1992 may be inspected at the following locations:

(A) Federal Communications Commission, 445 12th Street, SW., Office of Engineering and Technology, Washington, DC 20554,

(B) Federal Communications Commission Laboratory, 7435 Oakland Mills Road, Columbia, MD 21046, or

(C) Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(ii) For a measurement facility that will be used for testing radiated emissions from a digital device prior to May 1, 1994, or from intentional and other unintentional radiators authorized under part 15 prior to June 1, 1995, or from devices authorized under part 18 of the rules, the site attenuation data shall be taken pursuant to either ANSI C63.4-1992, Sections 5.4.6 through 5.5, or FCC/OET Bulletin 55.

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(iii) This requirement does not apply to equipment that is not measured on an open field test site.

(9) A description of the types of equipment intended to be measured or other information regarding the types of measurements that would be performed at the test facility.

(c) The Commission will publish a list of those parties who have filed the information required by this section, provided they indicate that they wish to perform measurement services for the public on a fee basis. However, it should be noted that the Commission does not endorse or approve any facility on this list.

(d) If the equipment is to be authorized under a Declaration of Conformity, the party performing the measurements shall be accredited for performing such measurements by an authorized accreditation body based on the International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) Guide 25, "General Requirements for the Competence of Calibration and Testing Laboratories." Accreditation bodies must be approved by the FCC's Office of Engineering and Technology, as indicated in § 0.241 of this chapter, to perform such accreditation based on ISO/IEC 58, "Calibration and Testing Laboratory Accreditation Systems—General Requirements for Operation and Recognition." The frequency for re-validation of the test site and the information required to be filed or retained by the testing party shall comply with the requirements established by the accrediting organization.

(1) In addition to meeting the above requirements, the accreditations of laboratories located outside of the United States or its possessions will be acceptable only under one of the following conditions:

(i) If there is a mutual recognition agreement between that country and the United States and that laboratory is covered by the agreement;

(ii) If there is an agreement between accrediting bodies that permits similar accreditation of U.S. facilities to perform testing for products marketed in that country; or

(iii) If the country already accepts the accreditation of U.S. laboratories.

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(2) Organizations outside of the United States that seek to become accreditors may seek agreements with approved United States accrediting bodies to mutually recognize the accreditation of laboratories. The Commission will review such agreements and will consult with the Office of the United States Trade Representative and other Executive Branch agencies before accepting them for purposes of the DoC procedure in order to ensure that the respective foreign countries accept United States accreditations and do not impose additional barriers upon United States companies. Accrediting bodies located outside of the United States will only be permitted to accredit laboratories within their own country for DoC testing.

(3) To facilitate use of the DoC procedure, the FCC will accept a laboratory that submits documentation to OET's Equipment Authorization Division stating that it has filed an application for accreditation with an approved laboratory accreditation body and provides evidence that it meets all aspects of ISO/IEC Guide 25. Such labs will be provisionally accepted by the FCC for a period of one year (until August 19, 1997) or until the application for accreditation has been acted upon, whichever is sooner. A laboratory that is denied accreditation by an approved accreditation body will lose its provisional acceptance. However, any DoCs that were issued will remain valid.

[54 FR 17712, Apr. 25, 1989, as amended at 57 FR 24990, June 12, 1992; 58 FR 37430, July 12, 1993; 58 FR 44893, Aug. 25, 1993; 61 FR 31046, June 19, 1996; 62 FR 41880, Aug. 4, 1997; 63 FR 36599, July 7, 1998; 65 FR 58466, Sept. 29, 2000]

VERIFICATION

AUTHORITY: Sections 2.951 through 2.957 are issued under secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083; 47 U.S.C. 154, 303, 307.

SOURCE: Sections 2.951 through 2.957 appear at 46 FR 23249, Apr. 24, 1981, unless otherwise noted.

§ 2.951 Cross reference.

The provisions of § 2.901, *et seq.*, shall apply to equipment subject to verification.

§ 2.952 Limitation on verification.

(a) Verification signifies that the manufacturer or importer has determined that the equipment has been shown to be capable of compliance with the applicable technical standards if no unauthorized change is made in the equipment and if the equipment is properly maintained and operated. Compliance with these standards shall not be construed to be a finding by the manufacturer or importer with respect to matters not encompassed by the Commission's rules.

(b) Verification of the equipment by the manufacturer or importer is effective until a termination date is otherwise established by the Commission.

(c) No person shall, in any advertising matter, brochure, etc., use or make reference to a verification in a deceptive or misleading manner or convey the impression that such verification reflects more than a determination by the manufacturer or importer that the device or product has been shown to be capable of compliance with the applicable technical standards of the Commission's rules.

§ 2.953 Responsibility for compliance.

(a) In verifying compliance, the responsible party, as defined in § 2.909 warrants that each unit of equipment marketed under the verification procedure will be identical to the unit tested and found acceptable with the standards and that the records maintained by the responsible party continue to reflect the equipment being produced under such verification within the variation that can be expected due to quantity production and testing on a statistical basis.

(b) The importer of equipment subject to verification may upon receiving a written statement from the manufacturer that the equipment complies with the appropriate technical standards rely on the manufacturer or independent testing agency to verify compliance. The test records required by § 2.955 however should be in the English language and made available to the Commission upon a reasonable request, in accordance with § 2.956.

(c) In the case of transfer of control of equipment, as in the case of sale or

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merger of the grantee, the new manufacturer or importer shall bear the responsibility of continued compliance of the equipment.

(d) Verified equipment shall be reverified if any modification or change adversely affects the emanation characteristics of the modified equipment. The party designated in § 2.909 bears responsibility for continued compliance of subsequently produced equipment.

[39 FR 5919, Feb. 15, 1974, as amended at 62 FR 10472, Mar. 7, 1997]

§ 2.954 Identification.

Devices subject only to verification shall be uniquely identified by the person responsible for marketing or importing the equipment within the United States. However, the identification shall not be of a format which could be confused with the FCC Identifier required on certified, notified or type accepted equipment. The importer or manufacturer shall maintain adequate identification records to facilitate positive identification for each verified device.

[62 FR 10472, Mar. 7, 1997]

§ 2.955 Retention of records.

(a) For each equipment subject to verification, the responsible party, as shown in § 2.909 shall maintain the records listed as follows:

(1) A record of the original design drawings and specifications and all changes that have been made that may affect compliance with the requirements of § 2.953.

(2) A record of the procedures used for production inspection and testing (if tests were performed) to insure the conformance required by § 2.953. (Statistical production line emission testing is not required.)

(3) A record of the measurements made on an appropriate test site that demonstrates compliance with the applicable regulations in this chapter. The record shall:

(i) Indicate the actual date all testing was performed;

(ii) State the name of the test laboratory, company, or individual performing the verification testing. The Commission may request additional in-

formation regarding the test site, the test equipment or the qualifications of the company or individual performing the verification tests;

(iii) Contain a description of how the device was actually tested, identifying the measurement procedure and test equipment that was used;

(iv) Contain a description of the equipment under test (EUT) and support equipment connected to, or installed within, the EUT;

(v) Identify the EUT and support equipment by trade name and model number and, if appropriate, by FCC Identifier and serial number;

(vi) Indicate the types and lengths of connecting cables used and how they were arranged or moved during testing;

(vii) Contain at least two drawings or photographs showing the test set-up for the highest line conducted emission and showing the test set-up for the highest radiated emission. These drawings or photographs must show enough detail to confirm other information contained in the test report. Any photographs used must be focused originals without glare or dark spots and must clearly show the test configuration used;

(viii) List all modifications, if any, made to the EUT by the testing company or individual to achieve compliance with the regulations in this chapter;

(ix) Include all of the data required to show compliance with the appropriate regulations in this chapter; and

(x) Contain, on the test report, the signature of the individual responsible for testing the product along with the name and signature of an official of the responsible party, as designated in § 2.909.

(4) For equipment subject to the provisions in part 15 of this chapter, the records shall indicate if the equipment was verified pursuant to the transition provisions contained in § 15.37 of this chapter.

(b) The records listed in paragraph (a) of this section shall be retained for two years after the manufacture of said equipment item has been permanently discontinued, or until the conclusion of an investigation or a proceeding if the manufacturer or importer is officially notified that an investigation or any

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other administrative proceeding involving his equipment has been instituted.

[54 FR 17713, Apr. 25, 1989, as amended at 62 FR 10472, Mar. 7, 1997]

§ 2.956 FCC inspection and submission of equipment for testing.

(a) Each responsible party shall upon receipt of reasonable request:

(1) Submit to the Commission the records required by § 2.955.

(2) Submit one or more sample units for measurements at the Commission's Laboratory.

(i) Shipping costs to the Commission's Laboratory and return shall be borne by the responsible party.

(ii) In the event the responsible party believes that shipment of the sample to the Commission's Laboratory is impractical because of the size or weight of the equipment, or the power requirement, or for any other reason, the responsible party may submit a written explanation why such shipment is impractical and should not be required.

(b) Requests for the submission of the records in § 2.955 or for the submission of sample units are covered under the provisions of § 2.946.

[62 FR 10472, Mar. 7, 1997]

§ 2.960 Designation of Telecommunication Certification Bodies (TCBs).

(a) The Commission may designate Telecommunication Certification Bodies (TCBs) to approve equipment as required under this part. Certification of equipment by a TCB shall be based on an application with all the information specified in this part. The TCB shall process the application to determine whether the product meets the Commission's requirements and shall issue a written grant of equipment authorization. The grant shall identify the TCB and the source of authority for issuing it.

(b) The Federal Communications Commission shall designate TCBs in the United States to approve equipment subject to certification under the Commission's rules. TCBs shall be accredited by the National Institute of Standards and Technology (NIST) under its National Voluntary Conformity Assessment Evaluation

(NVCASE) program, or other recognized programs based on ISO/IEC Guide 65, to comply with the Commission's qualification criteria for TCBs. NIST may, in accordance with its procedures, allow other appropriately qualified accrediting bodies to accredit TCBs and testing laboratories. TCBs shall comply with the requirements in § 2.962 of this part.

(c) In accordance with the terms of an effective bilateral or multilateral mutual recognition agreement or arrangement (MRA) to which the United States is a party, bodies outside the United States shall be permitted to authorize equipment in lieu of the Commission. A body in an MRA partner economy may authorize equipment to U.S. requirements only if that economy permits bodies in the United States to authorize equipment to its requirements. The authority designating these telecommunication certification bodies shall meet the following criteria.

(1) The organization accrediting the prospective telecommunication certification body shall be capable of meeting the requirements and conditions of ISO/IEC Guide 61.

(2) The organization assessing the telecommunication certification body shall appoint a team of qualified experts to perform the assessment covering all of the elements within the scope of accreditation. For assessment of telecommunications equipment, the areas of expertise to be used during the assessment shall include, but not be limited to, electromagnetic compatibility and telecommunications equipment (wired and wireless).

[64 FR 4995, Feb. 2, 1999]

§ 2.962 Requirements for Telecommunication Certification Bodies.

(a) Telecommunication certification bodies (TCBs) designated by the Commission, or designated by another authority pursuant to an effective bilateral or multilateral mutual recognition agreement or arrangement to which the United States is a party, shall comply with the following requirements.

(b) *Certification methodology.* (1) The certification system shall be based on

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type testing as identified in sub-clause 1.2(a) of ISO/IEC Guide 65.

(2) Certification shall normally be based on testing no more than one unmodified representative sample of each product type for which certification is sought. Additional samples may be requested if clearly warranted, such as when certain tests are likely to render a sample inoperative.

(c) *Criteria for Designation.* (1) To be designated as a TCB under this section, an entity shall, by means of accreditation, meet all the appropriate specifications in ISO/IEC Guide 65 for the scope of equipment it will certify. The accreditation shall specify the group of equipment to be certified and the applicable regulations for product evaluation.

(2) The TCB shall demonstrate expert knowledge of the regulations for each product with respect to which the body seeks designation. Such expertise shall include familiarity with all applicable technical regulations, administrative provisions or requirements, as well as the policies and procedures used in the application thereof.

(3) The TCB shall have the technical expertise and capability to test the equipment it will certify and shall also be accredited in accordance with ISO/IEC Guide 25 to demonstrate it is competent to perform such tests.

(4) The TCB shall demonstrate an ability to recognize situations where interpretations of the regulations or test procedures may be necessary. The appropriate key certification and laboratory personnel shall demonstrate a knowledge of how to obtain current and correct technical regulation interpretations. The competence of the telecommunication certification body shall be demonstrated by assessment. The general competence, efficiency, experience, familiarity with technical regulations and products included in those technical regulations, as well as compliance with applicable parts of the ISO/IEC Guides 25 and 65, shall be taken into consideration.

(5) A TCB shall participate in any consultative activities, identified by the Commission or NIST, to facilitate a common understanding and interpretation of applicable regulations.

(6) The Commission will provide public notice of the specific methods that will be used to accredit TCBs, consistent with these qualification criteria.

(d) *Sub-contractors.* (1) In accordance with the provisions of sub-clause 4.4 of ISO/IEC Guide 65, the testing of a product, or a portion thereof, may be performed by a sub-contractor of a designated TCB, provided the laboratory has been assessed by the TCB as competent and in compliance with the applicable provisions of ISO/IEC Guide 65 and other relevant standards and guides.

(2) When a subcontractor is used, the TCB shall be responsible for the test results and shall maintain appropriate oversight of the subcontractor to ensure reliability of the test results. Such oversight shall include periodic audits of products that have been tested.

(e) *Designation of TCBs.* (1) The Commission will designate as a TCB any organization that meets the qualification criteria and is accredited by NIST or its recognized accreditor.

(2) The Commission will withdraw the designation of a TCB if the TCB's accreditation by NIST or its recognized accreditor is withdrawn, if the Commission determines there is just cause for withdrawing the designation, or if the TCB requests that it no longer hold the designation. The Commission will provide a TCB with 30 days notice of its intention to withdraw the designation and provide the TCB with an opportunity to respond.

(3) A list of designated TCBs will be published by the Commission.

(f) *Scope of responsibility.* (1) TCBs shall certify equipment in accordance with the Commission's rules and policies.

(2) A TCB shall accept test data from any source, subject to the requirements in ISO/IEC Guide 65, and shall not unnecessarily repeat tests.

(3) TCBs may establish and assess fees for processing certification applications and other tasks as required by the Commission.

(4) A TCB may rescind a grant of certification within 30 days of grant for administrative errors. After that time, a grant can only be revoked by the

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Commission through the procedures in § 2.939 of this part. A TCB shall notify both the applicant and the Commission when a grant is rescinded.

(5) A TCB may not:

(i) Grant a waiver of the rules, or certify equipment for which the Commission rules or requirements do not exist or for which the application of the rules or requirements is unclear.

(ii) Take enforcement actions; or

(iii) Authorize a transfer of control of a grantee.

(6) All TCB actions are subject to Commission review.

(g) *Post-certification requirements.* (1) A TCB shall supply an electronic copy of each approved application form and grant of certification to the Commission.

(2) In accordance with ISO/IEC Guide 65, a TCB is required to conduct appropriate post-market surveillance activities. These activities shall be based on type testing a few samples of the total number of product types which the certification body has certified. Other types of surveillance activities of a product that has been certified are permitted, provided they are no more onerous than testing type. The Commission may at any time request a list of products certified by the certification body and may request and receive copies of product evaluation reports. The Commission may also request that a TCB perform post-market surveillance, under Commission guidelines, of a specific product it has certified.

(3) If during post market surveillance of a certified product, a certification body determines that a product fails to comply with the applicable technical regulations, the certification body shall immediately notify the grantee and the Commission. A follow-up report shall also be provided within thirty days of the action taken by the grantee to correct the situation.

(4) Where concerns arise, the TCB shall provide a copy of the application file to the Commission within 30 calendar days of a request for the file made by the Commission to the TCB and the manufacturer. Where appropriate, the file should be accompanied by a request for confidentiality for any material that may qualify for confidential treatment under the Commission's

Rules. If the application file is not provided within 30 calendar days, a statement shall be provided to the Commission as to why it cannot be provided.

(h) In case of a dispute with respect to designation or recognition of a TCB and the testing or certification of products by a TCB, the Commission will be the final arbiter. Manufacturers and designated TCBs will be afforded at least 30 days to comment before a decision is reached. In the case of a TCB designated or recognized, or a product certified pursuant to an effective bilateral or multilateral mutual recognition agreement or arrangement (MRA) to which the United States is a party, the Commission may limit or withdraw its recognition of a TCB designated by an MRA party and revoke the certification of products using testing or certification provided by such a TCB. The Commission shall consult with the Office of the United States Trade Representative (USTR), as necessary, concerning any disputes arising under an MRA for compliance with the Telecommunications Trade Act of 1988 (Section 1371–1382 of the Omnibus Trade and Competitiveness Act of 1988).

[64 FR 4995, Feb. 2, 1999, as amended at 66 FR 27601, May 18, 2001]

CERTIFICATION**§ 2.1031 Cross reference.**

The general provisions of this subpart § 2.901 *et seq.* shall apply to applications for and grants of certification.

§ 2.1033 Application for certification.

(a) An application for certification shall be filed on FCC Form 731 with all questions answered. Items that do not apply shall be so noted.

(b) Applications for equipment operating under Parts 11, 15 and 18 of the rules shall be accompanied by a technical report containing the following information:

(1) The full name and mailing address of the manufacturer of the device and the applicant for certification.

(2) FCC identifier.

(3) A copy of the installation and operating instructions to be furnished the user. A draft copy of the instructions

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may be submitted if the actual document is not available. The actual document shall be furnished to the FCC when it becomes available.

(4) A brief description of the circuit functions of the device along with a statement describing how the device operates. This statement should contain a description of the ground system and antenna, if any, used with the device.

(5) A block diagram showing the frequency of all oscillators in the device. The signal path and frequency shall be indicated at each block. The tuning range(s) and intermediate frequency(ies) shall be indicated at each block. A schematic diagram is also required for intentional radiators.

(6) A report of measurements showing compliance with the pertinent FCC technical requirements. This report shall identify the test procedure used (e.g., specify the FCC test procedure, or industry test procedure that was used), the date the measurements were made, the location where the measurements were made, and the device that was tested (model and serial number, if available). The report shall include sample calculations showing how the measurement results were converted for comparison with the technical requirements.

(7) A sufficient number of photographs to clearly show the exterior appearance, the construction, the component placement on the chassis, and the chassis assembly. The exterior views shall show the overall appearance, the antenna used with the device (if any), the controls available to the user, and the required identification label in sufficient detail so that the name and FCC identifier can be read. In lieu of a photograph of the label, a sample label (or facsimile thereof) may be submitted together with a sketch showing where this label will be placed on the equipment. Photographs shall be of size A4 (21 cm × 29.7 cm) or 8×10 inches (20.3 cm × 25.4 cm). Smaller photographs may be submitted provided they are sharp and clear, show the necessary detail, and are mounted on A4 (21 cm × 29.7 cm) or 8.5×11 inch (21.6 cm × 27.9 cm) paper. A sample label or facsimile together with the sketch showing the placement of

this label shall be on the same size paper.

(8) If the equipment for which certification is being sought must be tested with peripheral or accessory devices connected or installed, a brief description of those peripherals or accessories. The peripheral or accessory devices shall be unmodified, commercially available equipment.

(9) For equipment subject to the provisions of part 15 of this chapter, the application shall indicate if the equipment is being authorized pursuant to the transition provisions in § 15.37 of this chapter.

(10) Applications for the certification of scanning receivers shall include a statement describing the methods used to comply with the design requirements of all parts of § 15.121 of this chapter. The application must specifically include a statement assessing the vulnerability of the equipment to possible modification and describing the design features that prevent the modification of the equipment by the user to receive transmissions from the Cellular Radiotelephone Service. The application must also demonstrate compliance with the signal rejection requirement of § 15.121 of this chapter, including details on the measurement procedures used to demonstrate compliance.

(11) Applications for certification of transmitters operating within the 59.0–64.0 GHz band under part 15 of this chapter shall also be accompanied by an exhibit demonstrating compliance with the provisions of § 15.255 (g) and (i) of this chapter.

(c) Applications for equipment other than that operating under parts 15 and 18 of the rules shall be accompanied by a technical report containing the following information:

(1) The full name and mailing address of the manufacturer of the device and the applicant for certification.

(2) FCC identifier.

(3) A copy of the installation and operating instructions to be furnished the user. A draft copy of the instructions may be submitted if the actual document is not available. The actual document shall be furnished to the FCC when it becomes available.

(4) Type or types of emission.

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(5) Frequency range.

(6) Range of operating power values or specific operating power levels, and description of any means provided for variation of operating power.

(7) Maximum power rating as defined in the applicable part(s) of the rules.

(8) The dc voltages applied to and dc currents into the several elements of the final radio frequency amplifying device for normal operation over the power range.

(9) Tune-up procedure over the power range, or at specific operating power levels.

(10) A schematic diagram and a description of all circuitry and devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation, and for limiting power.

(11) A photograph or drawing of the equipment identification plate or label showing the information to be placed thereon.

(12) Photographs (8"×10") of the equipment of sufficient clarity to reveal equipment construction and layout, including meters, if any, and labels for controls and meters and sufficient views of the internal construction to define component placement and chassis assembly. Insofar as these requirements are met by photographs or drawings contained in instruction manuals supplied with the certification request, additional photographs are necessary only to complete the required showing.

(13) For equipment employing digital modulation techniques, a detailed description of the modulation system to be used, including the response characteristics (frequency, phase and amplitude) of any filters provided, and a description of the modulating wavetrain, shall be submitted for the maximum rated conditions under which the equipment will be operated.

(14) The data required by §§ 2.1046 through 2.1057, inclusive, measured in accordance with the procedures set out in § 2.1041.

(15) The application for certification of an external radio frequency power amplifier under part 97 of this chapter need not be accompanied by the data required by paragraph (b)(14) of this section. In lieu thereof, measurements shall be submitted to show compliance

with the technical specifications in subpart C of part 97 of this chapter and such information as required by § 2.1060 of this part.

(16) An application for certification of an AM broadcast stereophonic exciter-generator intended for interfacing with existing certified, or formerly type accepted or notified transmitters must include measurements made on a complete stereophonic transmitter. The instruction book must include complete specifications and circuit requirements for interconnecting with existing transmitters. The instruction book must also provide a full description of the equipment and measurement procedures to monitor modulation and to verify that the combination of stereo exciter-generator and transmitter meet the emission limitations of § 73.44.

(17) A single application may be filed for a composite system that incorporates devices subject to certification under multiple rule parts, however, the appropriate fee must be included for each device. Separate applications must be filed if different FCC Identifiers will be used for each device.

[63 FR 36599, July 7, 1998, as amended at 63 FR 42278, Aug. 7, 1998; 64 FR 22561, Apr. 27, 1999; 67 FR 42734, June 25, 2002]

§ 2.1035 [Reserved]**§ 2.1041 Measurement procedure.**

For equipment operating under parts 15 and 18, the measurement procedures are specified in the rules governing the particular device for which certification is requested. For equipment operating in the authorized radio services, measurements are required as specified in §§ 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057. See also § 2.947.

[63 FR 36600, July 7, 1998]

§ 2.1043 Changes in certificated equipment.

(a) Except as provided in paragraph (b)(3) of this section, changes to the basic frequency determining and stabilizing circuitry (including clock or data rates), frequency multiplication stages, basic modulator circuit or maximum power or field strength ratings

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shall not be performed without application for and authorization of a new grant of certification. Variations in electrical or mechanical construction, other than these indicated items, are permitted provided the variations either do not affect the characteristics required to be reported to the Commission or the variations are made in compliance with the other provisions of this section. Changes to the software installed in a transmitter that do not affect the radio frequency emissions do not require a filing with the Commission and may be made by parties other than the holder of the grant of certification.

(b) Three classes of permissive changes may be made in certificated equipment without requiring a new application for and grant of certification. None of the classes of changes shall result in a change in identification.

(1) A Class I permissive change includes those modifications in the equipment which do not degrade the characteristics reported by the manufacturer and accepted by the Commission when certification is granted. No filing with the Commission is required for a Class I permissive change.

(2) A Class II permissive change includes those modifications which degrade the performance characteristics as reported to the Commission at the time of the initial certification. Such degraded performance must still meet the minimum requirements of the applicable rules. When a Class II permissive change is made by the grantee, the grantee shall supply the Commission with complete information and the results of tests of the characteristics affected by such change. The modified equipment shall not be marketed under the existing grant of certification prior to acknowledgement by the Commission that the change is acceptable.

(3) A Class III permissive change includes modifications to the software of a software defined radio transmitter that change the frequency, modulation type, output power or maximum field strength outside the parameters previously approved. When a Class III permissive change is made, the grantee shall supply the Commission with a description of the changes and test results showing that the equipment com-

plies with the applicable rules with the new software loaded, including compliance with the applicable RF exposure requirements. The modified software shall not be loaded into equipment, and the equipment shall not be marketed with the modified software under the existing grant of certification, prior to acknowledgement by the Commission that the change is acceptable. A copy of the software shall be submitted to the Commission upon request. Class III changes are permitted only for equipment in which no Class II changes have been made from the originally approved device.

NOTE TO PARAGRAPH (b)(3): Any software change that degrades spurious and out-of-band emissions previously reported to the Commission at the time of initial certification would be considered a change in frequency or modulation and would require a Class III permissive change or new equipment authorization application.

(4) Class I and Class II permissive changes may only be made by the holder of the grant of certification, except as specified below.

(c) A grantee desiring to make a change other than a permissive change shall file an application on FCC Form 731 accompanied by the required fees. The grantee shall attach a description of the change(s) to be made and a statement indicating whether the change(s) will be made in all units (including previous production) or will be made only in those units produced after the change is authorized.

(d) A modification which results in a change in the identification of a device with or without change in circuitry requires a new application for, and grant of certification. If the changes affect the characteristics required to be reported, a complete application shall be filed. If the characteristics required to be reported are not changed the abbreviated procedure of § 2.933 may be used.

(e) Equipment that has been certified or formerly type accepted for use in the Amateur Radio Service pursuant to the requirements of part 97 of this chapter may be modified without regard to the conditions specified in paragraph (b) of this section, provided the following conditions are met:

(1) Any person performing such modifications on equipment used under part 97 of this chapter must possess a valid

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amateur radio operator license of the class required for the use of the equipment being modified.

(2) Modifications made pursuant to this paragraph are limited to equipment used at licensed amateur radio stations.

(3) Modifications specified or performed by equipment manufacturers or suppliers must be in accordance with the requirements set forth in paragraph (b) of this section.

(4) Modifications specified or performed by licensees in the Amateur Radio Service on equipment other than that at specific licensed amateur radio stations must be in accordance with the requirements set forth in paragraph (b) of this section.

(5) The station licensee shall be responsible for ensuring that modified equipment used at his station will comply with the applicable technical standards in part 97 of this chapter.

(f) For equipment other than that operating under parts 15 or 18, when a Class II permissive change is made by other than the grantee of certification, the information and data specified in paragraph (b)(2) of this section shall be supplied by the person making the change. The modified equipment shall not be operated under an authorization of the Commission prior to acknowledgement by the Commission that the change is acceptable.

(g) The interconnection of a certificated or formerly type accepted AM broadcast stereophonic exciter-generator with a certificated or formerly type accepted AM broadcast transmitter in accordance with the manufacturer's instructions and upon completion of measurements showing that the modified transmitter meets the emission limitation requirements of §73.44 is defined as a Class I permissive change for compliance with this section.

(h) The interconnection of a multiplexing exciter with a certificated or formerly type accepted AM broadcast transmitter in accordance with the manufacturer's instructions without electrical or mechanical modification of the transmitter circuits and completion of equipment performance measurements showing the transmitter meets the minimum performance re-

quirements applicable thereto is defined as a Class I permissive change for compliance with this section.

(i) The addition of TV broadcast subcarrier generators to a certificated or formerly type accepted TV broadcast transmitter or the addition of FM broadcast subcarrier generators to a type accepted FM broadcast transmitter, provided the transmitter exciter is designed for subcarrier operation without mechanical or electrical alterations to the exciter or other transmitter circuits.

(j) The addition of TV broadcast stereophonic generators to a certificated or formerly type accepted TV broadcast transmitter or the addition of FM broadcast stereophonic generators to a certificated or formerly type accepted FM broadcast transmitter, provided the transmitter exciter is designed for stereophonic sound operation without mechanical or electrical alterations to the exciter or other transmitter circuits.

(k) The addition of subscription TV encoding equipment for which the FCC has granted advance approval under the provisions of §2.1400 in subpart M and §73.644(c) of part 73 to a certificated or formerly type accepted transmitter is considered a Class I permissive change.

(l) Notwithstanding the provisions of this section, broadcast licensees or permittees are permitted to modify certificated or formerly type accepted equipment pursuant to §73.1690 of the FCC's rules.

[63 FR 36600, July 7, 1998, as amended at 66 FR 50840, Oct. 5, 2001]

§ 2.1046 Measurements required: RF power output.

(a) For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in §2.1033(c)(8). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

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(b) For single sideband, independent sideband, and single channel, controlled carrier radiotelephone transmitters the procedure specified in paragraph (a) of this section shall be employed and, in addition, the transmitter shall be modulated during the test as follows. In all tests, the input level of the modulating signal shall be such as to develop rated peak envelope power or carrier power, as appropriate, for the transmitter.

(1) Single sideband transmitters in the A3A or A3J emission modes—by two tones at frequencies of 400 Hz and 1800 Hz (for 3.0 kHz authorized bandwidth), or 500 Hz and 2100 Hz (3.5 kHz authorized bandwidth), or 500 Hz and 2400 Hz (for 4.0 kHz authorized bandwidth), applied simultaneously, the input levels of the tones so adjusted that the two principal frequency components of the radio frequency signal produced are equal in magnitude.

(2) Single sideband transmitters in the A3H emission mode—by one tone at a frequency of 1500 Hz (for 3.0 kHz authorized bandwidth), or 1700 Hz (for 3.5 kHz authorized bandwidth), or 1900 Hz (for 4.0 kHz authorized bandwidth), the level of which is adjusted to produce a radio frequency signal component equal in magnitude to the magnitude of the carrier in this mode.

(3) As an alternative to paragraphs (b) (1) and (2) of this section other tones besides those specified may be used as modulating frequencies, upon a sufficient showing of need. However, any tones so chosen must not be harmonically related, the third and fifth order intermodulation products which occur must fall within the -25 dB step of the emission bandwidth limitation curve, the seventh and ninth order intermodulation product must fall within the 35 dB step of the referenced curve and the eleventh and all higher order products must fall beyond the -35 dB step of the referenced curve.

(4) Independent sideband transmitters having two channels by 1700 Hz tones applied simultaneously in both channels, the input levels of the tones so adjusted that the two principal frequency components of the radio frequency signal produced are equal in magnitude.

(5) Independent sideband transmitters having more than two channels by an appropriate signal or signals applied to all channels simultaneously. The input signal or signals shall simulate the input signals specified by the manufacturer for normal operation.

(6) Single-channel controlled-carrier transmitters in the A3 emission mode—by a 2500 Hz tone.

(c) For measurements conducted pursuant to paragraphs (a) and (b) of this section, all calculations and methods used by the applicant for determining carrier power or peak envelope power, as appropriate, on the basis of measured power in the radio frequency load attached to the transmitter output terminals shall be shown. Under the test conditions specified, no components of the emission spectrum shall exceed the limits specified in the applicable rule parts as necessary for meeting occupied bandwidth or emission limitations.

[39 FR 5919, Feb. 15, 1974. Redesignated and amended at 63 FR 36599, July 7, 1998]

§ 2.1047 Measurements required: Modulation characteristics.

(a) *Voice modulated communication equipment.* A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be submitted. For equipment required to have an audio low-pass filter, a curve showing the frequency response of the filter, or of all circuitry installed between the modulation limiter and the modulated stage shall be submitted.

(b) *Equipment which employs modulation limiting.* A curve or family of curves showing the percentage of modulation versus the modulation input voltage shall be supplied. The information submitted shall be sufficient to show modulation limiting capability throughout the range of modulating frequencies and input modulating signal levels employed.

(c) *Single sideband and independent sideband radiotelephone transmitters which employ a device or circuit to limit peak envelope power.* A curve showing the peak envelope power output versus the modulation input voltage shall be supplied. The modulating signals shall be the same in frequency as specified in

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paragraph (c) of § 2.1049 for the occupied bandwidth tests.

(d) *Other types of equipment.* A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licensed.

[39 FR 5919, Feb. 15, 1974. Redesignated and amended at 63 FR 36599, July 7, 1998]

§ 2.1049 Measurements required: Occupied bandwidth.

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the following conditions as applicable:

(a) Radiotelegraph transmitters for manual operation when keyed at 16 dots per second.

(b) Other keyed transmitters—when keyed at the maximum machine speed.

(c) Radiotelephone transmitters equipped with a device to limit modulation or peak envelope power shall be modulated as follows. For single sideband and independent sideband transmitters, the input level of the modulating signal shall be 10 dB greater than that necessary to produce rated peak envelope power.

(1) Other than single sideband or independent sideband transmitters—when modulated by a 2500 Hz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation. The input level shall be established at the frequency of maximum response of the audio modulating circuit.

(2) Single sideband transmitters in A3A or A3J emission modes—when modulated by two tones at frequencies of 400 Hz and 1800 Hz (for 3.0 kHz authorized bandwidth), or 500 Hz and 2100 Hz (for 3.5 kHz authorized bandwidth), or 500 Hz and 2400 Hz (for 4.0 kHz authorized bandwidth), applied simultaneously. The input levels of the tones shall be so adjusted that the two principal frequency components of the radio frequency signal produced are equal in magnitude.

(3) Single sideband transmitters in the A3H emission mode—when modulated by one tone at a frequency of 1500 Hz (for 3.0 kHz authorized bandwidth),

or 1700 Hz (for 3.5 kHz authorized bandwidth), or 1900 Hz (for 4.0 kHz authorized bandwidth), the level of which is adjusted to produce a radio frequency signal component equal in magnitude to the magnitude of the carrier in this mode.

(4) As an alternative to paragraphs (c) (2) and (3) of this section, other tones besides those specified may be used as modulating frequencies, upon a sufficient showing of need. However, any tones so chosen must not be harmonically related, the third and fifth order intermodulation products which occur must fall within the -25 dB step of the emission bandwidth limitation curve, the seventh and ninth order products must fall within the -35 dB step of the referenced curve and the eleventh and all higher order products must fall beyond the -35 dB step of the referenced curve.

(5) Independent sideband transmitters having two channels—when modulated by 1700 Hz tones applied simultaneously to both channels. The input levels of the tones shall be so adjusted that the two principal frequency components of the radio frequency signal produced are equal in magnitude.

(d) Radiotelephone transmitters without a device to limit modulation or peak envelope power shall be modulated as follows. For single sideband and independent sideband transmitters, the input level of the modulating signal should be that necessary to produce rated peak envelope power.

(1) Other than single sideband or independent sideband transmitters—when modulated by a 2500 Hz tone of sufficient level to produce at least 85 percent modulation. If 85 percent modulation is unattainable, the highest percentage modulation shall be used.

(2) Single sideband transmitters in A3A or A3J emission modes—when modulated by two tones at frequencies of 400 Hz and 1800 Hz (for 3.0 kHz authorized bandwidth), or 500 Hz and 2100 Hz (for 3.5 kHz authorized bandwidth), or 500 Hz and 2400 Hz (for 4.0 kHz authorized bandwidth), applied simultaneously. The input levels of the tones shall be so adjusted that the two principal frequency components of the radio frequency signal produced are equal in magnitude.

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(3) Single sideband transmitters in the A3H emission mode—when modulated by one tone at a frequency of 1500 Hz (for 3.0 kHz authorized bandwidth), or 1700 Hz (for 3.5 kHz authorized bandwidth), or 1900 Hz (for 4.0 kHz authorized bandwidth), the level of which is adjusted to produce a radio frequency signal component equal in magnitude to the magnitude of the carrier in this mode.

(4) As an alternative to paragraphs (d) (2) and (3) of this section, other tones besides those specified may be used as modulating frequencies, upon a sufficient showing of need. However any tones so chosen must not be harmonically related, the third and fifth order intermodulation products which occur must fall within the -25 dB step of the emission bandwidth limitation curve, the seventh and ninth order products must fall within the -35 dB step of the referenced curve and the eleventh and all higher order products must fall beyond the -35 dB step of the referenced curve.

(5) Independent sideband transmitters having two channels—when modulated by 1700 Hz tones applied simultaneously to both channels. The input levels of the tones shall be so adjusted that the two principal frequency components of the radio frequency signal produced are equal in magnitude.

(e) Transmitters for use in the Radio Broadcast Services:

(1) AM broadcast transmitters for monaural operation—when amplitude modulated 85% by a 7,500 Hz input signal.

(2) AM broadcast stereophonic operation—when the transmitter operated under any stereophonic modulation condition not exceeding 100% on negative peaks and tested under the conditions specified in §73.128 in part 73 of the FCC rules for AM broadcast stations.

(3) FM broadcast transmitter not used for multiplex operation—when modulated 85 percent by a 15 kHz input signal.

(4) FM broadcast transmitters for multiplex operation under Subsidiary Communication Authorization (SCA)—when carrier is modulated 70 percent by a 15 kHz main channel input signal, and modulated an additional 15 percent

simultaneously by a 67 kHz subcarrier (unmodulated).

(5) FM broadcast transmitter for stereophonic operation—when modulated by a 15 kHz input signal to the main channel, a 15 kHz input signal to the stereophonic subchannel, and the pilot subcarrier simultaneously. The input signals to the main channel and stereophonic subchannel each shall produce 38 percent modulation of the carrier. The pilot subcarrier should produce 9 percent modulation of the carrier.

(6) Television broadcast monaural transmitters—when modulated 85% by a 15 kHz input signal.

(7) Television broadcast stereophonic sound transmitters—when the transmitter is modulated with a 15 kHz input signal to the main channel and the stereophonic subchannel, any pilot subcarrier(s) and any unmodulated auxiliary subcarrier(s) which may be provided. The signals to the main channel and the stereophonic subchannel must be representative of the system being tested and when combined with any pilot subcarrier(s) or other auxiliary subcarriers shall result in 85% deviation of the maximum specified aural carrier deviation.

(f) Transmitters for which peak frequency deviation (D) is determined in accordance with §2.202(f), and in which the modulating baseband comprises more than 3 independent speech channels—when modulated by a test signal determined in accordance with the following:

(1) A modulation reference level is established for the characteristic baseband frequency. (Modulation reference level is defined as the average power level of a sinusoidal test signal delivered to the modulator input which provides the specified value of per-channel deviation.)

(2) Modulation reference level being established, the total rms deviation of the transmitter is measured when a test signal consisting of a band of random noise extending from below 20 kHz to the highest frequency in the baseband, is applied to the modulator input through any preemphasis networks used in normal service. The average power level of the test signal shall exceed the modulation reference

level by the number of decibels determined using the appropriate formula in the following table:

Number of message circuits that modulate the transmitter	Number of dB by which the average power (P_{avg}) level test signal shall exceed the modulation reference level	Limits of P_{avg} (dBm0)
More than 3, but less than 12	To be specified by the equipment manufacturer subject to FCC approval.	
At least 12, but less than 60	$X+2 \log_{10} N_c$	X: -2 to +2.6
At least 60, but less than 240	$X+4 \log_{10} N_c$	X: -5.6 to -1.0
240 or more	$X+10 \log_{10} N_c$	X: -19.6 to -15.0

Where X represents the average power in a message circuit in dBm0; N_c is the number of circuits in the multiplexed message load. P_{avg} shall be selected by the transmitter manufacturer and included with the technical data submitted with the application for type acceptance. (See § 2.202(e) in this chapter.)

(g) Transmitters in which the modulating baseband comprises not more than three independent channels—when modulated by the full complement of signals for which the transmitter is rated. The level of modulation for each channel should be set to that prescribed in rule parts applicable to the services for which the transmitter is intended. If specific modulation levels are not set forth in the rules, the tests should provide the manufacturer's maximum rated condition.

(h) Transmitters employing digital modulation techniques—when modulated by an input signal such that its amplitude and symbol rate represent the maximum rated conditions under which the equipment will be operated. The signal shall be applied through any filter networks, pseudo-random generators or other devices required in normal service. Additionally, the occupied bandwidth shall be shown for operation with any devices used for modifying the spectrum when such devices are optional at the discretion of the user.

(i) Transmitters designed for other types of modulation—when modulated by an appropriate signal of sufficient amplitude to be representative of the type of service in which used. A description of the input signal should be supplied.

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083; 47 U.S.C. 154, 303, 307)

[39 FR 5919, Feb. 15, 1974, as amended at 39 FR 35664, Oct. 3, 1974; 47 FR 13164, Mar. 29, 1982; 48 FR 16493, Apr. 18, 1983; 49 FR 18105, Apr. 27, 1984. Redesignated at 63 FR 36599, July 7, 1998]

§ 2.1051 Measurements required: Spurious emissions at antenna terminals.

The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in § 2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.

[39 FR 5919, Feb. 15, 1974. Redesignated and amended at 63 FR 36599, July 7, 1998]

§ 2.1053 Measurements required: Field strength of spurious radiation.

(a) Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission. For this test, single sideband, independent sideband, and controlled carrier transmitters shall be modulated under the conditions specified in paragraph (c) of § 2.1049, as appropriate. For equipment operating on frequencies below 890 MHz, an open field test is normally required, with the measuring instrument antenna located in the far-field at all test frequencies. In the event it is either impractical or impossible to make open

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field measurements (e.g. a broadcast transmitter installed in a building) measurements will be accepted of the equipment as installed. Such measurements must be accompanied by a description of the site where the measurements were made showing the location of any possible source of reflections which might distort the field strength measurements. Information submitted shall include the relative radiated power of each spurious emission with reference to the rated power output of the transmitter, assuming all emissions are radiated from halfwave dipole antennas.

(b) The measurements specified in paragraph (a) of this section shall be made for the following equipment:

(1) Those in which the spurious emissions are required to be 60 dB or more below the mean power of the transmitter.

(2) All equipment operating on frequencies higher than 25 MHz.

(3) All equipment where the antenna is an integral part of, and attached directly to the transmitter.

(4) Other types of equipment as required, when deemed necessary by the Commission.

[39 FR 5919, Feb. 15, 1974. Redesignated and amended at 63 FR 36599, July 7, 1998]

§ 2.1055 Measurements required: Frequency stability.

(a) The frequency stability shall be measured with variation of ambient temperature as follows:

(1) From -30° to $+50^{\circ}$ centigrade for all equipment except that specified in paragraphs (a) (2) and (3) of this section.

(2) From -20° to $+50^{\circ}$ centigrade for equipment to be licensed for use in the Maritime Services under part 80 of this chapter, except for Class A, B, and S Emergency Position Indicating Radiobeacons (EPIRBS), and equipment to be licensed for use above 952 MHz at operational fixed stations in all services, stations in the Local Television Transmission Service and Point-to-Point Microwave Radio Service under part 21 of this chapter, and equipment licensed for use aboard aircraft in the Aviation Services under part 87 of this chapter.

(3) From 0° to $+50^{\circ}$ centigrade for equipment to be licensed for use in the Radio Broadcast Services under part 73 of this chapter.

(b) Frequency measurements shall be made at the extremes of the specified temperature range and at intervals of not more than 10° centigrade through the range. A period of time sufficient to stabilize all of the components of the oscillator circuit at each temperature level shall be allowed prior to frequency measurement. The short term transient effects on the frequency of the transmitter due to keying (except for broadcast transmitters) and any heating element cycling normally occurring at each ambient temperature level also shall be shown. Only the portion or portions of the transmitter containing the frequency determining and stabilizing circuitry need be subjected to the temperature variation test.

(c) In addition to all other requirements of this section, the following information is required for equipment incorporating heater type crystal oscillators to be used in mobile stations, for which type acceptance is first requested after March 25, 1974, except for battery powered, hand carried, portable equipment having less than 3 watts mean output power.

(1) Measurement data showing variation in transmitter output frequency from a cold start and the elapsed time necessary for the frequency to stabilize within the applicable tolerance. Tests shall be made after temperature stabilization at each of the ambient temperature levels; the lower temperature limit, 0° centigrade and $+30^{\circ}$ centigrade with no primary power applied.

(2) Beginning at each temperature level specified in paragraph (c)(1) of this section, the frequency shall be measured within one minute after application of primary power to the transmitter and at intervals of no more than one minute thereafter until ten minutes have elapsed or until sufficient measurements are obtained to indicate clearly that the frequency has stabilized within the applicable tolerance, whichever time period is greater. During each test, the ambient temperature shall not be allowed to rise more

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than 10° centigrade above the respective beginning ambient temperature level.

(3) The elapsed time necessary for the frequency to stabilize within the applicable tolerance from each beginning ambient temperature level as determined from the tests specified in this paragraph shall be specified in the instruction book for the transmitter furnished to the user.

(4) When it is impracticable to subject the complete transmitter to this test because of its physical dimensions or power rating, only its frequency determining and stabilizing portions need be tested.

(d) The frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.

(3) The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided. Effects on frequency of transmitter keying (except for broadcast transmitters) and any heating element cycling at the nominal supply voltage and at each extreme also shall be shown.

(e) When deemed necessary, the Commission may require tests of frequency stability under conditions in addition to those specifically set out in paragraphs (a), (b), (c), and (d) of this section. (For example measurements showing the effect of proximity to large metal objects, or of various types of antennas, may be required for portable equipment.)

[39 FR 5919, Feb. 14, 1974, as amended at 51 FR 31304, Sept. 2, 1986; 56 FR 11682, Mar. 20, 1991. Redesignated at 63 FR 36599, July 7, 1998.]

§ 2.1057 Frequency spectrum to be investigated.

(a) In all of the measurements set forth in §§ 2.1051 and 2.1053, the spectrum shall be investigated from the

lowest radio frequency signal generated in the equipment, without going below 9 kHz, up to at least the frequency shown below:

(1) If the equipment operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

(2) If the equipment operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

(3) If the equipment operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower.

(b) Particular attention should be paid to harmonics and subharmonics of the carrier frequency as well as to those frequencies removed from the carrier by multiples of the oscillator frequency. Radiation at the frequencies of multiplier stages should also be checked.

(c) The amplitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be reported.

(d) Unless otherwise specified, measurements above 40 GHz shall be performed using a minimum resolution bandwidth of 1 MHz.

[61 FR 14502, Apr. 2, 1996. Redesignated and amended at 63 FR 36599, July 7, 1998]

§ 2.1060 Equipment for use in the amateur radio service.

(a) The general provisions of §§ 2.925, 2.1031, 2.1033, 2.1041, 2.1043, 2.1051, 2.1053 and 2.1057 shall apply to applications for, and grants of, certification for equipment operated under the requirements of part 97 of this chapter, the Amateur Radio Service.

(b) When performing the tests specified in §§ 2.1051 and 2.1053 of this part, the center of the transmitted bandwidth shall be within the operating frequency band by an amount equal to 50 percent of the bandwidth utilized for the tests. In addition, said tests shall be made on at least one frequency in each of the bands within which the equipment is capable of tuning.

(c) Any supplier of an external radio frequency power amplifier kit as defined by § 97.3(a)(17) of this chapter

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shall comply with the following requirements:

(1) Assembly of one unit of a specific type shall be made in exact accordance with the instructions being supplied with the product being marketed. If all of the necessary components are not normally furnished with the kit, assembly shall be made using the recommended components.

(2) The measurement data required for certification shall be obtained for this unit and submitted with the certification application. Unless otherwise requested, it is not necessary to submit this unit with the application.

(3) A copy of the exact instructions which will be provided for assembly of the equipment shall be provided in addition to other material required by § 2.1033 of this part.

(4) The identification label required by § 2.925 of this part shall be permanently affixed to the assembled unit and shall be of sufficient size so as to be easily read. The following information shall be shown on the label:

(Name of Grantee of Certification)

FCC ID: (The number assigned to the equipment by the grantor)

This amplifier can be expected to comply with part 97 of the FCC Regulations when assembled and aligned in strict accordance with the instruction manual using components with the kit or an exact equivalent thereof.

(Title and signature of responsible representative of Grantee)

Statement of Compliance

I state that I have constructed this equipment in accordance with the instruction manual and using the parts furnished by the supplier of this kit.

(Signature)

(Date)

(Amateur call sign) (Class of license)

(Expiration date of license)

(To be signed by the person responsible for proper assembly of kit.)

(5) If requested, an unassembled unit shall be provided for assembly and test by the Commission. Shipping charges to and from the Commission's Laboratory shall be borne by the applicant.

(d) Certification of external radio frequency power amplifiers and amplifier kits may be denied when denial serves the public interest, convenience and necessity by preventing the use of

these amplifiers in services other than the Amateur Radio Service. Other uses of these amplifiers, such as in the Citizens Band Radio Service, are prohibited (§ 95.411 of this chapter). Examples of features which may result in the denial of certification are contained in § 97.317 of this chapter.

[63 FR 36601, July 7, 1998]

FILING FOR APPLICATION REFERENCE**§ 2.1061 Submission of technical information for application reference.**

An application for station authorization in some services requires a detailed technical description of the equipment proposed to be used. In order to simplify the preparation and processing of applications by eliminating the need for the submission of equipment specifications with each application, the Commission will accept for application reference purposes detailed technical specifications of equipment designed for use in these services. Manufacturers desiring to avail themselves of this procedure should submit all information required by the application form and the rules for the services in which the equipment is to be used. An application for a station authorization submitted subsequent to such filing may refer to the technical information so filed.

§ 2.1063 Disclaimer re technical information filed for application reference.

Receipt by the Commission of data for application purposes does not imply that the Commission has made or intends to make any finding regarding the acceptability of the equipment for licensing and such equipment will not be included on the list of equipment acceptable for licensing. Each applicant is expected to exercise appropriate care in the selection of equipment to insure that the unit selected will comply with the rules governing the service in which it is proposed to operate.

§ 2.1065 Identification and changes in equipment information filed for application reference.

(a) Each type of equipment, for which information is filed for application reference purposes, shall be identified by

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a type number assigned by the manufacturer of the equipment. The type number shall consist of a series of Arabic numerals or capital letters or a combination thereof, and may include punctuation marks and spaces. The total of Arabic numerals, capital letters, punctuation marks and spaces in any assigned type number shall not exceed 17. The type number shall be shown on an identification plate or label affixed in a conspicuous place to such equipment.

(b) If the assignment of a different type number is required as a result of equipment modification, a new identification plate or label bearing the new type number shall be affixed to the modified equipment.

NOTE: It is recommended that such equipment be identified with a nameplate pursuant to § 2.925, except for deletion of the FCC Identifier, which will not be assigned to nor listed for such equipment.

(Secs. 4, 303, 48 Stat., as amended, 1066, 1082, sec. 302, 82 Stat., 290 (47 U.S.C. 154, 302, 303))

[39 FR 28160, Aug. 5, 1974, as amended at 44 FR 17180, Mar. 21, 1979]

DECLARATION OF CONFORMITY**§ 2.1071 Cross reference.**

The general provisions of this subpart, shall apply to equipment subject to a Declaration of Conformity.

[61 FR 31046, June 19, 1996]

§ 2.1072 Limitation on Declaration of Conformity.

(a) The Declaration of Conformity signifies that the responsible party, as defined in § 2.909, has determined that the equipment has been shown to comply with the applicable technical standards if no unauthorized change is made in the equipment and if the equipment is properly maintained and operated. Compliance with these standards shall not be construed to be a finding by the responsible party with respect to matters not encompassed by the Commission's rules.

(b) A Declaration of Conformity by the responsible party is effective until a termination date is otherwise established by the Commission.

(c) No person shall, in any advertising matter, brochure, etc., use or

make reference to a Declaration of Conformity in a deceptive or misleading manner or convey the impression that such a Declaration of Conformity reflects more than a determination by the responsible party that the device or product has been shown to be capable of complying with the applicable technical standards of the Commission's rules.

[61 FR 31046, June 19, 1996]

§ 2.1073 Responsibilities.

(a) The responsible party, as defined in § 2.909, must warrant that each unit of equipment marketed under a Declaration of Conformity is identical to the unit tested and found acceptable with the standards and that the records maintained by the responsible party continue to reflect the equipment being produced under the Declaration of Conformity within the variation that can be expected due to quantity production and testing on a statistical basis.

(b) The responsible party, if different from the manufacturer, may upon receiving a written statement from the manufacturer that the equipment complies with the appropriate technical standards rely on the manufacturer or independent testing agency to determine compliance. However, the test records required by § 2.1075 shall be in the English language and shall be made available to the Commission upon a reasonable request in accordance with the provisions of § 2.1076.

(c) In the case of transfer of control of the equipment, as in the case of sale or merger of the responsible party, the new responsible party shall bear the responsibility of continued compliance of the equipment.

(d) Equipment shall be retested to demonstrate continued compliance with the applicable technical standards if any modifications or changes that could adversely affect the emanation characteristics of the equipment are made by the responsible party. The responsible party bears responsibility for the continued compliance of subsequently produced equipment.

(e) If any modifications or changes are made by anyone other than the responsible party for the Declaration of Conformity, the party making the

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modifications or changes, if located within the U.S., becomes the new responsible party. The new responsible party must comply with all provisions for the Declaration of Conformity, including having test data on file demonstrating that the product continues to comply with all of the applicable technical standards.

[61 FR 31046, June 19, 1996]

§ 2.1074 Identification.

Devices subject only to a Declaration of Conformity shall be uniquely identified by the responsible party. This identification shall not be of a format which could be confused with the FCC Identifier required on certified, notified, type accepted or type approved equipment. The responsible party shall maintain adequate identification records to facilitate positive identification for each device.

[61 FR 31047, June 19, 1996]

§ 2.1075 Retention of records.

(a) Except as shown in paragraph (b) of this section, for each product subject to a Declaration of Conformity, the responsible party, as shown in § 2.909, shall maintain the following records:

(1) A record of the original design drawings and specifications and all changes that have been made that may affect compliance with the requirements of § 2.1073.

(2) A record of the procedures used for production inspection and testing (if tests were performed) to insure the conformance required by § 2.1073. (Statistical production line emission testing is not required.)

(3) A record of the measurements made on an appropriate test site that demonstrates compliance with the applicable regulations. The record shall contain:

(i) The actual date or dates testing was performed;

(ii) The name of the test laboratory, company, or individual performing the testing. The Commission may request additional information regarding the test site, the test equipment or the qualifications of the company or individual performing the tests;

(iii) A description of how the device was actually tested, identifying the

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measurement procedure and test equipment that was used;

(iv) A description of the equipment under test (EUT) and support equipment connected to, or installed within, the EUT;

(v) The identification of the EUT and support equipment by trade name and model number and, if appropriate, by FCC Identifier and serial number;

(vi) The types and lengths of connecting cables used and how they were arranged or moved during testing;

(vii) At least two photographs showing the test set-up for the highest line conducted emission and showing the test set-up for the highest radiated emission. These photographs must be focused originals which show enough detail to confirm other information contained in the test report;

(viii) A description of any modifications made to the EUT by the testing company or individual to achieve compliance with the regulations;

(ix) All of the data required to show compliance with the appropriate regulations;

(x) The signature of the individual responsible for testing the product along with the name and signature of an official of the responsible party, as designated in § 2.909; and

(xi) A copy of the compliance information, as described in § 2.1077, required to be provided with the equipment.

(b) If the equipment is assembled using modular components that, by themselves, are subject to authorization under a Declaration of Conformity and/or a grant of certification, and the assembled product is also subject to authorization under a Declaration of Conformity but, in accordance with the applicable regulations, does not require additional testing, the assembler shall maintain the following records in order to show the basis on which compliance with the standards was determined:

(1) A listing of all of the components used in the assembly;

(2) Copies of the compliance information, as described in § 2.1077 for all of the modular components used in the assembly;

(3) A listing of the FCC Identifier numbers for all of the components used

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in the assembly that are authorized under a grant of certification;

(4) A listing of equipment modifications, if any, that were made during assembly; and

(5) A copy of any instructions included with the components that were required to be followed to ensure the assembly of a compliant product, along with a statement, signed by the assembler, that these instructions were followed during assembly. This statement shall also contain the name and signature of an official of the responsible party, as designated in § 2.909.

(c) The records listed in paragraphs (a) and (b) of this section shall be retained for two years after the manufacture or assembly, as appropriate, of said equipment has been permanently discontinued, or until the conclusion of an investigation or a proceeding if the responsible party is officially notified that an investigation or any other administrative proceeding involving the equipment has been instituted. Requests for the records described in this section and for sample units also are covered under the provisions of § 2.946.

[61 FR 31047, June 19, 1996]

§ 2.1076 FCC inspection and submission of equipment for testing.

(a) Each responsible party, upon receipt of a reasonable request, shall submit to the Commission the records required by § 2.1075 or one or more sample units for measurements at the Commission's laboratory.

(b) Shipping costs to the Commission's Laboratory and return shall be borne by the responsible party. In the event the responsible party believes that shipment of the sample to the Commission's Laboratory is impractical because of the size or weight of the equipment, or the power requirement, or for any other reason, the responsible party may submit a written explanation why such shipment is impractical and should not be required.

[61 FR 31047, June 19, 1996]

§ 2.1077 Compliance information.

(a) If a product must be tested and authorized under a Declaration of Conformity, a compliance information statement shall be supplied with the

product at the time of marketing or importation, containing the following information:

(1) Identification of the product, e.g., name and model number;

(2) A statement, similar to that contained in § 15.19(a)(3) of this chapter, that the product complies with part 15 of this chapter; and

(3) The identification, by name, address and telephone number, of the responsible party, as defined in § 2.909. The responsible party for a Declaration of Conformity must be located within the United States.

(b) If a product is assembled from modular components that, by themselves, are authorized under a Declaration of Conformity and/or a grant of certification, and the assembled product is also subject to authorization under a Declaration of Conformity but, in accordance with the applicable regulations, does not require additional testing, the product shall be supplied, at the time of marketing or importation, with a compliance information statement containing the following information:

(1) Identification of the assembled product, e.g., name and model number.

(2) Identification of the modular components used in the assembly. A modular component authorized under a Declaration of Conformity shall be identified as specified in paragraph (a)(1) of this section. A modular component authorized under a grant of certification shall be identified by name and model number (if applicable) along with the FCC Identifier number.

(3) A statement that the product complies with part 15 of this chapter.

(4) The identification, by name, address and telephone number, of the responsible party who assembled the product from modular components, as defined in § 2.909. The responsible party for a Declaration of Conformity must be located within the United States.

(5) Copies of the compliance information statements for each modular component used in the system that is authorized under a Declaration of Conformity.

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(c) The compliance information statement shall be included in the user's manual or as a separate sheet.

[61 FR 31048, June 19, 1996, as amended at 62 FR 41880, Aug. 4, 1997]

RADIOFREQUENCY RADIATION EXPOSURE**§ 2.1091 Radiofrequency radiation exposure evaluation: mobile devices.**

(a) Requirements of this section are a consequence of Commission responsibilities under the National Environmental Policy Act to evaluate the environmental significance of its actions. See subpart I of part 1 of this chapter, in particular § 1.1307(b).

(b) For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. In this context, the term "fixed location" means that the device is physically secured at one location and is not able to be easily moved to another location. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 centimeter separation requirement.

(c) Mobile devices that operate in the Cellular Radiotelephone Service, the Personal Communications Services, the Satellite Communications Services, the General Wireless Communications Service, the Wireless Communications Service, the Maritime Services and the Specialized Mobile Radio Service authorized under subpart H of part 22 of this chapter, part 24 of this chapter, part 25 of this chapter, part 26 of this chapter, part 27 of this chapter, part 80 of this chapter (ship earth stations devices only) and part 90 of this chapter are subject to routine environmental evaluation for RF exposure prior to equipment authorization or use if they operate at frequencies of 1.5 GHz or below and their effective radiated power (ERP) is 1.5 watts or more, or if they operate at frequencies above

1.5 GHz and their ERP is 3 watts or more. Unlicensed personal communications service devices, unlicensed millimeter wave devices and unlicensed NII devices authorized under § 15.253, § 15.255, and subparts D and E of part 15 of this chapter are also subject to routine environmental evaluation for RF exposure prior to equipment authorization or use if their ERP is 3 watts or more or if they meet the definition of a portable device as specified in § 2.1093 (b) requiring evaluation under the provisions of that section. All other mobile and unlicensed transmitting devices are categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use, except as specified in §§ 1.1307(c) and 1.1307(d) of this chapter. Applications for equipment authorization of mobile and unlicensed transmitting devices subject to routine environmental evaluation must contain a statement confirming compliance with the limits specified in paragraph (d) of this section as part of their application. Technical information showing the basis for this statement must be submitted to the Commission upon request.

(d) The limits to be used for evaluation are specified in § 1.1310 of this chapter. All unlicensed personal communications service (PCS) devices and unlicensed NII devices shall be subject to the limits for general population/uncontrolled exposure.

(1) For purposes of analyzing mobile transmitting devices under the occupational/controlled criteria specified in § 1.1310 of this chapter, time-averaging provisions of the guidelines may be used in conjunction with typical maximum duty factors to determine maximum likely exposure levels.

(2) Time-averaging provisions may not be used in determining typical exposure levels for devices intended for use by consumers in general population/uncontrolled environments as defined in § 1.1310 of this chapter. However, "source-based" time-averaging based on an inherent property or duty-cycle of a device is allowed. An example of this is the determination of exposure from a device that uses digital technology such as a time-division multiple-access (TDMA) scheme for

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transmission of a signal. In general, maximum average power levels must be used to determine compliance.

(3) If appropriate, compliance with exposure guidelines for devices in this section can be accomplished by the use of warning labels and by providing users with information concerning minimum separation distances from transmitting structures and proper installation of antennas.

(4) In some cases, e.g., modular or desktop transmitters, the potential conditions of use of a device may not allow easy classification of that device as either mobile or portable (also see § 2.1093). In such cases, applicants are responsible for determining minimum distances for compliance for the intended use and installation of the device based on evaluation of either specific absorption rate (SAR), field strength or power density, whichever is most appropriate.

[61 FR 41017, Aug. 7, 1996, as amended at 62 FR 4655, Jan. 31, 1997; 62 FR 9658, Mar. 3, 1997; 62 FR 47966, Sept. 12, 1997]

§ 2.1093 Radiofrequency radiation exposure evaluation: portable devices.

(a) Requirements of this section are a consequence of Commission responsibilities under the National Environmental Policy Act to evaluate the environmental significance of its actions. See subpart I of part 1 of this chapter, in particular § 1.1307(b).

(b) For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

(c) Portable devices that operate in the Cellular Radiotelephone Service, the Personal Communications Service (PCS), the Satellite Communications Services, the General Wireless Communications Service, the Wireless Communications Service, the Maritime Services, the Specialized Mobile Radio Service, the Wireless Medical Telemetry Service (WMTS) and the Medical Implant Communications Service (MICS), authorized under subpart H of part 22 of this chapter, part 24 of this chapter, part 25 of this chapter, part 26 of this chapter, part 27 of this chapter, part 80 of this chapter (ship earth sta-

tion devices only), part 90 of this chapter, subparts H and I of part 95, and unlicensed personal communication service, unlicensed NII devices and millimeter wave devices authorized under subparts D and E, § 15.253 and § 15.255 of part 15 of this chapter are subject to routine environmental evaluation for RF exposure prior to equipment authorization or use. All other portable transmitting devices are categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use, except as specified in §§ 1.1307(c) and 1.1307(d) of this chapter. Applications for equipment authorization of portable transmitting devices subject to routine environmental evaluation must contain a statement confirming compliance with the limits specified in paragraph (d) of this section as part of their application. Technical information showing the basis for this statement must be submitted to the Commission upon request.

(d) The limits to be used for evaluation are based generally on criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate ("SAR") in Section 4.2 of "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," ANSI/IEEE C95.1-1992, Copyright 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017. These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," NCRP Report No. 86, Section 17.4.5. Copyright NCRP, 1986, Bethesda, Maryland 20814. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards. The criteria to be used are specified in paragraphs (d)(1) and (d)(2) of this section and shall apply for portable devices transmitting in the frequency range from 100 kHz to 6 GHz.

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Portable devices that transmit at frequencies above 6 GHz are to be evaluated in terms of the MPE limits specified in § 1.1310 of this chapter. Measurements and calculations to demonstrate compliance with MPE field strength or power density limits for devices operating above 6 GHz should be made at a minimum distance of 5 cm from the radiating source.

(1) Limits for Occupational/Controlled exposure: 0.4 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 8 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 20 W/kg, as averaged over an 10 grams of tissue (defined as a tissue volume in the shape of a cube). Occupational/Controlled limits apply when persons are exposed as a consequence of their employment provided these persons are fully aware of and exercise control over their exposure. Awareness of exposure can be accomplished by use of warning labels or by specific training or education through appropriate means, such as an RF safety program in a work environment.

(2) Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not exercise control over their exposure. Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section.

(3) Compliance with SAR limits can be demonstrated by either laboratory measurement techniques or by com-

putational modeling. Methodologies and references for SAR evaluation are described in numerous technical publications including "IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields—RF and Microwave," IEEE C95.3-1991.

(4) For purposes of analyzing portable transmitting devices under the occupational/controlled criteria, the time-averaging provisions of the MPE guidelines identified in § 1.1310 of this chapter can be used in conjunction with typical maximum duty factors to determine maximum likely exposure levels.

(5) Time-averaging provisions of the MPE guidelines identified in § 1.1310 of this chapter may not be used in determining typical exposure levels for portable devices intended for use by consumers, such as hand-held cellular telephones, that are considered to operate in general population/uncontrolled environments as defined above. However, "source-based" time-averaging based on an inherent property or duty-cycle of a device is allowed. An example of this would be the determination of exposure from a device that uses digital technology such as a time-division multiple-access (TDMA) scheme for transmission of a signal. In general, maximum average power levels must be used to determine compliance.

[61 FR 41017, Aug. 7, 1996, as amended at 62 FR 4655, Jan. 31, 1997; 62 FR 9658, Mar. 3, 1997; 62 FR 47967, Sept. 12, 1997; 65 FR 44007, July 17, 2000]

Subpart K—Importation of Devices Capable of Causing Harmful Interference**§ 2.1201 Purpose.**

(a) In order to carry out its responsibilities under the Communications Act and the various treaties and international regulations, and in order to promote efficient use of the radio spectrum, the Commission has developed technical standards for radio frequency equipment. The technical standards applicable to individual types of equipment are found in that part of the rules governing the service wherein the equipment is to be operated. In addition to the technical standards, the