and to mining. The land has been and will remain open to mineral leasing.

EFFECTIVE DATE: May 25, 1989.

FOR FURTHER INFORMATION CONTACT: James Binando, BLM Montana State Office, P.O. Box 36800, Billings, Montana 59107, 406–657–6090.

By virtue of the authority vested in the Secretary of the Interior by section 204 of the Federal Land Policy and Management Act of 1976, 90 Stat. 2751; 43 U.S.C. 1714, it is ordered as follows:

1. Public Land Order No. 725 which withdrew National Forest System land for the Forest Service's Dark Canyon Administrative Site is hereby revoked insofar as it affects the following described land:

Black Hills, Meridian

T. 1 N., R. 6 E.,
Sec. 13, NW¼ NE¼, NE¼ NW¼ and E½ NW¼ NW¼.

The area described contains 100 acres in Pennington County.

At 9 a.m. on May 25, 1989, the land shall be opened to such forms of disposition as may by law be made of National Forest System land, including location and entry under the United States mining laws. Appropriation of lands described in this order under the general mining laws prior to the date and time of restoration is unauthorized. Any such attempted appropriation, including attempted adverse possession under 30 U.S.C. Sec. 38, shall vest no rights against the United States. Acts required to establish a location and to initiate a right of possession are governed by State law where not in conflict with Federal law. The Bureau of Land Management will not intervene in disputes between rival locators over possessory rights since Congress has provided for such determinations in local courts.

April 18, 1989.

Earl Gjelde,

Under Secretary of the Interior

[FR Doc. 89–9809 Filed 4–24–89; 8:45 am]

BILLING CODE 4310–DN–M

43 CFR Public Land Order 6729

[AZ–920–09–4214–10; A–6641]

Modification of Secretarial Order Dated July 10, 1908, as Amended; Arizona

AGENCY: Bureau of Land Management, Interior.

ACTION: Public land order.

SUMMARY: This order modifies Secretarial Order of July 10, 1908, insofar as it affects 6.09 acres of public land withdrawn for use by the United States Forest Service as a part of the Sedona Administrative Site. This 6.09 acres has been identified for disposal by exchange, pursuant to the General Exchange Act of March 20, 1922, as amended and supplemented, and section 206 of the Federal Land Policy and Management Act. The land described below will be opened to disposal by exchange but will remain closed to all other forms of surface entry and mining. The land has been and will remain open to mineral leasing.

EFFECTIVE DATE: May 25, 1989.

FOR FURTHER INFORMATION CONTACT: John Mezes, BLM Arizona State Office, P.O. Box 16563, Phoenix, Arizona 85011, (602) 241–5531.

By virtue of the authority vested in the Secretary of the Interior by section 204(a) of the Federal Land Policy and Management Act of 1976, 90 Stat. 2751; 43 U.S.C. 1714, *it is ordered as follows:*

1. The Secretarial Order dated July 10, 1908, which withdrew public land for the United States Forest Service's Sedona Administrative site is hereby modified to allow for the disposal by exchange pursuant to the General Exchange Act of March 20, 1922, and section 206 of the Federal Land Policy and Management Act, 90 Stat. 2756; 43 U.S.C. 1716. The affected land is described as follows:

Gila and Salt River Meridian

T. 17 N., R. 6 E.,
Sec. 7, NE¼SW¼SW¼SE¼, NW¼SE¼ SW¼SE¼, W½W½NE¼SE¼SW¼ SE¼ NW¼NW¼SE¼SE¼SW¼SE¼, N½NE¼SW¼SE¼SW¼SE¼.

The area described contains 6.09 acres in Coconino County.

2. At 9:00 a.m. on May 25, 1989, the land described in paragraph 1 will be opened to such forms of exchange as may by law be made of National Forest System land, subject to valid existing rights, the provisions of existing withdrawals, other segregations of record, and the requirements of applicable law. The land will remain closed to mining entry. The land has been and will remain open to mineral leasing.

April 18, 1989.

Earl Gjelde,

Under Secretary of the Interior.

[FR Doc. 89–9811 Filed 4–24–89; 8:45 am]

BILLING CODE 4310–32–M

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 2

[DA 89–312]

Recognizing Certain Radio Astronomy Observatories in the 1350–1400 MHz Band

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: By this action the Commission is amending § 2.106, 47 CFR Part 2 by adding a new United States footnote to recognize specific radio astronomy observatories in the 1350–1400 MHz band. This footnote will urge Government administrations to exercise caution when making new assignments that may affect astronomy observations.

EFFECTIVE DATE: April 25, 1989.

ADDRESS: Federal Communications Commission, Washington, DC 20554.

FOR FURTHER INFORMATION CONTACT: Damon C. Ladson, Frequency Allocations Branch, Office of Engineering and Technology, (202) 653–8106.

SUPPLEMENTARY INFORMATION: This is a summary of the commission's order, DA 89–312, adopted March 3, 1989, and released April 12, 1989.

The full text of the Commission decisisions available for inspection and copying during normal business hours in the FCC Dockets Branch (Room 230), 1919 M Street Northwest, Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractor, International Transcription Service, (202) 857–3800, 2100 M Street Northwest, Suite 140, Washington, DC 20037.

Summary Of Order

1. The Commission is amending § 2.106, 47 CFR Part 2, by adding a new United States footnote to recognize certain radio astronomy observatories operating in the 1350–1400 MHz band. This band is allocated to the Government radiolocation service on a primary basis and Government fixed and mobile services on a secondary basis. There is no non-Government allocation in this band.

2. The new footnote, US311, will urge Government administrations to exercise caution when making assignments in this band that may affect radio astronomy observatories. The footnote also lists radio astronomy observatories that may be affected. No other non-

Government entities are affected by the new footnote.

Federal Communications Commission.

Thomas P. Stanley,

Chief Engineer.

List of Subjects in 47 CFR Part 2

Radio.

Rule Changes

Part 2 of the Chapter I of Title 47 of the Code of Federal Regulations is amended as follows:

PART 2—FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

1. The authority citation in Part 2 continues to read as follows:

Authority: Sec. 4, 303, 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303, unless otherwise noted.

2. Section 2.106, the Table of Frequency Allocations, is amended by listing footnote US311 in column 4 for the 1350–1400 MHz band and adding the text of footnote US311 to the list of footnotes at the end of the table as follows:

§ 2.106 Table of Frequency Allocations.

United States table
Government Allocation (MHz)
(4)
* * *
1350–1400
RADIOLOCATION.
Fixed.
Mobile.
714 718 720
G2 G27 G114
US311
* * *
* * * * *
United States (US) Footnotes
* * * * *

US311—Radio astronomy observations may be made in the 1350–1400 MHz band on an unprotected basis at certain Radio Astronomy Observatories indicated below:

National Astronomy and Ionosphere Center, Arecibo, Puerto Rico
Rectangle between latitudes 17° 30′ N and 19° 00′ N and between longitudes 65° 10′ W and 68° 00′ W.

National Radio Astronomy Observatory, Socorro, New Mexico
Rectangle between latitudes 32° 30′ N and 35° 30′ N and between longitudes 106° 00′ W and 109° 00′ W.

National Radio Astronomy Observatory, Green Bank, West Virginia
Rectangle between latitudes 37° 30′ N and 39° 15′ N and between longitudes 78° 30′ W and 80° 30′ W.

National Radio Astronomy Observatory
50 mile radius circles centered on:

Very long baseline array stations	Latitude (North)	Longitude (West)
Pie Town, NM	34° 18′	108° 07′
Kitt Peak, AZ	31° 57′	111° 37′
Los Alamos, NM	35° 47′	106° 15′
Fort Davis, TX	30° 38′	103° 57′
North Liberty, IA	41° 46′	91° 34′
Brewster, WA	48° 08′	119° 41′
Owens Valley, CA	37° 14′	118° 17′
Saint Croix, VI	17° 46′	64° 35′
Mauna Kea, HI	19° 49′	155° 28′
Hancock, NH	42° 56′	71° 59′

Every practicable effort will be made to avoid the assignment of frequencies in the band 1350–1400 MHz to stations in the fixed and mobile services which could interfere with radio astronomy observations within the geographic areas.

[FR Doc. 89-9658 Filed 4-24-89; 8:45 am]

BILLING CODE 6712-01-M

47 CFR Parts 2 and 15

[GEN Docket No. 87-389, FCC 89-103]

Operation of Radio Frequency Devices Without an Individual License

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This document adopts a comprehensive revision of the technical and administrative provisions for the operation of a Part 15, non-licensed radio frequency device. This item standardizes the emission limitations between various devices and establishes a number of general usage frequency bands. These standards are designed to minimize the potential that Part 15 devices will cause interference to the authorized radio services. Further, these standards will permit the manufacture of many new types of devices that can be operated without obtaining a license from the Commission.

EFFECTIVE DATE: June 23, 1989.

ADDRESS: Federal Communications Commission, 1919 M Street NW., Washington, DC 20554.

FOR FURTHER INFORMATION CONTACT: John A. Reed, Technical Standards Branch, Office of Engineering and Technology, (202) 653-7313.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's *Report and Order* in Gen. Docket No. 87-389, FCC 89-103, Adopted March 30, 1989, and Released April 18, 1989.

The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Dockets Branch (Room 230), 1919 M Street NW., Washington, DC. The complete text of this decision also may be purchased from the Commission's copy contractor, International Transcription Service, (202) 857-3800, 2100 M Street NW., Suite 140, Washington, DC 20037.

The public reporting burden for these collections of information is estimated to vary from 2.5 to 30 hours per response, with an average of 18 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collections of information. Send comments regarding this burden estimate or any other aspect of these collections of information, including suggestions for reducing the burden, to the Federal Communications Commission, Office of Managing Director, Washington, DC 20554, and to the Office of Management and Budget, Paperwork Reduction Project (3060-0329; 3060-0397; 3060-0398), Washington, DC 20503.

Summary of the Report and Order

1. The Commission has permitted the non-licensed operation of certain types of radio frequency (RF) devices, such as receivers and low power transmitters, for approximately 50 years. The regulations governing such devices are set forth in Part 15 of the rules and are designed in such a manner as to reduce the probability of interference being caused to the authorized radio services. The original regulations were based on a general field strength limit. As devices were designed to operate at higher frequencies, this standard was found to be too restrictive. Since that time, the Commission has adopted numerous amendments to the Part 15 rules to enable the operation of specific new types of devices in response to petitions for rule making. This ad hoc approach of adopting device-specific regulations has resulted in a number of inconsistencies and inequities in the technical standards, generally as a result of the timing of the petitions. Because the rules now require compliance with specific definitional and operational restrictions, they no longer provide the flexibility they were originally intended to provide. In addition, the standards need to protect against interference have changed over the years due to

improvements in the sensitivity of equipment used in the licensed services, the increased proliferation of licensed and non-licensed operations, and changes in frequency allocations.

2. The Part 15 regulatory plan being adopted in this Report and Order is designed to restore the technical flexibility originally envisioned for the operation of non-licensed devices, enabling manufacturers to market new RF devices without waiting for the conclusion of rule making considering the interference potential of the devices. We expect the new rules to encourage the development of significant numbers of new types of low power RF systems and devices to meet the strong consumer demand for this type of equipment.

3. To the extent possible, we have eliminated all unnecessary and overly restrictive regulations by adopting minimal standards on operational frequencies, bandwidth, modulation techniques and other parameters. We also have carefully considered the concerns of commenting parties who argue that expanded operation of Part 15 devices could lead to increases in the level of background RF "noise" that tends to cause interference to authorized services that depend on reception of very low level signals. In some instances, the decision to permit greater flexibility required a further reduction in the levels of unwanted emissions. In a few instances, we have taken this opportunity to adopt more restrictive standards on the permitted levels of unwanted emissions in order to provide a "cleaner" RF environment. However, we have provided a liberal transition period, permitting the continued manufacture and importation of equipment under the former regulations for five years for most RF devices. Receivers may be manufactured and imported under the former regulations for ten years unless the receiver is associated with a transmitter that could not have been authorized under the former regulations.

4. The following is a brief summary of some of the more substantial changes to the regulations:

—With certain exemptions, radiated field strength limits below 1000 MHz are specified using measurement instrumentation with a CISPR quasi-peak detector; radiated emission limits above 1000 MHz are specified using measurement instrumentation with an average detector; and, in those instances where use of average detectors are permitted, a limit on peak emissions corresponding to 20 dB above the maximum permitted average emission level is specified;

–A power line conducted limit of 250 uV in the frequency range of 450 kHz to 30 MHz, as measured with a 50 ohm/50 uH LISN and a CISPR quasi-peak detector, is adopted for all devices except carrier current systems operating within that frequency band and Class A digital devices;

–Receivers operating within the frequency ranges of 901–935 MHz and 940–960 MHz will be subject to the regulations; further, the frequency range over which emissions from the receivers must be measured is expanded for some devices and reduced for others;

–The emission limits for unintentional radiators, e.g. receivers, are reduced to the emission limits currently applied to Class B computing devices for the frequency range of 30 to 960 MHz and to 500 uV/m at 3 meters for frequencies above 960 MHz;

–New general operation bands are established at 13.553–13.567 MHz, 26.96–27.28 MHz, 40.66–40.70 MHz, 902–928 MHz, 2400–2483.5 MHz, 5725–5875 MHz, and 24.0–24.25 GHz; and,

–The emission limits for intentional radiators, i.e. transmitters, operating under the general provisions are as follows:

Band of operation (MHz)	Emission limit (μV/m)	Measurement distance (meters)
0.009–0.490	2400/F (in kHz)	300
0.490–1.705	24000/F (in kHz)	30
1.705–30	30	30
30–88	100[1]	3
88–216	150[1]	3
216–960	200[1]	3
Above 960	500	3

[1] NOTE: Except for non-residential perimeter protection systems operating in the bands 54–72 MHz or 76–88 MHz, operation under the general limits in the television broadcast bands is not permitted.

5. Pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 603, this proceeding will have a significant economic impact on a number of small entities. By providing the regulatory flexibility needed to permit general operation frequency bands, this action is expected to foster an effective competitive marketplace in the area of low power telecommunications, providing small entities, the opportunity to develop systems that were not previously permitted under the regulations. Some standards regarding spurious and other undesired emissions from receivers and certain transmitters are tightened. The manufacturers of certain transmitters also may be impacted by the addition of restricted frequency bands. The rules as herein amended will continue to provide for marketing of radio frequency equipment subject to the Commission's equipment authorization procedures.

6. Accordingly, *it is ordered* That under the authority contained in Sections 4(i), 301, 302, 303(e), 303(f), 303(r), 303(s), 304 and 307 of the Communications Action of 1934, as amended, Parts 2 and 15 of the Commission's Rules and Regulations are amended as set forth below. These rules and regulations are effective June 23, 1989.

List of Subjects

47 CFR Part 2

Communications equipment, Imports, Radio, Reporting and recordkeeping requirements, Television.

47 CFR Part 15

Communications equipment, Computer technology, Labeling, Radio, Reporting and recordkeeping requirements, Security measures, Telephone, Wiretapping, Electronic surveillance

Rule Changes

A. Title 47 of the Code of Federal Regulations, Part 2, is amended as follows:

PART 2—[AMENDED]

1. The authority citation for Part 2 continues to read as follows:

Authority: Sec. 4, 302, 303, and 307 of the Communications Act of 1934, as amended, 47 U.S.C. 154, 302, 303, and 307, unless otherwise noted.

2. Section 2.801 is amended by revising paragraph (b) to read as follows:

§ 2.801 Radiofrequency device defined.

* * * * *

(b) The incidental, unintentional and intentional radiators defined in Part 15 of this chapter.

* * * * *

3. Section 2.805 is revised to read as follows:

§ 2.805 Equipment that does not require Commission approval.

In the case of a radiofrequency device that, in accordance with the rules in this chapter, does not have to have a grant of equipment authorization issued by the Commission, e.g., a device subject to verification, but, nevertheless, must comply with specified technical standards prior to use, no person shall sell or lease, or offer for sale or lease (including advertising for sale or lease), or import, ship or distribute for the purposes of selling or leasing or offering for sale or lease, any such

radiofrequency device unless, prior thereto, such device complies with the applicable administrative and technical provisions (including verification of the equipment, where required) specified in the Commission's rules.

4. Section 2.806 is revised in its entirety to read as follows:

§ 2.806 Exemption for a digital device.

(a) Notwithstanding the provisions in § 2.805, the announcement and offer for sale of a digital device, subject to verification under the provisions in Part 15 of this chapter, that is in the conceptual, developmental, design or preproduction stage is permitted prior to verification of compliance *Provided* the prospective buyer is advised in writing at the time of announcement or offer for sale that such equipment is subject to the FCC rules and that such equipment shall comply with the appropriate FCC rules before final delivery to the buyer or to centers of distribution.

(b) Parties responsible for verification of Class A digital devices, as defined in Part 15 of this chapter, shall have the option of ensuring compliance with the applicable technical specifications of this chapter at each end user's location after installation, provided that the purchase or lease agreement includes a proviso that such a determination of compliance be made and is the responsibility of the party responsible for verification of the equipment.

(c) A digital device subject to the provisions of this chapter may be operated prior to a determination of compliance under the following conditions:

(1) Any digital device may be operated for the purpose of compliance testing.

(2) Any digital device may be operated for the purpose of demonstration at a trade show provided there is displayed a conspicuous notice that the device has not been tested for compliance. If a digital device subject to verification is offered for sale or lease at the show, the provisions of § 2.806(a) shall apply. A digital device subject to a grant of equipment authorization from the Commission may not be offered for sale or lease prior to issuance of the grant of authorization by the FCC, but may be advertised or displayed as provided by § 2.803.

(3) Any digital device may be operated at the manufacturer's facilities during developmental, design or preproduction states for evaluation of product performance and determination of customer acceptability.

(4) Where customer acceptability of a Class A digital device cannot be determined at the manufacturer's facilities because of size or unique capability of the device, that device may be operated at the user's site during development, design or preproduction stages for evaluation of product performance and determination of customer acceptability.

(5) For the purpose of paragraphs (c)(3) and (c)(4) of this section, the manufacturer's facilities are considered to include the facilities of the party responsible for compliance with the regulations, the manufacturer, and other entities working under the authorization of the responsible party in connection with the development and manufacture, but not marketing, of the equipment.

§ 2.909 [Redesignated as § 2.911]

5. Section 2.909 is redesignated as § 2.911.

§ 2.910 [Redesignated as § 2.913]

6. Section 2.910 is redesignated as § 2.913.

7. A new § 2.909 is added before the heading "Application Procedures for Equipment Authorizations", to read as follows:

§ 2.909 Responsible party.

The following parties are responsible for the compliance of radiofrequency equipment with the applicable technical standards after a grant of equipment authorization is issued by the Commission or the equipment is verified:

(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).

(b) In the case of equipment subject to authorization under the verification procedure, the manufacturer or, in the case of imported equipment, the importer.

8. A new § 2.948 is added to read as follows:

§ 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 or the notification 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.

(b) The description shall contain the following information:

(1) Location of the test site.

(2) Physical description of the test site accompanied by photographs 8" x 10" in size. 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, 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 taken pursuant to FCC Bulletin OET 55 using a tuned dipole antenna (this provision 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.

9. Section 2.955 is amended by adding new paragraphs (a)(3) and (a)(4) to read as follows:

§ 2.955 Retention of records.

(a) * * *

(3) A record of the measurements made on an appropriate test site that demonstrates compliance with the applicable regulations. The record shall identify the measurement procedure that was used and shall include all the data required to show compliance with the appropriate regulations.

(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.

* * * * *

10. Section 2.975 is amended by revising paragraph (a)(5) and by adding new paragraphs (a)(7), (f) and (g) to read as follows:

§ 2.975 Application for notification.

(a) * * *

(5) For devices operated under the provisions of Part 15 of this chapter, photographs showing the general appearance and the controls available to the user. Photographs should be 8 by 10 inches in size. Smaller photographs may be submitted provided they are sharp and clear, show the necessary detail, and are mounted on paper between 8 by 10½ inches and 8½ by 11 inches. Line sketches may be submitted in lieu of photographs provided those sketches are sufficiently detailed to allow identification of the equipment. For devices operated under the provisions of any other part and where it is specifically required under the rule section(s) under which the device is to be operated, photographs of the equipment of sufficient clarity to reveal its external appearances and size, both front and back;

* * * * *

(7) 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.

* * * * *

(f) For a composite system that incorporates only devices subject to certification, verification and/or notification and that are contained in a single enclosure, a separate application, FCC Form 731, with the appropriate fee shall be submitted for each type of device within the enclosure. At the option of the applicant, a single FCC identifier may be requested for that system. Fees are based on the number of devices and types of authorizations.

(g) The records of measurement data, measurement procedures, photographs, circuit diagrams, etc. for the device to which the application applies shall be retained for two years after the manufacture of said equipment has been permanently discontinued, or until the conclusion of an investigation or proceeding if the holder of the grant of equipment authorization is officially notified that an investigation or any other administrative proceeding involving the equipment has been instituted.

11. Section 2.1033 is amended by revising paragraphs (b) and (c) to read as follows:

§ 2.1033 Application for certification.

* * * * *

(b) The application 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) 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 also is required for intentional radiators.

(6) A report of measurements of radiated and conducted emissions. This shall identify the test procedure used (e.g., indicate the FCC test procedure used or, if an alternate test procedure was used, a description of the test procedure and the reason it was necessary to use an alternate procedure), the date the measurements were made, the location where the measurements were made, and the device tested (model and serial number, if available). It shall also include a sample calculation showing how the obtained measurements were converted to the levels specified in the applicable rule sections.

(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 8 by 10 inches in size. Smaller photographs may be submitted provided they are sharp and clear, show the necessary detail, and are mounted on paper between 8 by 10½ inches and 8½ by 11 inches in size. 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) For a device used in decoding the Emergency Broadcast System Attention Signal, as defined in § 73.906 of this chapter, the value of the necessary voltage (RMS) or range of voltages of the attention signal to be applied to the input terminals of the decoder which will cause the desired-response of the device. In the event that input signals other than the attention signal

(excluding signals which in combination form the attention signal), including signals outside this voltage range, will cause false responses by the device, a description of such signals and their input voltage levels that cause such false responses shall be specified in the application and appropriate warnings shall be included in the instructions furnished to the user. The susceptibility of the device to false responses and any lack of reliability in responding to the attention signal at input levels within the rated voltage range may be regarded by the Commission as cause to deny certification.

(c) For a composite system that incorporates only devices subject to certification, verification and/or notification and that are contained in a single enclosure, a separate application, FCC Form 731, shall be submitted with the appropriate fee for each type of device within the enclosure. At the option of the applicant, a single FCC identifier may be requested for that system. Fees are based on the number of devices and types of authorizations.

12. Section 2.1043 is amended by revising paragraphs (a) and (c) and adding a new paragraph (b)(3) to read as follows:

§ 2.1043 Changes in certificated equipment.

(a) 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 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.

(b) * * *

(3) Permissive changes, as detailed above, shall be made only by the holder of the grant of certification. Changes by any party other than the grantee require a new application for and grant of certification.

(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.

* * * * *

13. Section 2.1201 is amended by adding a new paragraph (c) after the Note to read as follows:

§ 2.1201 Purpose.

* * * * *

(c) The provisions of this Subpart shall not apply to musical greeting cards, quartz watches and clocks, modules of quartz watches and clocks, radio frequency devices (including digital devices) whose radio frequency stage has a power consumption not exceeding 6 nW, hand-held calculators and electronic games that do not require connection to the AC power lines, and digital devices in which both the highest frequency generated and the highest frequency used are less than 1.705 MHz and that do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

B. Title 47 of the Code of Federal Regulations, Part 15, is amended as follows:

1. Part 15 is revised in its entirety to read as follows:

PART 15—RADIO FREQUENCY DEVICES

Subpart A—General

Sec.

Subpart B—Unintentional Radiators

Subpart C—Intentional Radiators

Sec.

Radiated Emission Limits, Additional Provisions

Authority: Sec. 4, 302, 303, 304, and 307 of the Communications Act of 1934, as amended, 47 U.S.C. 154, 302, 303, 304, and 307.

Subpart A—General

§ 15.1 Scope of this part.

(a) This part sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

(b) The operation of an intentional or unintentional radiator that is not in accordance with the regulations in this part must be licensed pursuant to the provisions of section 301 of the Communications Act of 1934, as amended, unless otherwise exempted from the licensing requirements elsewhere in this chapter.

(c) Unless specifically exempted, the operation or marketing of an intentional or unintentional radiator that is not in compliance with the administrative and technical provisions in this part, including prior Commission authorization or verification, as appropriate, is prohibited under section 302 of the Communications Act of 1934, as amended, and Subpart I of Part 2 of this chapter. The equipment authorization and verification procedures are detailed in Subpart J of Part 2 of this chapter.

§ 15.3 Definitions.

(a) *Auditory assistance device.* An intentional radiator used to provide auditory assistance to a handicapped person or persons. Such a device may be used for auricular training in an education institution, for auditory assistance at places of public gatherings, such as a church, theater, or auditorium, and for auditory assistance to handicapped individuals, only, in other locations.

(b) *Biomedical telemetry device.* An intentional radiator used to transmit measurements of either human or animal biomedical phenomena to a receiver.

(c) *Cable input selector switch.* A transfer switch that is intended as a means to alternate between the reception of broadcast signals via connection to an antenna and the reception of cable television service.

(d) *Cable locating equipment.* An intentional radiator used intermittently by trained operators to locate buried cables, lines, pipes, and similar structures or elements. Operation entails coupling a radio frequency signal onto the cable, pipes, etc. and using a receiver to detect the location of that structure or element.

(e) *Cable system terminal device (CSTD).* A TV interface device that serves, as its primary function, to connect a cable system operated under Part 76 of this chapter to a TV broadcast receiver or other subscriber premise equipment. Any device which functions as a CSTD in one of its operating modes must comply with the technical requirements for such devices when operating in that mode.

(f) *Carrier current system.* A system that transmits radio frequency energy by conduction over the electric power lines. A carrier current system can be designed such that the signals are received by conduction directly from connection to the electric power lines (unintentional radiator) or the signals are received over-the-air due to radiation of the radio frequency signals from the electric power lines (intentional radiator).

(g) *CB receiver.* Any receiver that operates in the Personal Radio Services on frequencies allocated for Citizens Band (CB) Radio Service stations, as well as any receiver provided with a separate band specifically designed to receive the transmissions of CB stations in the Personal Radio Services. This includes the following: (1) A CB receiver sold as a separate unit of equipment; (2) the receiver section of a CB transceiver; (3) a converter to be used with any receiver for the purpose of receiving CB transmissions; and, (4) a multiband receiver that includes a band labelled "CB" or "11-meter" in which such band can be separately selected, except that an Amateur Radio Service receiver that was manufactured prior to January 1, 1960, and which includes an 11-meter band shall not be considered to be a CB receiver.

(h) *Class A digital device.* A digital device that is marketed for use in a commercial, industrial or business environment, exclusive of a device which is marketed for use by the general public or is intended to be used in the home.

(i) *Class B digital device.* A digital device that is marketed for use in a residential environment notwithstanding use in commercial, business and industrial environments. Examples of such devices include, but are not limited to, personal computers, calculators, and similar electronic devices that are marketed for use by the general public.

Note: The responsible party may also qualify a device intended to be marketed in a commercial, business or industrial environment as a Class B device, and in fact is encouraged to do so, provided the device complies with the technical specifications for a Class B digital device. In the event that a particular type of device has been found to repeatedly cause harmful interference to radio communications, the Commission may classify such a digital device as a Class B digital device, regardless of its intended use.

(j) *Cordless telephone system.* A system consisting of two transceivers, one a base station that connects to the public switched telephone network and the other a mobile handset unit that communicates directly with the base station. Transmissions from the mobile unit are received by the base station and then placed on the public switched telephone network. Information received from the switched telephone network is transmitted by the base station to the mobile unit.

Note: The Domestic Public Cellular Radio Telecommunications Service is considered to be part of the switched telephone network. In addition, intercom and paging operations are permitted provided these are not intended to be the primary modes of operation.

(k) *Digital device.* (Previously defined as a computing device). An unintentional radiator (device or system) that generates and uses timing signals or pulses at a rate in excess of 9,000 pulses (cycles) per second and uses digital techniques; inclusive of telephone equipment that uses digital techniques or any device or system that generates and uses radio frequency energy for the purpose of performing data processing functions, such as electronic computations, operations, transformations, recording, filing, sorting, storage, retrieval, or transfer. A radio frequency device that is specifically subject to an emanation requirement in any other FCC Rule part or an intentional radiator subject to Subpart C of this part that contains a digital device is not subject to the standards for digital devices, provided the digital device is used only to enable operation of the radio frequency device and the digital device does not control additional functions or capabilities.

Note: Computer terminals and peripherals that are intended to be connected to a computer are digital devices.

(l) *Field disturbance sensor.* A device that establishes a radio frequency field in its vicinity and detects changes in that field resulting from the movement of persons or objects within its range.

(m) *Harmful interference.* Any emission, radiation or induction that endangers the functioning of a radio navigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunications service operating in accordance with this chapter.

(n) *Incidental radiator.* A device that generates radio frequency energy during the course of its operation although the device is not intentionally designed to generate or emit radio frequency energy. Examples of incidental radiators are dc motors, mechanical light switches, etc.

(o) *Intentional radiator.* A device that intentionally generates and emits radio frequency energy by radiation or induction.

(p) *Kit.* Any number of electronic parts, usually provided with a schematic diagram or printed circuit board, which, when assembled in accordance with instructions, results in a device subject to the regulations in this part, even if additional parts of any type are required to complete assembly.

(q) *Perimeter protection system.* A field disturbance sensor that employs leaky cables as the radiating source. These cables are installed in a manner

that allows the system to detect movement within the protected area.

(r) *Peripheral device.* An input/output unit of a system that feeds data into and/or receives data from the central processing unit of a digital device. Peripherals to a digital device include any device that is connected external to the digital device, any device internal to the digital device that connects the digital device to an external device by wire or cable, and any circuit board or card designed for interchangeable mounting, internally or externally, that increases the operating or processing speed of a digital device, e.g., "turbo cards" and "enhancement boards". Examples of peripheral devices include terminals, printers, external floppy disk drives and other data storage devices, video monitors, keyboards, control cards, interface boards, external memory expansion cards and other input/output devices that may or may not contain digital circuitry. However, an internal device that contains the central processing unit of a digital device is not a peripheral even though such a device may connect to an external keyboard or other components.

(s) *Personal computer.* An electronic computer that is marketed for use in the home, notwithstanding business applications. Such computers are considered Class B digital devices. Computers which use a standard TV receiver as a display device or meet all of the following conditions are considered examples of personal computers:

(1) Marketed through a retail outlet or direct mail order catalog.

(2) Notices of sale or advertisements are distributed or directed to the general public or hobbyist users rather than restricted to commercial users.

(3) Operates on a battery or 120 volt electrical supply.

If the responsible party can demonstrate that because of price or performance the computer is not suitable for residential or hobbyist use, it may request that the computer be considered to fall outside of the scope of this definition for personal computers.

(t) *Power line carrier systems.* An unintentional radiator employed as a carrier current system used by an electric power utility entity on transmission lines for protective relaying, telemetry, etc. for general supervision of the power system. The system operates by the transmission of radio frequency energy by conduction over the electric power transmission lines of the system. The system does not include those electric lines which connect the distribution substation to the customer or house wiring.

(u) *Radio frequency (RF) energy.* Electromagnetic energy at any frequency in the radio spectrum between 9 kHz and 3,000,000 MHz.

(v) *Scanning receiver.* For the purpose of this part, this is a receiver that automatically switches among four or more frequencies in the range of 30 to 960 MHz and which is capable of stopping at and receiving a radio signal detected on a frequency. Receivers designed solely for the reception of the broadcast signals under Part 73 of this chapter or for operation as part of a licensed station are not included in this definition.

(w) *Television (TV) broadcast receiver.* A device designed to receive television pictures that are broadcast simultaneously with sound on the television channels authorized under Part 73 of this chapter.

(x) *Transfer switch.* A device used to alternate between the reception of over-the-air radio frequency signals via connection to an antenna and the reception of radio frequency signals received by any other method, such as from a TV interface device.

(y) *TV interface device.* An unintentional radiator that produces or translates in frequency a radio frequency carrier modulated by a video signal derived from an external or internal signal source, and which feeds the modulated radio frequency energy by conduction to the antenna terminals or other non-baseband input connections of a television broadcast receiver. A TV interface device may include a stand-alone RF modulator, or a composite device consisting of an RF modulator, video source and other components devices. Examples of TV interface devices are video cassette recorders and terminal devices attached to a cable system or used with a Master Antenna (including those used for central distribution video devices in apartment or office buildings).

(z) *Unintentional radiator.* A device that intentionally generates radio frequency energy for use within the device, or that sends radio frequency signals by conduction to associated equipment via connecting wiring, but which is not intended to emit RF energy by radiation or induction.

§ 15.5 General conditions of operation.

(a) Persons operating intentional or unintentional radiators shall not be deemed to have any vested or recognizable right to continued use of any given frequency by virtue of prior registration or certification of equipment, or, for power line carrier systems, on the basis of prior notification of use pursuant to § 90.63(g) of this chapter.

(b) Operation of an intentional, unintentional, or incidental radiator is subject to the conditions that no harmful interference is caused and that interference must be accepted that may be caused by the operation of an authorized radio station, by another intentional or unintentional radiator, by industrial, scientific and medical (ISM) equipment, or by an incidental radiator.

(c) The operator of a radio frequency device shall be required to cease operating the device upon notification by a Commission representative that the device is causing harmful interference. Operation shall not resume until the condition causing the harmful interference has been corrected.

(d) Intentional radiators that produce Class B emissions (damped wave) are prohibited.

§ 15.7 Special temporary authority.

(a) The Commission will, in exceptional situations, consider an individual application for a special temporary authorization to operate an incidental, intentional or unintentional radiation device not conforming to the provisions of this part, where it can be shown that the proposed operation would be in the public interest, that it is for a unique type of station or for a type of operation which is incapable of being established as a regular service, and that the proposed operation can not feasibly be conducted under this part.

(b) No authorization is required in order to perform testing of equipment for determining compliance with these regulations. Except as provided in Subpart I of Part 2 of this chapter, this provision does not permit the providing of equipment to potential users in order to determine customer acceptance of the product or marketing strategy, nor does this provision permit any type of operation other than a determination of compliance with the regulations. During this testing, the provisions of §§ 15.5 and 15.205 apply.

§ 15.9 Prohibition against eavesdropping.

Except for the operations of law enforcement officers conducted under lawful authority, no person shall use, either directly or indirectly, a device operated pursuant to the provisions of this part for the purpose of overhearing or recording the private conversations of others unless such use is authorized by all of the parties engaging in the conversation.

§ 15.11 Cross reference.

The provisions of Subparts A, H, I, J and K of Part 2 apply to intentional and unintentional radiators, in addition to the provisions of this part. Also, a cable system terminal device and a cable input selector switch shall be subject to the relevant provisions of Part 76 of this chapter.

§ 15.13 Incidental radiators.

Manufacturers of these devices shall employ good engineering practices to minimize the risk of harmful interference.

§ 15.15 General technical requirements.

(a) An intentional or unintentional radiator shall be constructed in accordance with good engineering design and manufacturing practice. Emanations from the device shall be suppressed as much as practicable, but in no case shall the emanations exceed the levels specified in these rules.

(b) An intentional or unintentional radiator must be constructed such that the adjustments of any control that is readily accessible by or intended to be accessible to the user will not cause operation of the device in violation of the regulations.

(c) Parties responsible for equipment compliance should note that the limits specified in this part will not prevent harmful interference under all circumstances. Since the operators of Part 15 devices are required to cease operation should harmful interference occur to authorized users of the radio frequency spectrum, the parties responsible for equipment compliance are encouraged to employ the minimum field strength necessary for communications, to provide greater attenuation of unwanted emissions than required by these regulations, and to advise the user as to how to resolve harmful interference problems (for example, see § 15.105(b)).

§ 15.17 Susceptibility to interference.

(a) Parties responsible for equipment compliance are advised to consider the proximity and the high power of non-Government licensed radio stations, such as broadcast, amateur and land mobile stations, and of U.S. Government radio stations when choosing operating frequencies during the design of their equipment so as to reduce the susceptibility for receiving harmful interference. Information on non-Government use of the spectrum can be obtained by consulting the Table of Frequency Allocations in § 2.106 of this chapter.

(b) Information on U.S. Government operations can be obtained by contacting: Director, Spectrum Plans and Policy, National Telecommunications and Information Administration, Department of Commerce, Room 4096, Washington, DC 20230.

§ 15.19 Labelling requirements.

(a) In addition to the requirements in Part 2 of this chapter, a device subject to certification, notification, or verification shall be labelled as follows:

(1) Receivers associated with the operation of a licensed radio service, e.g., FM broadcast under Part 73 of this chapter, land mobile operation under Part 90, etc., shall bear the following statement in a conspicuous location on the device:

This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

(2) A stand-alone cable input selector switch, shall bear the following statement in a conspicuous location on the device:

This device is verified to comply with Part 15 of the FCC Rules for use with cable television service.

(3) All other devices shall bear the following statement in a conspicuous location on the device:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

(b) Where a device is constructed in two or more sections connected by wires and marketed together, the statement specified in this section is required to be affixed only to the main control unit.

(c) When the device is so small or for such use that it is not practicable to place the statement specified in this section on it, the information required by these paragraphs shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed. However, the FCC identifier or the unique identifier, as appropriate, must be displayed on the device.

§ 15.21 Information to user.

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

§ 15.23 Home-built devices.

(a) Equipment authorization is not required for devices that are not marketed, are not constructed from a kit, and are built in quantities of five or less for personal use.

(b) It is recognized that the individual builder of home-built equipment may not possess the means to perform the measurements for determining compliance with the regulations. In this case, the builder is expected to employ good engineering practices to meet the specified technical standards to the greatest extent practicable. The provisions of § 15.5 apply to this equipment.

§ 15.25 Kits.

A TV interface device, including a cable system terminal device, which is marketed as a kit shall comply with the following requirements:

(a) All parts necessary for the assembled device to comply with the technical requirements of this part must be supplied with the kit. No mechanism for adjustment that can cause operation in violation of the requirements of this part shall be made accessible to the builder.

(b) At least two units of the kit shall be assembled in exact accordance with the instructions supplied with the product to be marketed. If all components required to fully complete the kit (other than those specified in paragraph (a) of this section which are needed for compliance with the technical provisions and must be included with the kit) are not normally furnished with the kit, assembly shall be made using the recommended components. The assembled units shall be certified or notified, as appropriate, pursuant to the requirements of this part.

(1) The measurement data required for a TV interface device subject to certification shall be obtained for each of the two units and submitted with an application for certification pursuant to Subpart J of Part 2 of this chapter.

(2) The measurement data required for a TV interface device subject to notification shall be obtained for the units tested and retained on file pursuant to the provisions of Subpart J of Part 2 of this chapter.

(c) A copy of the exact instructions that will be provided for assembly of the device shall be submitted with an application for certification or notification. Those parts which are not normally furnished shall be detailed in the application for equipment authorization.

(d) In lieu of the label required by § 15.19, the following label, along with the label bearing the FCC identifier and other information specified in §§ 2.925 and 2.926, shall be included in the kit with instructions to the builder that it shall be attached to the completed kit:

(Name of Grantee)

(FCC Identifier)

This device can be expected to comply with Part 15 of the FCC Rules provided it is assembled in exact accordance with the instructions provided with this kit. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

(e) For the purpose of this section, circuit boards used as repair parts for the replacement of electrically identical defective circuit boards are not considered to be kits.

§ 15.27 Special accessories.

(a) Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors, are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e., shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer, without additional charge, at the time of purchase. Information detailing any alternative method used to supply the special accessories shall be included in the application for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of the text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.

(b) If a device requiring special accessories is installed by or under the supervision of the party marketing the device, it is the responsibility of that party to install the equipment using the special accessories. For equipment requiring professional installation, it is not necessary for the responsible party to market the special accessories with the equipment. However, the need to use the special accessories must be detailed in the instruction manual, and it is the responsibility of the installer to provide and to install the required accessories.

(c) Accessory items that can be readily obtained from multiple retail outlets are not considered to be special accessories and are not required to be marketed with the equipment. The manual included with the equipment must specify what additional components or accessories are required to be used in order to ensure compliance with this part, and it is the responsibility of the user to provide and use those components and accessories.

(d) The resulting system, including any accessories or components marketed with the equipment, must comply with the regulations.

§ 15.29 Inspection by the Commission.

(a) Any equipment or device subject to the provisions of this part, together with any certificate, notice of registration or any technical data required to be kept on file by the operator, supplier or party responsible for compliance of the device shall be made available for inspection by a Commission representative upon reasonable request.

(b) The owner or operator of a radio frequency device subject to this part shall promptly furnish to the Commission or its representative such information as may be requested concerning the operation of the radio frequency device.

(c) The party responsible for the compliance of any device subject to this part shall promptly furnish to the Commission or its representatives such information as may be requested concerning the operation of the device, including a copy of any measurements made for obtaining an equipment authorization or demonstrating compliance with the regulations.

(d) The Commission, from time to time, may request the party responsible for compliance, including an importer, to submit to the FCC Laboratory in Columbia, Maryland, various equipment to determine that the equipment continues to comply with the applicable standards. Shipping costs to the Commission's Laboratory and return shall be borne by the responsible party. Testing by the Commission will be performed using the measurement procedure(s) that was in effect at the time the equipment was authorized or verified.

§ 15.31 Measurement standards.

(a) The following measurement procedures are used by the Commission to determine compliance with the technical requirements. Copies of these procedures are available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161 or from the Commission's current duplicating contractor whose name and address are available from the Commission's Consumer Assistance Office.

(1) FCC/OET MP–1: FCC Methods of Measurements for Determining Compliance of Radio Control and Security Alarm Devices and Associated Receivers.

(2) FCC/OET MP–2: Measurement of UHF Noise Figures of TV Receivers.

(3) FCC/OET MP–3: FCC Methods of Measurements of Output Signal Level, Output Terminal Conducted Spurious Emissions, Transfer Switch Characteristics, and Radio Noise Emissions from TV Interface Devices.

(4) FCC/OET MP–4: FCC Procedure for Measuring RF Emissions from Computing Devices.

(5) FCC/OET MP–9: FCC Procedure for Measuring Cable Television Switch Isolation.

(b) All parties making compliance measurements on equipment subject to the requirements of this part are urged to use these measurement procedures. Any party using other procedures should ensure that such other procedures can be relied on to produce measurement results compatible with the FCC measurement procedures. The description of the measurement procedure used in testing the equipment for compliance and a list of the test equipment actually employed shall be made part of an application for certification or included with the data required to be retained by the party responsible for devices subject to notification or verification.

(c) For swept frequency equipment, measurements shall be made with the frequency sweep stopped at those frequencies chosen for the measurements to be reported.

(d) Field strength measurements shall be made, to the extent possible, on an open field site. Test sites other than open field sites may be employed if they are properly calibrated so that the measurement results correspond to what would be obtained from an open field site. In the case of equipment for which measurements can be performed only at the installation site, such as perimeter protection systems, carrier current

systems, and systems employing a "leaky" coaxial cable as an antenna, measurements for verification or for obtaining a grant of equipment authorizaton shall be performed at a minimum of three installations that can be demonstrated to be representative of typical installation sites.

(e) For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

(f) To the extent practicable, the device under test shall be measured at the distance specified in the appropriate rule section. The distance specified corresponds to the horizontal distance between the measurement antenna and the closest point of the equipment under test, support equipment or interconnecting cables as determined by the boundary defined by an imaginary straight line periphery describing a simple geometric configuration enclosing the system containing the equipment under test. The equipment under test, support equipment and any interconnecting cables shall be included within this boundary.

(1) At frequencies equal to or above 30 MHz, measurements may be performed at a distance closer than that specified provided this does not result in measurements taken in the near field. When performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance using an inverse linear distance extrapolation factor (20 dB/decade). Measurement at a distance greater than specified is not permitted unless the responsible party can demonstrate the measurements at the specified distance are impractical because of the size of the equipment, the location of the equipment, or other factors, or unless the responsible party can demonstrate that such a measurement would take place in the near field, as could occur when performing measurements on some large digital devices and perimeter protection systems. Measurements shall not be performed at a distance greater than 30 meters unless it can be demonstrated that measurement at a distance of 30 meters or less is impracticable and, further, that the signal level needed to be determined at the distance employed can be detected by the measuring equipment. When performing measurements at a distance greater than that specified, the results shall be interpolated to the specified distance using an inverse linear distance interpolation factor (20 dB/decade).

(2) At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

(3) The applicant for a grant of certification shall specify the interpolation or extrapolation method used in the application filed with the Commission. For equipment subject to notification or verification, this information shall be retained with the measurement data.

(4) When measurement distances of 30 meters or less are specified in the regulations, the Commission will test the equipment at the distance specified unless measurement at that distance results in measurements being performed in the near field. When measurement distances of greater than 30 meters are specified in the regulations, the Commission will test the equipment at a closer distance, usually 30 meters, extrapolating the measured field strength to the specified distance using the methods shown in this section.

(5) Measurements shall be performed at a sufficient number of radials around the equipment under test to determine the radial at which the field strength values of the radiated emissions are maximized. The maximum field strength at the frequency being measured shall be reported in an application for certification.

(g) Equipment under test shall be adjusted, using those controls that are readily accessible to or are intended to be accessible to the consumer, in such a manner as to maximize the level of the emissions. For those devices to which wire leads may be attached by the consumer, tests shall be performed with wire leads attached. The wire leads shall be of the length to be used with the equipment if that length is known. Otherwise, wire leads one meter in length shall be attached to the equipment. Longer wire leads may be employed if necessary to interconnect to associated peripherals.

(h) For a composite system that incorporates devices contained either in a single enclosure or in separate enclosures connected by wire or cable, testing for compliance with the standards in this Part shall be performed with all of the devices in the system functioning. If an intentional radiator incorporates more than one antenna or other radiating source and these radiating sources are designed to emit at the same time, measurements of conducted and radiated emissions shall be performed with all radiating sources that are to be employed emitting.

(i) If the device under test provides for the connection of external accessories, including external electrical input signals, the device shall be tested with the accessories attached. The device under test shall be fully exercised with these external accessories. The emission tests shall be performed with the device and accessories configured in a manner that tends to produce maximized emissions within the range of variations that can be expected under normal operating conditions. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port. Only one test using peripherals or external accessories that are representative of the devices that will be employed with the equipment under test is required. All possible equipment combinations do not need to be tested. The accessories or peripherals connected to the device being tested shall be unmodified, commercially available equipment.

(j) If the equipment under test consists of a central control unit and an external or internal accessory(ies) (peripheral) and the party verifying the equipment or applying for a grant of equipment authorization manufactures or assembles the central control unit and at least one of the accessory devices that can be used with that control unit, testing of the control unit and/or the accessory(ies) must be performed using the devices manufactured or assembled by that party, in addition to any other needed devices which the party does not manufacture or assemble. If the party verifying the equipment or applying for a grant of equipment authorization does not manufacture or assemble the central control unit and at least one of the accessory devices that can be used with that control unit or the party can demonstrate that the central

control unit or accessory(ies) normally would be marketed or used with equipment from a different entity, testing of the central control unit and/or the accessory(ies) must be performed using the specific combination of equipment which is intended to be marketed or used together. Only one test using peripherals or accessories that are representatve of the devices that will be employed with the equipment under test is required. All possible equipment combinations are not required to be tested. The accessories or peripherals connected to the device being tested shall be unmodified, commercially available equipment.

(k) A composite system is a system that incorporates different devices contained either in a single enclosure or in separate enclosures connected by wire or cable. If the individual devices in a composite system are subject to different technical standards, each such device must comply with its specific standards. In no event may the measured emissions of the composite system exceed the highest level permitted for an individual component. For digital devices which consist of a combination of Class A and Class B devices, the total combination of which results in a Class A digital device, it is only necessary to demonstrate that the equipment combination complies with the limits for a Class A device. This equipment combination may not be employed for obtaining a grant of equipment authorization or verifying a Class B digital device. However, if the digital device combination consists of a Class B central control unit, e.g., a personal computer, and a Class A internal peripheral(s), it must be demonstrated that the Class B central control unit continues to comply with the limits for a Class B digital device with the Class A internal peripheral(s) installed but not active.

(l) Measurements of radio frequency emissions conducted to the public utility power lines shall be performed using a 50 ohm/50 uH line-impedance stabilization network (LISN).

Note: Receivers tested under the transition provisions contained in § 15.37 may be tested with a 50 ohm/5 μH LISN.

(m) Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and, if required, reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table:

Frequency range over which device operates	Number of frequencies	Location in the range of operation
1 MHz or less	1	Middle.
1 to 10 MHz	2	1 near top and 1 near bottom.
More than 10 MHz	3	1 near top, 1 near middle and 1 near bottom.

(n) Measurements on TV broadcast receivers shall be performed with the receiver tuned to each VHF frequency and also shall include the following oscillator frequencies: 520, 550, 600, 650, 700, 750, 800, 850, 900 and 931 MHz. If measurements cannot be made on one or more of the latter UHF frequencies because of the presence of signals from licensed radio stations or for other reasons to be detailed in the measurement report, measurements shall be made with the receiver oscillator at a nearby frequency. If the receiver is not capable of receiving channels above 806 MHz, the measurements employing the oscillator frequencies 900 and 931 MHz may be omitted.

(o) The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this part.

§ 15.33 Frequency range of radiated measurements.

(a) For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower. If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the higher of the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator or the upper frequency of the measurement range applicable to the digital device, as shown in paragraph (b)(1) of this section.

(b) For unintentional radiators:

(1) Except as otherwise indicated in paragraphs (b)(2) or (b)(3) of this section, for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30.
1.705–108	1000.
108–500	2000.
500–1000	5000.
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower.

(2) A unintentional radiator, excluding a digital device, in which the highest frequency generated in the device, the highest frequency used in the device and the highest frequency on which the device operates or tunes are less than 30 MHz and which, in accordance with § 15.109, is required to comply with standards on the level of radiated emissions within the frequency range 9 kHz to 30 MHz, such as a CB receiver or a device designed to conduct its radio frequency emissions via connecting wires or cables, e.g., a carrier current system not intended to radiate, shall be investigated from the lowest radio frequency generated or used in the device, without going below 9 kHz (25 MHz for CB receivers), up to the frequency shown in the following table. If the unintentional radiator contains a digital device, the upper frequency to be investigated shall be that shown in the table below or in the table in paragraph (b)(1) of this section, as based on both the highest frequency generated and the highest frequency used in the digital device, whichever range is higher.

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705–10	400
10–30	500

(3) Except for a CB receiver, a receiver employing superheterodyne techniques shall be investigated from 30 MHz up to at least the second harmonic of the highest local oscillator frequency generated in the device. If such receiver is controlled by a digital device, the frequency range shall be investigated up to the higher of the second harmonic of the highest local oscillator frequency

generated in the device or the upper frequency of the measurement range specified for the digital device in paragraph (b)(1) of this section.

(c) The above specified frequency ranges of measurements apply to the measurement of radiated emissions and, in the case of receivers, the measurement to demonstrate compliance with the antenna conduction limits specified in § 15.111. The frequency range of measurements for AC power line conducted limits is specified in §§ 15.107 and 15.207 and applies to all equipment subject to those regulations. In some cases, depending on the frequency(ies) generated and used by the equipment, only signals conducted onto the AC power lines are required to be measured.

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

§ 15.35 Emission limits.

The conducted and radiated emission limits shown in this part are based on the following, unless otherwise specified elsewhere in this part:

(a) On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a CISPR quasi-peak detector function and related measurement bandwidths, unless otherwise specified. The specifications for the measuring instrument using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Interference (CISPR) of the International Electrotechnical Commission. As an alternative to CISPR quasi-peak measurements, the responsible party, at its option, may demonstrate compliance with the emission limits using measuring equipment employing a peak detector function, properly adjusted for such factors as pulse desensitization, as long as the same bandwidths as indicated for CISPR quasi-peak measurements are employed.

Note: For pulse modulated devices with a pulse-repetition frequency of 20 Hz or less and for which CISPR quasi-peak measurements are specified, compliance with the regulations shall be demonstrated using measuring equipment employing a peak detector function, properly adjusted for such factors as pulse desensitization, using the same measurement bandwidths that are indicated for CISPR quasi-peak measurements.

(b) On any frequency or frequencies above 1000 MHz, the radiated limits shown are based on the use of measurement instrumentation employing an average detector function. When average radiated emission measurements are specified in the regulations, including emission measurements below 1000 MHz, there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit for the frequency being investigated. Measurements of AC power line conducted emissions are performed using a CISPR quasi-peak detector, even for devices for which average radiated emission measurements are specified.

(c) When the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measured field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in those cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value. The exact method of calculating the average field strength shall be submitted with any application for certification or shall be retained in the measurement data file for equipment subject to notification or verification.

§ 15.37 Transition provisions for compliance with the rules.

Equipment may be authorized, manufactured and imported under the rules in effect prior to June 26, 1989 in accordance with the following schedules:

(a) *For all intentional and unintentional radiators, except for receivers.* Radio frequency equipment verified by the responsible party or for which an application for a grant of equipment authorization is submitted to the Commission on or after June 23, 1992 shall comply with the regulations specified in this part. Radio frequency equipment that is manufactured or imported on or after June 23, 1994, shall comply with the regulations specified in this part.

(b) *For receivers.* Receivers subject to the regulations in this Part that are manufactured or imported on or after June 23, 1999 shall comply with the regulations specified in this part. However, if a receiver is associated with a transmitter that could not have been authorized under the regulations in effect prior to June 26, 1989, e.g., a transmitter operating under the provisions of §§ 15.209 or 15.249 (below 960 MHz), the transition provisions in this section do not apply. Such receivers must comply with the regulations in this part.

(c) There are no restrictions on the operation or marketing of equipment complying with the regulations in effect prior to June 26, 1989.

Subpart B—Unintentional Radiators

§ 15.101 Equipment authorization of unintentional radiators.

(a) Except as otherwise exempted in §§ 15.23, 15.103, and 15.113, unintentional radiators shall be authorized by the Commission or verified prior to the initiation of marketing, as follows:

Type of device	Equipment authorization required [1]
TV broadcast receiver	Verification.
FM broadcast receiver	Do.
CB receiver	Certification.
Superregenerative receiver	Do.
Scanning receiver	Do.
All other receivers subject to Part 15.	Notification.
TV interface device	Certification.
Cable system terminal device	Notification.
Stand-alone cable input selector switch.	Verification.
Class B personal computers & peripherals.	Certification.
Other Class B digital devices & peripherals.	Verification.
Class A digital devices & peripherals.	Do.
External switching power supplies.	Do.
All other devices	Do.

[1] See additional provisions in this section and in § 15.103 of this part.

(b) Only those receivers that operate (tune) within the frequency range of 30–960 MHz and CB receivers are subject to the authorizations shown in paragraph (a) of this section. However, receivers indicated as being subject to notification that are contained within a transceiver, the transmitter portion of which is subject to type acceptance, certification or notification, shall be authorized under the verification procedure. Receivers operating above 960 MHz or below 30 MHz, except for CB receivers, are exempt from complying with the technical provisions of this part but are subject to § 15.5.

(c) Personal computer mother boards (the circuit board performing the central processing) that are marketed assembled with an enclosure and a

power supply must be certificated with that enclosure and power supply.

(d) Peripheral devices, as defined in § 15.3(r), shall be certified or verified, as appropriate, prior to marketing. However, if a peripheral always will be marketed with a specific personal computer, it is not necessary to obtain a separate grant of certification for that peripheral, provided the specific combination of personal computer and peripheral has received a grant of certification.

(e) Subassemblies to digital devices are not subject to the technical standards in this part unless they are marketed as part of a system in which case the resulting system must comply with the applicable regulations. Subassemblies include: Those devices that are enclosed solely within the enclosure housing the digital device and are not included in the definition of peripherals in § 15.3(r), such as internal disc drives and memory expansion units; digital devices marketed to another manufacturer to be incorporated into a final product; circuit boards containing the central processing unit that are marketed without an enclosure or power supply; and, switching power supplies that are separately marketed and are solely for use internal to a digital device.

(f) The procedures for obtaining a grant of certification or notification and for verification are contained in Subpart J of Part 2 of this chapter.

§ 15.103 Exempted devices.

The following devices are subject only to the general conditions of operation in §§ 15.5 and 15.29 and are exempt from the specific technical standards and other requirements contained in this part. The operator of the exempted device shall be required to stop operating the device upon a finding by the Commission or its representative that the device is causing harmful interference. Operation shall not resume until the condition causing the harmful interference has been corrected. Although not mandatory, it is strongly recommended that the manufacturer of an exempted device endeavor to have the device meet the specific technical standards in this part.

(a) A digital device utilized exclusively in any transportation vehicle including motor vehicles and aircraft.

(b) A digital device used exclusively as an electronic control or power system utilized by a public utility or in an industrial plant. The term public utility includes equipment only to the extent that it is in a dedicated building or large room owned or leased by the utility and does not extend to equipment installed in a subscriber's facility.

(c) A digital device used exclusively as industrial, commercial, or medical test equipment.

(d) A digital device utilized exclusively in an appliance, e.g., microwave oven, dishwasher, clothes dryer, air conditioner (central or window), etc.

(e) Specialized medical digital devices (generally used at the direction of or under the supervision of a licensed health care practitioner) whether used in a patient's home or a health care facility. Non-specialized medical devices, i.e., devices marketed through retail channels for use by the general public, are not exempted. This exemption also does not apply to digital devices used for record keeping or any purpose not directly connected with medical treatment.

(f) Digital devices that have a power consumption not exceeding 6 nW.

(g) Joystick controllers or similar devices, such as a mouse, used with digital devices but which contain only non-digital circuitry or a simple circuit to convert the signal to the format required (e.g., an integrated circuit for analog to digital conversion) are viewed as passive add-on devices, not themselves directly subject to the technical standards or the equipment authorization requirements.

(h) Digital devices in which both the highest frequency generated and the highest frequency used are less than 1.705 MHz and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Digital devices that include, or make provision for the use of, battery eliminators, AC adaptors or battery chargers which permit operation while charging or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, do not fall under this exemption.

(i) Responsible parties should note that equipment containing more than one device is not exempt from the technical standards in this part unless all of the devices in the equipment meet the criteria for exemption. If only one of the included devices qualifies for exemption, the remainder of the equipment must comply with any applicable regulations. If a device performs more than one function and all of those functions do not meet the criteria for exemption, the device does not qualify for inclusion under the exemptions.

§ 15.105 Information to the user.

(a) For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

(b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

(c) The provisions of paragraphs (a) and (b) of this section do not apply to digital devices exempted from the technical standards under the provisions of § 15.103.

(d) For systems incorporating several digital devices, the statement shown in paragraph (a) or (b) of this section needs to be contained only in the instruction manual for the main control unit.

§ 15.107 Conducted limits.

(a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC

power line on any frequency or frequencies within the band 450 kHz to 30 MHz shall not exceed 250 microvolts. Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

(b) For a Class A digital device that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 450 kHz to 30 MHz shall not exceed the limits in the following table. Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals. The lower limit applies at the band edges.

Frequency of emission (MHz)	Conducted limit (microvolts)
0.45 to 1.705	1000
1.705 to 30.0	3000

(c) For carrier current systems used as unintentional radiators whose emissions are contained within the frequency range 450 kHz to 30 MHz, the provisions of this section shall not apply. Such systems are subject to radiated emission limits as provided in § 15.109(e).

(d) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provision for, the use of battery chargers which permit operating while charging, AC adaptors or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

§ 15.109 Radiated emission limits.

(a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of emission (MHz)	Field strength (microvolts/meter)
30–88	100
88–216	150
216–960	200
Above 960	500

(b) The field strength of radiated emissions from a Class A digital device, as determined at a distance of 10 meters, shall not exceed the following:

Frequency of emission (MHz)	Field strength (microvolts/meter)
30–88	90
88–216	150
216–960	210
Above 960	300

(c) In the emission tables above, the tighter limit applies at the band edges. Sections 15.33 and 15.35 which specify the frequency range over which radiated emissions are to be measured and the detector functions and other measurement standards apply.

(d) For CB receivers, the field strength of radiated emissions within the frequency range of 25–30 MHz shall not exceed 40 microvolts/meter at a distance of 3 meters. The field strength of radiated emissions above 30 MHz from such devices shall comply with the limits in paragraph (a) of this section.

(e) Carrier current systems used as unintentional radiators or other unintentional radiators that are designed to conduct their radio frequency emissions via connecting wires or cables and that operate in the frequency range of 9 kHz to 30 MHz, including devices that deliver the radio frequency energy to transducers, such as ultrasonic devices not covered under Part 18 of this chapter, shall comply with the radiated emission limits for intentional radiators provided in § 15.209 for the frequency range of 9 kHz to 30 MHz. At frequencies above 30 MHz, the provisions of paragraph (a) of this section apply.

(f) For a receiver which employs terminals for the connection of an external receiving antenna, the receiver shall be tested to demonstrate compliance with the provisions of this section with an antenna connected to the antenna terminals unless the antenna conducted power is measured as specified in § 15.111(a). If a permanently attached receiving antenna is used, the receiver shall be tested to demonstrate compliance with the provisions of this section.

§ 15.111 Antenna power conduction limits for receivers.

(a) In addition to the radiated emission limits, receivers that operate (tune) in the frequency range 30 to 960 MHz and CB receivers that provide terminals for the connection of an external receiving antenna may be tested to demonstrate compliance with the provisions of § 15.109 with the antenna terminals shielded and terminated with a resistive termination equal to the impedance specified for the antenna, provided these receivers also comply with the following: With the receiver antenna terminal connected to a resistive termination equal to the impedance specified or employed for the antenna, the power at the antenna terminal at any frequency within the range of measurements specified in § 15.33 shall not exceed 2.0 nanowatts.

(b) CB receivers and receivers that operate (tune) in the frequency range 30 to 960 MHz that are provided only with a permanently attached antenna shall comply with the radiated emission limitations in this part, as measured with the antenna attached.

§ 15.113 Power line carrier systems.

Power line carrier systems, as defined in § 15.3(t), are subject only to the following requirements:

(a) A power utility operating a power line carrier system shall submit the details of all existing systems plus any proposed new systems or changes to existing systems to an industry-operated entity as set forth in § 90.63(g) of this chapter. No notification to the FCC is required.

(b) The operating parameters of a power line carrier system (particularly the frequency) shall be selected to achieve the highest practical degree of compatibility with authorized or licensed users of the radio spectrum. The signals from this operation shall be contained within the frequency band 9 kHz to 490 kHz. A power line carrier system shall operate on an unprotected, non-interference basis in accordance with § 15.5 of this part. If harmful interference occurs, the electric power utility shall discontinue use or adjust its power line carrier operation, as required, to remedy the interference. Particular attention should be paid to the possibility of interference to Loran C operations at 100 kHz.

(c) Power line carrier system apparatus shall be operated with the minimum power possible to accomplish the desired purpose. No equipment authorization is required.

(d) The best engineering principles shall be used in the generation of radio

frequency currents by power line carrier systems to guard against harmful interference to authorized radio users, particularly on the fundamental and harmonic frequencies.

(e) Power line carrier system apparatus shall conform to such engineering standards as may be promulgated by the Commission. In addition, such systems should adhere to industry approved standards designed to enhance the use of power line carrier systems.

(f) These provisions for power line carrier systems apply only to systems operated by a power utility for general supervision of the power system and do not permit operation on electric lines which connect the distribution substation to the customer or house wiring.

§ 15.115 TV interface devices, including cable system terminal devices.

(a) Measurements of the radiated emissions of a TV interface device shall be conducted with the output terminal(s) of the device terminated by a resistance equal to the rated output impedance. The emanations of a TV interface device incorporating an intentional radiator shall not exceed the limits in § 15.109 or Subpart C of this part, whichever is higher for each frequency. Where it is possible to determine which portion of the device is contributing a particular radio frequency emission, the emissions from the TV interface device portion shall comply with the emission limits in § 15.109, and the emissions from the intentional radiator shall comply with Subpart C of this part.

(b) Output signal limits:

(1) At any RF output terminal, the maximum measured RMS voltage, in microvolts, corresponding to the peak envelope power of the modulated signal during maximum amplitude peaks across a resistance (R in ohms) matching the rated output impedance of the TV interface device, shall not exceed the following:

(i) For a cable system terminal device or a TV interface device used with a master antenna, 692.8 times the square root of (R) for the video signal and 155 times the square root of (R) for the audio signal.

(ii) For all other TV interface devices, 346.4 times the square root of (R) for the video signal and 77.5 times the square root of (R) for the audio signal.

(2) At any RF output terminal, the maximum measured RMS voltage, in microvolts, corresponding to the peak envelope power of the modulated signal during maximum amplitude peaks across a resistance (R in ohms) matching the rated output impedance of the TV interface device, of any emission appearing on frequencies removed by more than 4.6 MHz below or 7.4 MHz above the video carrier frequency on which the TV interface device is operated shall not exceed the following:

(i) For a cable system terminal device or a TV interface device used with a master antenna, 692.8 times the square root of (R).

(ii) For all other TV interface devices, 10.95 times the square root of (R).

(3) The term "master antenna" used in this paragraph refers to TV interface devices employed for central distribution within large buildings such as apartments, hospitals, office buildings, etc.

(c) A TV interface device shall be equipped with a transfer switch for connecting the antenna terminals of a receiver selectively either to the receiving antenna or to the radio frequency output of the TV interface device, subject to the following:

(1) When measured in any of its set positions, transfer switches shall comply with the following requirements:

(i) For a cable system terminal device or a TV interface device equipped for use with a cable system or a master antenna, as defined in paragraph (b)(3) of this section, the isolation between the antenna and cable input terminals shall be at least 80 dB from 54 to 216 MHz and at least 60 dB from 216 to 550 MHz. The 80 dB limit applies at 216 MHz. In the case of a transfer switch requiring a power source, the required isolation shall be maintained in the event the device is not connected to a power source or power is interrupted.

(ii) For all other TV interface devices, the maximum voltage, corresponding to the peak envelope power of the modulated video signal during maximum amplitude peaks, in microvolts, appearing at the receiving antenna input terminals when terminated with a resistance (R in ohms) matching the rated impedance of the antenna input of the switch, shall not exceed 0.346 times the square root of (R).

(iii) Measurement to determine compliance with the transfer switch limits shall be made using a connecting cable, where required, between the TV interface device and the transfer switch of the type and length:

(A) Provided with the TV interface device,

(B) Recommended in the instruction manual, or

(C) Normally employed by the consumer.

(2) A TV interface device shall be designed and constructed, to the extent practicable, so as to preclude the possibility that the consumer may inadvertently attach the output of the device to the receiving antenna, if any, without first going through the transfer switch.

(3) A transfer switch is not required for a TV interface device that, when connected, results in the user no longer having any need to receive standard over-the-air broadcast signals via a separate antenna. A transfer switch is not required to be marketed with a cable system terminal device unless that device provides for the connection of an external antenna. A transfer switch is not required for a device that is intended to be used as an accessory to an authorized TV interface device.

(4) An actual transfer switch is not required for a TV interface device, including a cable system terminal device, that has an antenna input terminal(s); provided, the circuitry following the antenna input terminal(s) has sufficient bandwidth to allow the reception of all TV broadcast channels authorized under Part 73 of this chapter and: For a cable system terminal device that can alternate between the reception of cable television service and an antenna, compliance with the isolation requirement specified in paragraph (c)(1)(i) of this section can be demonstrated; and, for all other TV interface devices, the maximum voltage appearing at the antenna terminal(s) does not exceed the limit in paragraph (c)(1)(ii) of this section.

(5) If a transfer switch is not required, the following label shall be used in addition to the label shown in § 15.19(a):

> This device is intended to be attached to a receiver that is not used to receive over-the-air broadcast signals. Connection of this device in any other fashion may cause harmful interference to radio communications and is in violation of the FCC Rules, Part 15.

(d) A TV interface device, including a cable system terminal device, shall incorporate circuitry to automatically prevent emanations from the device from exceeding the technical specifications in this part. These circuits shall be adequate to accomplish their functions when the TV interface device is presented, if applicable, with video input signal levels in the range of one to five volts; this requirement is not applicable to a TV interface device that uses a built-in signal source and has no provisions for the connection of an external signal source. For devices that contain provisions for an external signal source but do not contain provisions for the input of an external baseband signal, e.g., some cable system terminal devices, compliance with the provisions of this paragraph shall be demonstrated

with a radio frequency input signal of 0 to 25 dBmV.

(e) For cable system terminal devices and TV interface devices used with a master antenna, as defined in paragraph (b)(3) of this section, the holder of the grant of authorization shall specify in the instruction manual or pamphlet, if a manual is not provided, the types of wires or coaxial cables necessary to ensure that the unit complies with the requirements of this part. The holder of the grant of authorization must comply with the provisions of § 15.27. For all other TV interface devices, the wires or coaxial cables used to couple the output signals to the TV receiver shall be provided by the responsible party.

(f) A TV interface device which is submitted to the Commission as a composite device in a single enclosure containing a RF modulator, video source and other component devices shall be submitted on a single application (FCC Form 731) and shall be authorized as a single device.

(g) An external device or accessory that is intended to be attached to a TV interface device shall comply with the technical and administrative requirements set out in the rules under which it operates. For example, a personal computer must be certificated to show compliance with the regulations for digital devices.

§ 15.117 TV broadcast receivers.

(a) All TV broadcast receivers shipped in interstate commerce or imported from any foreign country into the United States, for sale or resale to the public, shall comply with the provisions of this section. The reference in this section to TV broadcast receivers also includes devices, such as TV interface devices, that incorporate the tuner portion of a TV broadcast receiver and that are equipped with an antenna or antenna terminals that can be used for the off-the-air reception of TV broadcast signals, as authorized under Part 73 of this chapter.

(b) TV broadcast receivers shall be capable of adequately receiving all channels allocated by the Commission to the television broadcast service.

(c) On a given receiver, use of the UHF and VHF tuning systems shall provide approximately the same degree of tuning accuracy with approximately the same expenditure of time and effort: *Provided, however*, That this requirement will be considered to be met if the need for routine fine tuning is eliminated on UHF channels.

(1) *Basic tuning mechanism.* If a TV broadcast receiver is equipped to provide for repeated access to VHF television channels at discrete tuning positions, that receiver shall be equipped to provide for repeated access to a minimum of six UHF television channels at discrete tuning positions. Unless a discrete tuning position is provided for each channel allocated to UHF television, each position shall be readily adjustable to a particular UHF channel by the user without the use of tools. If 12 or fewer discrete tuning positions are provided, each position shall be adjustable to receive any channel allocated to UHF television.

Note: The combination of detented rotary switch and pushbutton controls is acceptable, provided UHF channels, after their initial selection, can be accurately tuned with an expenditure of time and effort approximately the same as that used in accurately tuning VHF channels. A UHF tuning system comprising five pushbuttons and a separate manual tuning knob is considered to provide repeated access to six channels at discrete tuning positions. A one-knob (VHF/UHF) tuning system providing repeated access to 11 or more discrete tuning positions is also acceptable, provided each of the tuning positions is readily adjustable, without the use of tools, to receive any UHF channel.

(2) *Tuning controls and channel readout.* UHF tuning controls and channel readout on a given receiver shall be comparable in size, location, accessibility and legibility to VHF controls and readout on that receiver.

Note: Differences between UHF and VHF channel readout that follow directly from the larger number of UHF television channels available are acceptable if it is clear that a good faith effort to comply with the provisions of this section has been made.

(d) If equipment and controls that tend to simplify, expedite or perfect the reception of television signals (e.g., AFC, visual aids, remote control, or signal seeking capability referred to generally as tuning aids) are incorporated into the VHF portion of a TV broadcast receiver, tuning aids of the same type and comparable capability and quality shall be provided for the UHF portion of that receiver.

(e) If a television receiver has an antenna affixed to the VHF antenna terminals, it must have an antenna designed for and capable of receiving all UHF television channels affixed to the UHF antenna terminals. If a VHF antenna is provided with but not affixed to a receiver, a UHF antenna shall be provided with the receiver.

(f) The picture sensitivity of a TV broadcast receiver averaged for all channels between 14 and 69 inclusive shall not be more than 8dB larger than the peak picture sensitivity of that receiver averaged for all channels between 2 and 13 inclusive.

(g) The noise figure for any television channel 14 to 69 inclusive shall not exceed 14 dB. A TV receiver model is considered to comply with this noise figure if the maximum noise figure for channels 14–69 inclusive of 97.5% of all receivers within that model does not exceed 14 dB.

(1) The responsible party shall measure the noise figure of a number of UHF channels of the test sample to give reasonable assurance that the UHF noise figure for each channel complies with the above limit.

(2) The responsible party shall insert in his files a statement explaining the basis on which it will rely to ensure that at least 97.5% of all production units of the test sample that are manufactured have a noise figure of no greater than 14 dB.

(3) Within one year after a specific TV receiver model has been verified for compliance, the responsible party shall file a report with the Commission giving the actual UHF noise figure performance of units of that model actually measured during that year. The report, as an alternative, may be filed by the party responsible for the marketing of that model TV broadcast receiver within this country.

(4) In the case of a TV tuner built-in as part of a video tape recorder that uses a power splitter between the antenna terminals of the video tape recorder and the input terminals of the TV tuner or a TV broadcast receiver that uses a power splitter between the antenna terminals of two or more UHF tuners contained within that receiver, 4 dB may be subtracted from the noise figure measured at the antenna terminals of the video tape recorder or TV broadcast receiver for determining compliance of the UHF tuner(s) with the 14 dB noise figure limit.

(h) For a TV broadcast receiver equipped with a cable input selector switch, the selector switch shall provide in any of its set positions isolation between the antenna and cable input terminals of at least 80 dB from 54 to 216 MHz, and of at least 60 dB from 216 to 550 MHz. At MHz, the 80 dB isolation standard applies. In the case of a selector switch requiring a power source, the required isolation shall be maintained in the event the device is not connected to a power source or power is interrupted. A physical cable input selector switch is not required for a TV broadcast receiver that can alternate between the reception of cable television service and an antenna, provided compliance with the isolation requirement specified in this paragraph can be demonstrated and the circuitry

following the antenna input terminal(s) has sufficient bandwidth to allow the reception of all TV broadcast channels authorized under this chapter.

Subpart C—Intentional Radiators

§ 15.201 Equipment authorization requirement.

(a) Intentional radiators operated as carrier current systems and devices operated under the provisions of §§ 15.211, 15.213 and 15.221 shall be verified pursuant to the procedures in Subpart J of Part 2 of this chapter prior to marketing.

(b) Except as otherwise exempted in paragraph (c) of this section and in § 15.23 of this part, all intentional radiators operating under the provisions of this part shall be certificated by the Commission pursuant to the procedures in Subpart J of Part 2 of this chapter prior to marketing.

(c) For devices such as perimeter protection systems which, in accordance with § 15.31(d), are required to be measured at the installation site, each application for certification must be accompanied by a statement indicating that the system has been tested at three installations and found to comply at each installation. Until such time as certification is granted, a given installation of a system that was measured for the submission for certification will be considered to be in compliance with the provisions of this chapter, including the marketing regulations in Subpart I of Part 2 of this chapter, if tests at that installation show the system to be in compliance with the relevant technical requirements. Similarly, where measurements must be performed on site for equipment subject to verification, a given installation that has been verified to demonstrate compliance with the applicable standards will be considered to be in compliance with the provisions of this chapter, including the marketing regulations in Subpart I of Part 2 of this chapter.

(d) For perimeter protection systems operating in the frequency bands allocated to television broadcast stations operating under Part 73 of this chapter, the holder of the grant of certification must test each installation prior to initiation of normal operation to verify compliance with the technical standards and must maintain a list of all installations and records of measurements. For perimeter protection systems operating outside of the frequency bands allocated to television broadcast stations, upon receipt of a grant of certification, further testing of the same or similar type of system or installation is not required.

§ 15.203 Antenna requirement.

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, 15.213, 15.217, 15.219, 15.221, or 15.247. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

§ 15.205 Restricted bands of operation.

(A) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090–0.110	162.0125–167.17	2310–2390	9.3–9.5.
0.49–0.51	167.72–173.2	2438.5–2500	10.6–12.7.
2.1735–2.1905	240–285	2655–2900	13.25–13.4.
8.362–8.366	322–335.4	3260–3267	14.47–14.5
13.36–13.41	399.9–410	3332–3339	15.35–16.2.
25.5–25.67	608–614	3345.8–3358	17.7–21.4.
37.5–38.25	960–1240	3600–4400	22.01–23.12.
73–75.4	1300–1427	4500–5250	23.6–24.0.
108–121.94	1435–1626.5	5350–5460	31.2–31.8.
123–138	1660–1710	7250–7750	36.43–36.5.
149.9–150.05	1718.8–1722.2	8025–8500	Above 38.6.
156.7–156.9	2200–2300	9000–9200	

(b) Except as provided in paragraph (d) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in § 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35 apply to these measurements.

(c) Except as provided in paragraph (d) of this section, regardless of the field strength limits specified elsewhere in this subpart, the provisions of this section apply to emissions from any intentional radiator.

(d) The following devices are exempt from the requirements of this section:

(1) Swept frequency field disturbance sensors operating between 1.705 and 37 MHz provided their emissions only sweep through the bands listed in paragraph (a) of this section, the sweep is never stopped with the fundamental emission within the bands listed in paragraph (a) of this section, and the fundamental emission is outside of the bands listed in paragraph (a) of this section more than 99% of the time the device is actively transmitting, without compensation for duty cycle.

(2) Transmitters used to detect buried electronic markers at 101.4 kHz which are employed by telephone companies.

(3) Cable locating equipment operated pursuant to § 15.213.

§ 15.207 Conducted limits.

(a) For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted

back onto the AC power line on any frequency or frequencies within the band 450 kHz to 30 MHz shall not exceed 250 microvolts. Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

(b) The limit in paragraph (a) of this section shall not apply to intentional radiators operated as carrier current systems in the frequency range of 450 kHz to 30 mHz. Such systems are subject to radiated emission limits as provided in §§ 15.205 and 15.209.

(c) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provision for, the use of battery chargers which permit operating while charging, AC adaptors or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

§ 15.209 Radiated emission limits, general requirements.

(a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	[1] 100	3
88–216	[1] 150	3
216–96	[1] 200	3
Above 960	500	3

[1] Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54–72 MHz, 76–88 MHz, 174–216 MHz or 470–806 MHz.

(b) In the emission table above, the tighter limit applies at the band edges.

(c) The level of any unwanted emissions from an intentional radiator operating under these general provisions shall not exceed the level of the fundamental emission. For intentional radiators which operate under the provisions of other sections within this part and which are required to reduce their unwanted emissions to the limits specified in this table, the limits in this table are based on the frequency of the unwanted emission and not the fundamental frequency. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.

(d) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

(e) The provisions in §§ 15.31, 15.33, and 15.35 for measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.

(f) In accordance with § 15.33(a), in some cases the emissions from an intentional radiator must be measured to beyond the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator because of the incorporation of a digital device. If measurements above the tenth harmonic are so required, the radiated emissions above the tenth harmonic shall comply with the general radiated emission limits applicable to the incorporated digital device, as shown in § 15.109 and as based on the frequency of the emission being measured, or, except for emissions contained in the restricted frequency bands shown in § 15.205, the limit on spurious emissions specified for the intentional radiator, whichever is the higher limit. Emissions which must be measured above the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator and which fall within the restricted bands shall comply with the general radiated emission limits in § 15.109 that are applicable to the incorporated digital device.

(g) Perimeter protection systems operating under the provisions of this Section in the frequency bands allocated to TV broadcast stations, as shown in Part 73 of this chapter, shall contain their fundamental emissions within the frequency bands 54–72 MHz and 76–88 MHz. Further, the use of such perimeter protection systems is limited to industrial, business and commercial applications.

§ 15.211 Tunnel radio systems.

An intentional radiator utilized as part of a tunnel radio system may operate on any frequency provided it meets all of the following conditions:

(a) Operation of a tunnel radio system (intentional radiator and all connecting wires) shall be contained solely within a tunnel, mine or other structure that provides attenuation to the radiated signal due to the presence of naturally surrounding earth and/or water.

(b) Any intentional or unintentional radiator external to the tunnel, mine or other structure, as described in paragraph (a) of this section, shall be subject to the other applicable regulations contained within this part.

(c) The total electromagnetic field from a tunnel radio system on any frequency or frequencies appearing outside of the tunnel, mine or other structure described in paragraph (a) of this section, shall not exceed the limits shown in § 15.209 when measured at the specified distance from the surrounding structure, including openings. Particular attention shall be paid to the emissions from any opening in the structure to the outside environment. When measurements are made from the openings, the distances shown in § 15.209 refer to the distance from the plane of reference which fits the entire perimeter of each above ground opening.

(d) The conducted limits in § 15.207 apply to the radiofrequency voltage on the public utility power lines outside of the tunnel.

§ 15.213 Cable locating equipment.

An intentional radiator used as cable locating equipment, as defined in § 15.3(d), may be operated on any frequency within the band 9–490 kHz, subject to the following limits: Within the frequency band 9 kHz, up to, but not including, 45 kHz, the peak output power from the cable locating equipment shall not exceed 10 watts; and, within the frequency band 45 kHz to 490 kHz, the peak output power from the cable locating equipment shall not exceed one watt. If provisions are made for connection of the cable locating equipment to the AC power lines, the conducted limits in § 15.207 also apply to this equipment.

Radiated Emission Limits, Additional Provisions

§ 15.215 Additional provisions to the general radiated emission limitations.

(a) The regulations in §§ 15.217 through 15.251 provide alternatives to the general radiated emission limits for intentional radiators operating in specified frequency bands. Unless otherwise stated, there are no restrictions as to the types of operation permitted under these sections.

(b) In most cases, unwanted emissions outside of the frequency bands shown in these alternative provisions must be attenuated to the emission limits shown

in § 15.209. In no case shall the level of the unwanted emissions from an intentional radiator operating under these additional provisions exceed the field strength of the fundamental emission.

(c) For those bands of frequencies where alternative radiated emission limitations apply and for which a frequency stability is not specified, it is recommended that the fundamental frequency be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

(d) Where the following sections specify limits on the bandwidth of the emissions, the bandwidth limits include the effects of frequency sweeping, frequency hopping, and other modulation techniques which may be employed.

§ 15.217 Operation in the band 160–190 kHz.

(a) The total input power to the final radio frequency stage (exclusive of filament or heater power) shall not exceed one watt.

(b) The total length of the transmission line, antenna, and ground lead (if used) shall not exceed 15 meters.

(c) All emissions below 160 kHz or above 190 kHz shall be attenuated at least 20 dB below the level of the unmodulated carrier. Determination of compliance with the 20 dB attenuation specification may be based on measurements at the intentional radiator's antenna output terminal unless the intentional radiator uses a permanently attached antenna, in which case compliance shall be demonstrated by measuring the radiated emissions.

§ 15.219 Operation in the band 510–1705 kHz.

(a) The total input power to the final radio frequency stage (exclusive of filament or heater power) shall not exceed 100 milliwatts.

(b) The total length of the transmission line, antenna and ground lead (if used) shall not exceed 3 meters.

(c) All emissions below 510 kHz or above 1705 kHz shall be attenuated at least 20 dB below the level of the unmodulated carrier. Determination of compliance with the 20 dB attenuation specification may be based on measurements at the intentional radiator's antenna output terminal unless the intentional radiator uses a permanently attached antenna, in which case compliance shall be deomonstrated by measuring the radiated emissions.

§ 15.221 Operation in the band 525–1705 kHz.

(a) The provisions of this section are restricted to the operation of an AM broadcast station on a college or university campus or on the campus of any other educational institution. Operation is restricted to the ground of the campus. For the band 535–1705 kHz, the frequency of operation shall be chosen such that operation is not within the protected field strength contours of licensed AM stations.

(b) On the campus, the field strength of emissions appearing outside of this frequency band shall not exceed the general radiated emission limits shown in § 15.209 as measured from the radiating source. There is no limit on the field strength of emissions appearing within this frequency band, except that the provisions of § 15.5 continue to apply.

(c) At the perimeter of the campus, the field strength of any emissions, including those within the frequency band 525–1705 kHz, shall not exceed the general radiated emission limits in § 15.209.

(d) The conducted limits specified in § 15.207 apply to the radio frequency voltatge on the public utility power lines outside of the campus. Due to the large number of radio frequency devices which may be used on the campus, contributing to the conducted emissions, as an alternative to measuring conducted emissions on the AC power lines outside of the campus, it is acceptable to demonstrate compliance with this provision by measuring each individual intentional radiator employed in the system at the point where it connects to the AC power lines. As provided in § 15.207(b), if only a carrier current system is employed, the AC power line conducted limits do not apply. However, the radiated emission limits provided in this section apply to carrier current systems.

(e) A grant of equipment authorization is not required for a campus radio system. In lieu thereof, a campus radio system shall be verified for compliance with the regulations in accordance with Subpart J of Part 2 of this chapter. This data shall be kept on file at the location of the studio, office or control room associated with the transmitting equipment. In some cases, this may correspond to the location of the transmitting equipment.

§ 15.223 Operation in the band 1.705–10 MHz.

(a) The field strength of any emission within the band 1.705–10.0 MHz shall not exceed 100 microvolts/meter at a distance of 30 meters. However, if the bandwidth of the emission is less than 10% of the center frequency, the field strength shall not exceed 15 microvolts/meter or (the bandwidth of the device in kHz) divided by (the center frequency of the device in MHz) microvolts/meter at a distance of 30 meters, whichever is the higher level. For the purposes of this section, bandwidth is determined at the points 6 dB down from the modulated carrier. The emission limits in this paragraph are based on measurement instrumentation employing an average detector. The provisions in § 15.35(b) for limiting peak emissions apply.

(b) The field strength of emissions outside of the band 1.705–10.0 MHz shall not exceed the general radiated emission limits in § 15.209.

§ 15.225 Operation within the band 13.553–13.567 MHz.

(a) The field strength of any emissions within this band shall not exceed 10,000 microvolts/meter at 30 meters.

(b) The field strength of any emissions appearing outside of this band shall not exceed the general radiated emission limits shown in § 15.209.

(c) The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a temperature variation of −20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

§ 15.227 Operation within the band 26.96–27.28 MHz.

(a) The field strength of any emission within this band shall not exceed 10,000 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in § 15.35 for limiting peak emissions apply.

(b) The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in § 15.209.

§ 15.229 Operation within the band 40.66–40.70 MHz.

(a) Unless operating pursuant to the provisions in § 15.231, the field strength of any emissions within this band shall not exceed 1,000 microvolts/meter at 3 meters.

(b) The field strength of any emissions appearing outside of this band shall not exceed the general radiated emission limits in § 15.209.

(c) The frequency tolerance of the carrier signal shall be maintained within

±0.01% of the operating frequency over a temperature variation of −20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

§ 15.231 Periodic operation in the band 40.66–40.70 MHz and above 70 MHz.

(a) The provisions of this section are restricted to periodic operation within the band 40.66–40.70 MHz and above 70 MHz. Except as shown in paragraph (e) of this section, the intentional radiator is restricted to the transmission of a control signal such as those used with alarm systems, door openers, remote switches, etc. Radio control of toys is not permitted. Continuous transmissions, such as voice or video, and data transmissions are not permitted. The prohibition against data transmissions does not preclude the use of recognition codes. Those codes are used to identify the sensor that is activated or to identify the particular component as being part of the system. The following conditions shall be met to comply with the provisions for this periodic operation:

(1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

(2) A transmitter activated automatically shall cease transmission within 5 seconds after activation.

(3) Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions to determine system integrity of transmitters used in security or safety applications are allowed if the periodic rate of transmission does not exceed one transmission of not more than one second duration per hour for each transmitter.

(4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm condition

(b) In addition to the provisions of § 15.205, the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emissions (microvolts/meter)
40.66–40.70.	2,250	225
70–130	1,250	125
130–174	[1] 1,250 to 3,750	[1] 125 to 375
174–260	3,750	375
260–470	[1] 3,750 to 12,500	[1] 375 to 1,250
Above 470	12,500	1,250

[1] Linear interpolations.

(1) The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the band edges.

(2) Intentional radiators operating under the provisions of this Section shall demonstrate compliance with the limits on the field strength of emissions, as shown in the above table, based on the average value of the measured emissions. As an alternative, compliance with the limits in the above table may be based on the use of measurement instrumentation with a CISPR quasi-peak detector. The specific method of measurement employed shall be specified in the application for equipment authorization. If average emission measurements are employed, the provisions in § 15.35 for averaging pulsed emissions and for limiting peak emissions apply. Further, compliance with the provisions of § 15.205 shall be demonstrated using measurement instrumentation with a CISPR quasi-peak detector.

(3) The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average limits shown in this table or to the general limits shown in § 15.209, as measured with a CISPR quasi-peak detector, whichever limit permits a higher field strength.

(c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

(d) For devices operating within the frequency band 40.66–40.70 MHz, the bandwidth of the emission shall be confined within the band edges and the frequency tolerance of the carrier shall be ± 0.01%. This frequency tolerance shall be maintained for a temperature variation of −20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

(e) Intentional radiators may operate at a periodic rate exceeding that specified in paragraph (a) of this section and may be employed for any type of operation, including operation prohibited in paragraph (a) of this section, provided the intentional radiator complies with the provisions of paragraphs (b) through (d) of this section, except the field strength table in paragraph (b) of this section is replaced by the following:

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emission (microvolts/meter)
40.66–40.70.	1,000	100
70–130	500	50
130–174	500 to 1,500 [1]	50 to 150 [1]
174–260	1,500	150
260–470	1,500 to 5,000 [1]	150 to 500 [1]
Above 470	5,000	500

[1] Linear interpolations.

In addition, devices operated under the provisions of this paragraph shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

§ 15.233 Operation within the bands 46.60–46.98 MHz and 49.66–50.0 MHz.

(a) The provisions shown in this section are restricted to cordless telephones.

(b) An intentional radiator used as part of a cordless telephone system shall operate on one or more of the following frequency pairs:

Channel	Base transmitter (MHz)	Handset transmitter (MHz)
1	46.610	49.670
2	46.630	49.845
3	46.670	49.860
4	46.710	49.770
5	46.730	49.875
6	46.770	49.830
7	46.830	49.890
8	46.870	49.930
9	46.930	49.990
10	46.970	49.970

(c) The field strength of the fundamental emission shall not exceed 10,000 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The

provisions in § 15.35 for limiting peak emissions apply.

(d) The fundamental emission shall be confined with a 20 kHz band centered on the actual carrier frequency. Modulation products outside of this 20 kHz band shall be attenuated at least 26 dB below the level of the unmodulated carrier or to the general limits in § 15.209, whichever permits the higher emission levels. Emissions on any frequency more than 20 kHz removed from the center frequency shall consist solely of unwanted emissions and shall not exceed the general radiated emission limits in § 15.209.

(e) All emissions exceeding 20 microvolts/meter at 3 meters are to be reported in the application for certification. Tests to determine compliance with this requirement shall be performed using an appropriate input signal as prescribed in § 2.989 of this chapter.

(f) If the device provides for the connection of external accessories, including external electrical input signals, the device must be tested with the accessories attached. The emission tests shall be performed with the device and accessories configured in a manner which tends to produce the maximum level of emissions within the range of variations that can be expected under normal operating conditions.

(g) The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency. The tolerance shall be maintained for a temperature variation of −20 degrees C to +50 degrees C at normal supply voltage, and for variation in the primary voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

(h) For equipment authorization, a single application form, FCC Form 731, may be filed for a cordless telephone system, provided the application clearly identifies and provides data for all parts of the system to show compliance with the applicable technical requirements. When a single application form is submitted, both the base station and the portable handset must carry the same FCC identifier. The application shall include a fee for certification of each type of transmitter and notification or certification, if appropriate, for each type of receiver included in the system.

(i) A cordless telephone which is intended to be connected to the public telephone network shall also comply with the applicable regulations in Part 68 of this chapter. A separate application for registration under Part 68 is required.

(j) The label required under Subpart A shall also contain the following statement: "Privacy of communications may not be ensured when using this phone."

(k) The box or other package in which the individual cordless telephone is to be marketed shall carry a statement in a prominent location, visible to the buyer before purchase, which reads as follows:

Notice: The base units of some cordless telephones may respond to other nearby units or to radio noise resulting in telephone calls being dialed through this unit without your knowledge and possibly calls being misbilled. In order to protect against such occurrences, this cordless telephone is provided with the following features: (to be completed by the responsible party).

An application for certification of a cordless telephone shall specify the complete text of the statement that will be carried on the package and indicate where, specifically, it will be located on the carton.

§ 15.235 Operation within the band 49.82–49.90 MHz.

(a) The field strength of any emission within this band shall not exceed 10,000 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in § 15.35 for limiting peak emissions apply.

(b) The field strength of any emissions appearing between the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 26 dB below the level of the unmodulated carrier or to the general limits in § 15.209, whichever permits the higher emission levels. The field strength of any emissions removed by more than 10 kHz from the band edges shall not exceed the general radiated emission limits in § 15.209. All signals exceeding 20 microvolts/meter at 3 meters shall be reported in the application for certification.

(c) For a home-built intentional radiator, as defined in § 15.23(a), operating within the band 49.82–49.90 MHz, the following standards may be employed:

(1) The RF carrier and modulation products shall be maintained within the band 49.82–49.90 MHz.

(2) The total input power to the device measured at the battery or the power line terminals shall not exceed 100 milliwatts under any condition of modulation.

(3) The antenna shall be a single element, one meter or less in length, permanently mounted on the enclosure containing the device.

(4) Emissions outside of this band shall be attenuated at least 20 dB below the level of the unmodulated carrier.

(5) The regulations contained in § 15.23 of this part apply to intentional radiators constructed under the provisions of this paragraph.

(d) Cordless telephones are not permitted to operate under the provisions of this section.

§ 15.237 Operation in the bands 72.0–73.0 MHz and 75.4–76.0 MHz.

(a) The intentional radiator shall be restricted to use as an auditory assistance device.

(b) Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the above specified frequency ranges.

(c) The field strength of any emissions within the permitted 200 kHz band shall not exceed 80 millivolts/meter at 3 meters. The field strength of any emissions radiated on any frequency outside of the specified 200 kHz band shall not exceed 1500 microvolts/meter at 3 meters. The emission limits in this paragraph are based on measurement instrumentation employing an average detector. The provisions in § 15.35 for limiting peak emissions apply.

§ 15.239 Operation in the band 88–108 MHz.

(a) Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88–108 MHz.

(b) The field strength of any emissions within the permitted 200 kHz band shall not exceed 250 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in § 15.35 for limiting peak emissions apply.

(c) The field strength of any emissions radiated on any frequency outside of the specified 200 kHz band shall not exceed the general radiated emission limits in § 15.209.

(d) A custom built telemetry intentional radiator operating in the frequency band of 88–208 MHz and used for experimentation by an educational institute need not be certified provided the device complies with the standards in this Part and the educational institution notifies the Engineer in Charge of the local FCC office, in writing, in advance of operation, providing the following information:

(1) The dates and places where the device will be operated;

(2) The purpose for which the device will be used;

(3) A description of the device, including the operating frequency, RF power output, and antenna; and,

(4) A statement that the device complies with the technical provisions of this part.

§ 15.241 Operation in the band 174–216 MHz.

(a) Operation under the provisions of this section is restricted to biomedical telemetry devices.

(b) Emissions from the device shall be confined within a 200 kHz band which shall lie wholly within the frequency range of 174–216 MHz.

(c) The field strength of any emissions radiated within the specified 200 kHz band shall not exceed 1500 microvolts/meter at 3 meters. The field strength of emissions radiated on any frequency outside of the specified 200 kHz band shall not exceed 150 microvolts/meter at 3 meters. The emission limits in this paragraph are based on measurement instrumentation employing an average detector. The provisions in § 15.35 for limiting peak emissions apply.

§ 15.243 Operation in the band 890–940 MHz.

(a) Operation under the provisions of this section is restricted to devices that use radio frequency energy to measure the characteristics of a material. Devices operated pursuant to the provisions of this section shall not be used for voice communications or the transmission of any other type of message.

(b) The field strength of any emissions radiated within the specified frequency band shall not exceed 500 microvolts/meter at 30 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in § 15.35 for limiting peak emissions apply.

(c) The field strength of emissions radiated on any frequency outside of the specified band shall not exceed the general radiated emission limits in § 15.209.

(d) The device shall be self-contained with no external or readily accessible controls which may be adjusted to permit operation in a manner inconsistent with the provisions in this section. Any antenna that may be used with the device shall be permanently attached thereto and shall not be readily modifiable by the user.

§ 15.245 Operation within the bands 902–928 MHz, 2435–2465 MHz, 5785–5815 MHz, 10500–10550 MHz, and 24075–24175 MHz.

(a) Operation under the provisions of this section is limited to intentional radiators used as field disturbance sensors, excluding perimeter protection systems.

(b) The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency (MHz)	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (millivolts/meter)
902–928	500	1.6
2435–2465	500	1.6
5785–5815	500	1.6
10500–10550	2500	25.0
24075–24175	2500	25.0

(1) Field strength limits are specified at a distance of 3 meters.

(2) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

(3) The emission limits shown in the above table are based on measurement instrumentation employing an average detector. The provisions in § 15.35 for limiting peak emissions apply.

§ 15.247 Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz.

(a) Operation under the provisions of this section is limited to frequency hopping and direct sequence spread spectrum intentional radiators that comply with the following provisions:

(1) For frequency hopping systems, at least 75 hopping frequencies, separated by at least 25 kHz, shall be used. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period. The maximum bandwidth of the hopping channel is 25 kHz.

(2) For direct sequence systems, the minimum 6 dB bandwidth shall be at least 500 kHz.

(b) The maximum peak output power of the intentional radiator shall not exceed one watt.

(c) Radio frequency output power outside these frequency bands over any 100 kHz bandwidth shall be at least 20 dB below that in any 100 kHz bandwidth within the band that contains the highest level of the desired power.

Note: Spread spectrum systems are sharing these bands on a noninterference basis with systems supporting critical Government requirements that have been allocated the usage of these bands, secondary only to ISM equipment operated under the provisions of Part 18 of this chapter. Many of these Government systems are airborne radiolocation systems that emit a high EIRP which can cause interference to other users. Also, investigations of the effect of spread spectrum interference to U. S. Government operations in the 902–928 MHz band may require a future decrease in the power limits allowed for spread spectrum operation.

§ 15.249 Operation within the bands 902–928 MHz, 2400–2483.5 MHz, 5725–5875 MHZ, and 24.0–24.25 GHz

(a) The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

(b) Field strength limits are specified at a distance of 3 meters.

(c) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

(d) As shown in § 15.35(b), for frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

§ 15.251 Operation within the bands 2.9–3.26 GHz, 3.267–3.332 GHz, 3.339–3.3458 GHz, and 3.358–3.6 GHz.

(a) Operation under the provisions of this section is limited to automatic vehicle identification systems (AVIS) which use swept frequency techniques for the purpose of automatically identifying transportation vehicles.

(b) The field strength anywhere within the frequency range swept by the signal shall not exceed 3000 microvolts/meter/MHz at 3 meters in any direction. Further, an AVIS, when in its operating position, shall not produce a field strength greater than 400 microvolts/meter/MHz at 3 meters in any direction within ± 10 degrees of the horizontal

plane. In addition to the provisions of § 15.205, the field strength of radiated emissions outside the frequency range swept by the signal shall be limited to a maximum of 100 microvolts/meter/MHz at 3 meters, measured from 30 MHz to 20 GHz for the complete system. The emission limits in this paragraph are based on measurement instrumentation employing an average detector. The provisions in § 15.35 for limiting peak emissions apply.

(c) The minimum sweep repetition rate of the signal shall not be lower than 4000 sweeps per second, and the maximum sweep repetition rate of the signal shall not exceed 50,000 sweeps per second.

(d) An AVIS shall employ a horn antenna or other comparable directional antenna for signal emission.

(e) Provision shall be made so that signal emission from the AVIS shall occur only when the vehicle to be identified is within the radiated field of the system.

(f) In addition to the labelling requirements in § 15.19(a), the label attached to the AVIS transmitter shall contain a third statement regarding operational conditions, as follows:

* * * and, (3) during this device (the antenna) may not be pointed within ± ** degrees of the horizontal plane.

The double asterisks in condition three (**) shall be replaced by the responsible party with the angular pointing restriction necessary to meet the horizontal emission limit specified in paragraph (b) of this section.

(g) In addition to the information required in Subpart J of Part 2, the application for certification shall contain:

(1) Measurements of field strength per MHz along with the intermediate frequency of the spectrum analyzer or equivalent measuring receiver;

(2) The angular separation between the direction at which maximum field strength occurs and the direction at which the field strength is reduced to 400 microvolts/meter/MHz at 3 meters;

(3) A photograph of the spectrum analyzer display showing the entire swept frequency signal and a calibrated scale for the vertical and horizontal axes; the spectrum analyzer settings that were used shall be labelled on the photograph; and,

(4) The results of the frequency search for spurious and sideband emissions from 30 MHz to 20 GHz, exclusive of the swept frequency band, with the measuring instrument as close as possible to the unit under test.

Federal Communications Commission.

Donna R. Searcy,

Secretary

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47 CFR Part 73

[MM Docket No. 88-465; RM-6393]

Radio Broadcasting Services; Sitka, AK

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This document allots Channel 276C2 to Sitka, Alaska, as that community's first local commercial FM service, in response to a petition for rule making filed on behalf of Alaska Broadcast Communications, Inc. Coordinates used for Channel 276C2 at Sitka are 57-03-00 and 135-20-00. With this action, the proceeding is terminated.

DATES: Effective June 5, 1989; the window period for filing applications on Channel 276C2 at Sitka, Alaska, will open on June 6, 1989, and close on June 9, 1989.

FOR FURTHER INFORMATION CONTACT: Nancy Joyner, Mass Media Bureau, (202) 634-6530. Questions related to the window application filing process should be addressed to the Audio Services Division, FM Branch, Mass Media Bureau, (202) 632-0394.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Report and Order, MM Docket No. 88-465, adopted March 28, 1989, and released April 19, 1989. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Dockets Branch (Room 230), 1919 M Street NW., Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractors, International Transcription Service, (202) 857-3800, 2100 M Street NW., Suite 140, Washington, DC 20037.

List of Subjects in 47 CFR Part 73

Radio broadcasting.

PART 73—[AMENDED]

1. The authority citation for Part 73 continues to read as follows:

Authority: 47 U.S.C. 154, 303.

§ 73.202 [Amended]

2. Section 73.202(b), the Table of FM Allotments for Alaska, is amended by revising the entry for Sitka, by adding Channel 276C2.

Federal Communications Commission.

Karl A. Kensinger,

Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 89-9793 Filed 4-24-89; 8:45 am]

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47 CFR Part 73

[MM Docket No. 88-184; RM-6116]

Radio Broadcasting Services, Ridgecrest, CA

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This document substitutes Channel 224B1 for Channel 224A at Ridgecrest, California, and modifies the Class A license of Bel Air Broadcasting Corporation for Station KZIQ-FM, as requested, to specify operation on the higher class channel, thereby providing that community with its first wide coverage area FM service. Coordinates at the petitioner's perferred site for Channel 224B1 at Ridgecrest are 35-28-39 and 117-41-57. With this action, the proceeding is terminated.

EFFECTIVE DATE: June 5, 1989.

FOR FURTHER INFORMATION CONTACT: Nancy Joyner, Mass Media Bureau, (202) 634-6530.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Report and Order, MM Docket No. 88-458, adopted March 28, 1989, and released April 19, 1989. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Dockets Branch (Room 230), 1919 M Street NW., Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractors, International Transcription Service, (202) 857-3800, 2100 M Street NW., Suite 140, Washington, DC 20037.

List of Subjects in 47 CFR Part 73

Radio broadcasting.

PART 73—[AMENDED]

1. The authority citation for Part 73 continues to read as follows:

Authority: 47 U.S.C. 154, 303.

§ 73.202 [Amended]

2. Section 73.202(b), the Table of FM Allotments for California, is amended by revising the entry for Ridgecrest, by deleting Channel 224A and adding Channel 224B1.