

joint venture between mutually-independent business firms, each of which individually satisfies the definition of a small business.

(c) Gross revenues shall mean all income received by an entity, whether earned or passive, before any deductions are made for costs of doing business (e.g., cost of goods sold), as evidenced by audited financial statements for the preceding relevant number of calendar years, or, if audited financial statements were not prepared on a calendar-year basis, for the preceding relevant number of fiscal years. If an entity was not in existence for all or part of the relevant period, gross revenues shall be evidenced by the audited financial statements of the entity's predecessor-in-interest or, if there is no identifiable predecessor-in-interest, unaudited financial statements certified by the applicant as accurate.

(d) The definition of an affiliate of an applicant is set forth in 47 CFR 1.2110(b)(4).

[60 FR 36562, July 17, 1995, as amended at 60 FR 57368, Nov. 15, 1995]

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AUTHORITY: 47 U.S.C. 154, 303, unless otherwise noted.

SOURCE: 59 FR 59507, Nov. 17, 1994, unless otherwise noted.

### Subpart A—Scope and Authority

#### § 22.1 Basis and purpose.

This section contains a concise general statement of the basis and purpose of the rules in this part, pursuant to 5 U.S.C. 553(c).

(a) *Basis.* These rules are issued pursuant to the Communications Act of 1934, as amended, 47 U.S.C. 151 *et. seq.*

(b) *Purpose.* The purpose of these rules is to establish the requirements and conditions under which domestic common carrier radio stations may be licensed and used in the Public Mobile Services.

**§ 22.3 Authorization required.**

Stations in the Public Mobile Services must be used and operated only in accordance with the rules in this part and with a valid authorization granted by the FCC under the provisions of this part.

(a) The holding of an authorization does not create any rights beyond the terms, conditions and period specified in the authorization. Authorizations may be granted upon proper application, provided that the FCC finds that the applicant is qualified in regard to citizenship, character, financial, technical and other criteria, and that the public interest, convenience and necessity will be served. See 47 U.S.C. 301, 308, and 309.

(b) Authority for subscribers to operate mobile or fixed stations in the Public Mobile Services, except for certain stations in the Rural Radiotelephone Service and the Air-Ground Radiotelephone Service, is included in the authorization held by the common carrier providing service to them. Subscribers are not required to apply for, and the FCC does not accept applications from subscribers for, individual mobile or fixed station authorizations in the Public Mobile Services, except as follows:

(1) Individual authorizations are required to operate general aviation airborne mobile stations in the Air-Ground Radiotelephone Service. See § 22.821.

(2) Individual authorizations are required to operate rural subscriber stations in the Rural Radiotelephone Service, except as provided in § 22.703.

**§ 22.5 Citizenship.**

The rules in this section implement section 310 of the Communications Act of 1934, as amended (47 U.S.C. § 310), in regard to the citizenship of licensees in the Public Mobile Services.

(a) *Foreign governments.* The FCC will not grant an authorization in the Public Mobile Services to any foreign government or any representative thereof.

(b) *Alien ownership or control.* The FCC will not grant an authorization in the Public Mobile Services to:

(1) Any alien or the representative of any alien;

(2) Any corporation organized under the laws of any foreign government;

(3) Any corporation of which any officer or director is an alien or of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof, or by any corporation organized under the laws of a foreign country;

(4) Any corporation directly or indirectly controlled by any other corporation of which any officer or more than one-fourth of the directors are aliens, or of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof, or by any corporation organized under the laws of a foreign country, if the FCC finds that the public interest will be served by the refusal or revocation of such license.

**§ 22.7 General eligibility.**

Except as otherwise provided in this part, existing and proposed common carriers are eligible to hold authorizations in the Public Mobile Services. Applications are granted only if the applicant is legally, financially, technically and otherwise qualified to render the proposed service.

**§ 22.99 Definitions.**

Terms used in this part have the following meanings:

*Air-Ground Radiotelephone Service.* A radio service in which common carriers are authorized to offer and provide radio telecommunications service for hire to subscribers in aircraft.

*Airborne station.* A mobile station in the Air-Ground Radiotelephone Service authorized for use on aircraft while in flight or on the ground.

*Antenna structure.* A structure comprising an antenna, the tower or other structure that exists solely to support antennas, and any surmounting appurtenances (attachments such as beacons or lightning rods).

*Antenna.* A device that converts radio frequency electrical energy to radiated electromagnetic energy and vice versa; in a transmitting station, the device from which radio waves are emitted.

*Archival quality microfiche.* A silver halide master microfiche or a copy made on silver halide film.

*Assignment of authorization.* A transfer of a Public Mobile Services authorization from one party to another, voluntarily or involuntarily, directly or indirectly, or by transfer of control of the licensee.

*Authorization.* A written instrument or oral statement issued by the FCC conveying authority to operate, for a specified term, a station in the Public Mobile Services.

*Authorized bandwidth.* The necessary or occupied bandwidth of an emission, whichever is more.

*Authorized spectrum.* The spectral width of that portion of the electromagnetic spectrum within which the emission power of the authorized transmitter(s) must be contained, in accordance with the rules in this part. The authorized spectrum comprises one channel bandwidth or the bandwidths of two or more contiguous channels.

*Auxiliary test transmitter.* A fixed transmitter used to test Public Mobile systems.

*Base transmitter.* A stationary transmitter that provides radio telecommunications service to mobile and/or fixed receivers, including those associated with mobile stations.

*Blanketing interference.* Disturbance in consumer receivers located in the immediate vicinity of a transmitter, caused by currents directly induced into the consumer receiver's circuitry by the relatively high field strength of the transmitter.

*Build-out transmitters.* In the Cellular Radiotelephone Service, transmitters added to the first cellular system authorized on a channel block in a cellular market during the five year build-out period in order to expand the coverage of the system within the market.

*Cardinal radials.* Eight imaginary straight lines extending radially on the ground from an antenna location in the following azimuths with respect to true North: 0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°.

*Carrier frequency.* The frequency of the unmodulated electrical wave at the output of an amplitude modulated

(AM), frequency modulated (FM) or phase modulated (PM) transmitter.

*Cell.* The service area of an individual transmitter location in a cellular system.

*Cellular Geographic Service Area.* The geographic area served by a cellular system, within which that system is entitled to protection and adverse effects are recognized, for the purpose of determining whether a petitioner has standing. See §22.911.

*Cellular markets.* Standard geographic areas used by the FCC for administrative convenience in the licensing of cellular systems. See §22.909.

*Cellular Radiotelephone Service.* A radio service in which common carriers are authorized to offer and provide cellular service for hire to the general public. This service was formerly titled Domestic Public Cellular Radio Telecommunications Service.

*Cellular repeater.* In the Cellular Radiotelephone Service, a stationary transmitter or device that automatically re-radiates the transmissions of base transmitters at a particular cell site and mobile stations communicating with those base transmitters, with or without channel translation.

*Cellular service.* Radio telecommunication services provided using a cellular system.

*Cellular system.* An automated high-capacity system of one or more multi-channel base stations designed to provide radio telecommunication services to mobile stations over a wide area in a spectrally efficient manner. Cellular systems employ techniques such as low transmitting power and automatic hand-off between base stations of communications in progress to enable channels to be reused at relatively short distances. Cellular systems may also employ digital techniques such as voice encoding and decoding, data compression, error correction, and time or code division multiple access in order to increase system capacity.

*Center frequency.* The frequency of the middle of the bandwidth of a channel.

*Central office transmitter.* A fixed transmitter in the Rural Radiotelephone Service that provides service to rural subscriber stations.

*CGSA.* See *Cellular Geographic Service Area*.

*Channel.* The portion of the electromagnetic spectrum assigned by the FCC for one emission. In certain circumstances, however, more than one emission may be transmitted on a channel. See, for example, § 22.161.

*Channel bandwidth.* The spectral width of a channel, as specified in this part, within which 99% of the emission power must be contained.

*Channel block.* A group of channels that are assigned together, not individually.

*Channel pair.* Two channels that are assigned together, not individually. In this part, channel pairs are indicated by an ellipsis between the center frequencies.

*Communications channel.* In the Cellular Radiotelephone and Air-ground Radiotelephone Services, a channel used to carry subscriber communications.

*Construction period.* The period between the date of grant of an authorization and the date of required commencement of service.

*Control channel.* In the Cellular Radiotelephone Service and the Air-ground Radiotelephone Service, a channel used to transmit information necessary to establish or maintain communications. In the other Public Mobile Services, a channel that may be assigned to a control transmitter.

*Control point.* A location where the operation of a public mobile station is supervised and controlled by the licensee of that station.

*Control transmitter.* A fixed transmitter in the Public Mobile Services that transmits control signals to one or more base or fixed stations for the purpose of controlling the operation of the base or fixed stations, and/or transmits subscriber communications to one or more base or fixed stations that retransmit them to subscribers.

*Dead spots.* Small areas within a service area where the field strength is lower than the minimum level for reliable service. Service within dead spots is presumed.

*Dispatch service.* A radiotelephone service comprising communications between a dispatcher and one or more mobile units. These communications

normally do not exceed one minute in duration and are transmitted directly through a base station, without passing through mobile telephone switching facilities.

*Effective radiated power (ERP).* The effective radiated power of a transmitter (with antenna, transmission line, duplexers etc.) is the power that would be necessary at the input terminals of a reference half-wave dipole antenna in order to produce the same maximum field intensity. ERP is usually calculated by multiplying the measured transmitter output power by the specified antenna system gain, relative to a half-wave dipole, in the direction of interest.

*Emission.* The electromagnetic energy radiated from an antenna.

*Emission designator.* An internationally accepted symbol for describing an emission in terms of its bandwidth and the characteristics of its modulation, if any. See § 2.201 of this chapter for details.

*Emission mask.* The design limits imposed, as a condition or type acceptance, on the mean power of emissions as a function of frequency both within the authorized bandwidth and in the adjacent spectrum.

*Equivalent isotropically radiated power (EIRP).* The equivalent isotropically radiated power of a transmitter (with antenna, transmission line, duplexers etc.) is the power that would be necessary at the input terminals of a reference isotropic radiator in order to produce the same maximum field intensity. An isotropic radiator is a theoretical lossless point source of radiation with unity gain in all directions. EIRP is usually calculated by multiplying the measured transmitter output power by the specified antenna system gain, relative to an isotropic radiator, in the direction of interest.

*Extension.* In the Cellular Radiotelephone Service, an area within the service area boundary of a cellular system, but outside of the market boundary. See §§ 22.911(c) and 22.912.

*Facsimile service.* Transmission of still images from one place to another by means of radio.

*Fill-in transmitters.* Transmitters added to a station, in the same area and transmitting on the same channel

or channel block as previously authorized transmitters, that do not expand the existing service area, but are established for the purpose of improving reception in dead spots.

*Five year build-out period.* A five year period during which the licensee of the first cellular system authorized on each channel block in each cellular market may expand the system within that market. See §22.947.

*Fixed transmitter.* A stationary transmitter that communicates with other stationary transmitters.

*Frequency.* The number of cycles occurring per second of an electrical or electromagnetic wave; a number of representing a specific point in the electromagnetic spectrum.

*Ground station.* In the Air-ground Radiotelephone Service, a stationary transmitter that provides service to airborne mobile stations.

*Height above average terrain (HAAT).* The height of an antenna above the average elevation of the surrounding area.

*In-building radiation systems.* Supplementary systems comprising low power transmitters, receivers, indoor antennas and/or leaky coaxial cable radiators, designed to improve service reliability inside buildings or structures located within the service areas of stations in the Public Mobile Services.

*Initial cellular applications.* Applications for authority to construct and operate a new cellular system, excluding applications for interim operating authority.

*Interfering contour.* The locus of points surrounding a transmitter where the predicted median field strength of the signal from that transmitter is the maximum field strength that is not considered to cause interference at the service contour of another transmitter.

*Interoffice transmitter.* A fixed transmitter in the Rural Radiotelephone Service that communicates with other interoffice transmitters for the purpose of interconnecting rural central offices.

*Meteor burst propagation mode.* A long distance VHF radio communication path occurring as a result of the refraction of electromagnetic waves by ionized meteor trails.

*Mobile station.* One or more transmitters that are capable of operation while in motion.

*Necessary bandwidth.* The calculated spectral width of an emission. Calculations are made using procedures set forth in part 2 of this chapter. The bandwidth so calculated is considered to be the minimum necessary to convey information at the desired rate with the desired accuracy.

*Occupied bandwidth.* The measured spectral width of an emission. The measurement determines occupied bandwidth as the difference between upper and lower frequencies where 0.5% of the emission power is above the upper frequency and 0.5% of the emission power is below the lower frequency.

*Offshore central transmitter.* A fixed transmitter in the Offshore Radiotelephone Service that provides service to offshore subscriber stations.

*Offshore Radiotelephone Service.* A radio service in which common carriers are authorized to offer and provide radio telecommunication services for hire to subscribers on structures in the offshore coastal waters of the Gulf of Mexico.

*Offshore subscriber station.* One or more fixed and/or mobile transmitters in the Offshore Radiotelephone Service that receive service from offshore central transmitters.

*Pager.* A small radio receiver designed to be carried by a person and to give an aural, visual or tactile indication when activated by the reception of a radio signal containing its specific code. It may also reproduce sounds and/or display messages that were also transmitted. Some pagers also transmit a radio signal acknowledging that a message has been received.

*Paging and Radiotelephone Service.* A radio service in which common carriers are authorized to offer and provide paging and radiotelephone service for hire to the general public. This service was formerly titled Public Land Mobile Service.

*Paging service.* Transmission of coded radio signals for the purpose of activating specific pagers; such transmissions may include messages and/or sounds.

*Partitioned cellular market.* A cellular market with two or more authorized

cellular systems on the same channel block during the five year build-out period, as a result of settlements during initial licensing or contract(s) between the licensee of the first cellular system and the licensee(s) of the subsequent systems. See § 22.947(b).

*Public Mobile Services.* Radio services in which common carriers are authorized to offer and provide mobile and related fixed radio telecommunication services for hire to the public.

*Radio common carrier.* A telecommunication common carrier that provides radio communications services but is not engaged in the business of providing landline local exchange telephone service.

*Radio telecommunication services.* Communication services provided by the use of radio, including radiotelephone, radiotelegraph, paging and facsimile service.

*Radiotelegraph service.* Transmission of messages from one place to another by means of radio.

*Radiotelephone service.* Transmission of sound from one place to another by means of radio.

*Repeater.* A fixed transmitter that retransmits the signals of other stations.

*Roamer.* A mobile station receiving service from a station or system in the Public Mobile Services other than one to which it is a subscriber.

*Rural Radiotelephone Service.* A radio service in which common carriers are authorized to offer and provide radio telecommunication services for hire to subscribers in areas where it is not feasible to provide communication services by wire or other means.

*Rural subscriber station.* One or more fixed transmitters in the Rural Radiotelephone Service that receive service from central office transmitters.

*Service area.* The geographic area considered by the FCC to be reliably served by a station in the Public Mobile Services.

*Service contour.* The locus of points surrounding a transmitter where the predicted median field strength of the signal from that transmitter is the minimum field strength that is considered sufficient to provide reliable service to mobile stations.

*Service to subscribers.* Service to at least one subscriber that is not affil-

ated with, controlled by or related to the providing carrier.

*Signal booster.* A stationary device that automatically reradiates signals from base transmitters without channel translation, for the purpose of improving the reliability of existing service by increasing the signal strength in dead spots.

*Station.* A station equipped to engage in radio communication or radio transmission of energy (47 U.S.C. 153(k)).

*Telecommunications common carrier.* An individual, partnership, association, joint-stock company, trust or corporation engaged in rendering radio telecommunications services to the general public for hire.

*Temporary fixed station.* One or more fixed transmitters that normally do not remain at any particular location for longer than 6 months.

*Transfer of control.* A transfer of the controlling interest in a Public Mobile Services licensee from one party to another.

*Unserved areas.* In the Cellular Radiotelephone Service, areas outside of all existing CGSAs (on either of the channel blocks), to which the Communications Act of 1934, as amended, is applicable.

*Wireline common carrier.* A telecommunication common carrier that is also engaged in the business of providing landline local exchange telephone service.

[59 FR 59507, Nov. 17, 1994, as amended at 61 FR 31050, June 19, 1996]

## Subpart B—Application Requirements and Procedures

### § 22.101 Station files.

Applications, notifications, correspondence and other material, and copies of authorizations, comprising technical, legal, and administrative data relating to each station in the Public Mobile Services are maintained by the FCC in individual station files. These files constitute the official records for these stations and supersede any other records, data bases or lists from the FCC or other sources.



**§22.103 Representations.**

Applicants must make full and continuing disclosure as required by §1.65 of this chapter. Applicants must not make misrepresentations. The signing of an application or notification for new or additional facilities in the Public Mobile Services constitutes a representation that the applicant intends to use such facilities to provide service to subscribers in accordance with the rules in this part.

**§22.105 Written applications, standard forms, microfiche, magnetic disks.**

Except for authorizations granted under the emergency conditions set forth in section 308 of the Communications Act of 1934, as amended (47 U.S.C. 308), the FCC may grant authorizations only upon written application (FCC Form 401) received by it. A separate written application is required for each authorization. Applicants shall submit any documents, exhibits, or other written statements of fact that the FCC may require in determining whether to grant, deny or dismiss an application.

TABLE B-1.—STANDARD FORMS FOR THE PUBLIC MOBILE SERVICES

Purpose of filing	Form No.	Title of form
<ul style="list-style-type: none"> <li>• application for new or modified station</li> <li>• major amendment to pending application</li> <li>• application for partial assignment of authorization.</li> </ul>	600	Application for Mobile Radio Service Authorization.
<ul style="list-style-type: none"> <li>• application for renewal of authorization</li> </ul>	405	Application for Renewal of Station License.
<ul style="list-style-type: none"> <li>• application for airborne mobile authorization</li> </ul>	409	Application for Airborne Mobile Radiotelephone Authorization.
<ul style="list-style-type: none"> <li>• application for assignment of authorization</li> </ul>	430	Licensee Qualification Report.
<ul style="list-style-type: none"> <li>• notification of completion of construction</li> <li>• notification of minor modification of station.</li> </ul>	489	Notification of Commencement of Service or of Additional or Modified Facilities.
<ul style="list-style-type: none"> <li>• application for assignment of authorization</li> <li>• application for consent to transfer of control.</li> </ul>	490	Application for Assignment of Authorization or Consent to Transfer of Control of Licensee.

(a) *Formal applications, amendments and notifications.* Except as provided in paragraph (b) of this section, applications, amendments and notifications must be filed using the standard forms listed in paragraph (c) of this section.

(b) *Informal applications, amendments and notifications.* Applications, amendments and notifications in letter or document form may be accepted for filing, if none of the standard forms listed in this section are prescribed for or clearly applicable for the intended purpose. Such informal applications, amendments and notifications must be submitted in duplicate, with a caption clearly stating the name of the filer, nature of the filing, the Public Mobile service involved, the call sign of the relevant existing station, if any, and the file number of the relevant pending application, if any, and must contain all necessary technical data and exhibits.

(c) *Standard forms.* Standard forms may be obtained in small quantities from the FCC. Standard forms may be reproduced and the copies used. Computer-generated standard forms may also be used after approval by the FCC staff. Standard forms used for applications, amendments, notifications and reports in the Public Mobile Services are listed in Table B-1 of this section.

(d) *Microfiche required.* All filings and submissions related to stations in the Public Mobile Services, including applications (including exhibits and attachments), notifications, amendments, reports, correspondence and pleadings must be submitted in microfiche form, except as provided in paragraphs (d)(1) and (g) of this section.

(1) Emergency filings, such as requests for special temporary authority, need not be submitted in microfiche form. Filings and submissions (other than standard application forms) that are no longer than three pages need not

be submitted in microfiche form. Standard application forms must be submitted in microfiche forms, even if they comprise three pages or less.

(2) Three microfiche copies of each filing or submission must be submitted, except that, for initial Phase I unserved area applications in the Cellular Radiotelephone Service (see § 22.949), two microfiche copies must be submitted. Each microfiche copy must be a complete copy of the signed paper original. Each microfiche must be a 148 mm by 105 mm negative (clear transparent characters appearing on a background providing sufficient contrast to make legible copies) at 24× or 27× reduction. At least one of the microfiche copies must be a silver halide camera master or a copy made on silver halide film such as Kodak Direct Duplicatory Film. Microfiche must be placed in paper microfiche envelopes and submitted in a 5" by 7½" envelope. Applicants must leave Row "A" (the first row for page images) of the first microfiche blank for FCC use.

(3) The following information must be printed on the mailing envelope, the microfiche envelope, and the title area at the top of the microfiche:

(i) For notifications, amendments, reports, correspondence, pleadings and applications, other than initial applications in the Cellular Radiotelephone Service—the name of the applicant, the city and state of the application and the call sign of the station, if the application refers to an existing station.

(ii) For initial applications in the Cellular Radiotelephone Service—the name of the applicant, the market name, the market number, and the channel block.

(4) The microfiche copies of opposition and reply pleadings may be submitted after the required paper originals, in accordance with § 1.45 of this chapter.

(e) *Paper original required.* The paper originals of notifications, amendments, reports, correspondence and applications, other than initial Phase I unserved area applications in the Cellular Radiotelephone Service, must be submitted at the same time as the microfiche required by paragraph (d) of this section. The paper originals of initial Phase I unserved area applications

selected in random selection processes must be submitted 7 days after the release of the public notice announcing the tentative selectee. The paper originals of opposition and reply pleadings must be submitted within the time frames established by § 1.45 of this chapter. Each paper original must be stamped "ORIGINAL" on the top page. In addition to the paper original, paper copies of pleadings must be submitted as required by § 1.51 of this chapter.

(f) *Correspondence.* Correspondence concerning a submitted application must clearly identify the name of the filer, nature of the filing, the Public Mobile service involved, the call sign of the relevant existing station, if any, and the file number (if assigned) of the relevant pending application. Correspondence may be sent directly to Mobile Services Division, Common Carrier Bureau, Federal Communications, Washington, DC 20554.

(g) *Magnetic disks.* To assist the FCC in maintaining an accurate technical licensing database, applicants are encouraged to submit the technical and administrative data contained in applications and notifications on magnetic disks. Applicants may also submit, in lieu of the microfiche required by paragraph (d) of this section, entire applications and notifications on magnetic disks, by including graphics files containing the images of the signed paper originals.

(1) Each application must be submitted on a separate labeled standard 3¼" magnetic disk, formatted to be readable by high-density floppy drives operating under MS-DOS (3.X or later compatible versions). A copy of each disk must also be submitted (2 identical disks per application).

(2) [Reserved]

NOTE: Paragraph (g) of § 22.105 is not effective until further notice.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

EFFECTIVE DATE NOTE: At 59 FR 59507, Nov. 17, 1994, § 22.105 was revised effective January 1, 1995, except for paragraph (g). A document will be published in the FEDERAL REGISTER announcing the effective date of that paragraph.

**§ 22.106 Filing fees; place.**

Applications, amendments, notifications and other filings must be submitted to the FCC at the appropriate address, with the appropriate filing fee. The fee amounts and addresses are listed in part 1, subpart G of this chapter (§1.1105 in particular), and in the publication "Common Carrier Services Fee Filing Guide" which is available from the Federal Communications Commission, Washington, DC 20554.

**§ 22.107 General application requirements.**

In general, applications for authorizations, assignments of authorizations, or consent to transfer of control of licensees in the Public Mobile Services must:

- (a) Demonstrate the applicant's qualifications to hold an authorization in the Public Mobile services;
- (b) State how a grant would serve the public interest, convenience, and necessity;
- (c) Contain all information required by FCC rules or application forms;
- (d) Propose operation of a facility in compliance with all rules governing the Public Mobile service;
- (e) Be amended as necessary to remain substantially accurate and complete in all significant respects, in accordance with the provisions of §1.65 of this chapter; and,
- (f) Be signed in accordance with §1.743 of this chapter.

**§ 22.108 Parties to applications.**

Each application for an authorization, assignment of authorization, or for consent to transfer of control in the Public Mobile Service must disclose fully the real party or parties in interest to the application. Such disclosure must include:

- (a) A list of the applicant's subsidiaries, if any. For the purposes of this section, a subsidiary is any business for which the applicant or any officer, director, stockholder or key manager of the applicant owns 5% or more of the stock, warrants, options or debt securities. This list must include a description of each subsidiary's principal business and relationship to the applicant.

(b) A list of the applicant's affiliates, if any. For the purposes of this section, an affiliate is:

- (1) Any business that holds a 5% or more interest in the applicant; or,
- (2) Any business in which a 5% or more interest is held by a business that also holds a 5% or more interest in the applicant.

(c) A list of the names, addresses, citizenship and principal business of any person holding 5% or more of each class of stock, warrants, options or debt securities of the applicant, indicating the amount and percentage held, and providing the name, address, citizenship and principal place of business of any person, if other than the holder, for whose benefit such interest is held. If any such persons are related by blood or marriage, the relationship must be disclosed.

(d) For initial cellular applications, the name and address of each partner, his or her citizenship and the share or interest participation in the partnership. This information must be provided for all partners, regardless of their respective ownership interests in the partnership. A signed and dated copy of the partnership agreement must be included in the application. See § 22.953(a)(5)(v).

**§ 22.115 Content of applications.**

Applications must contain all applicable information requested on the standard form and any additional information required by the rules in this part.

(a) The following requirements are common to all Public Mobile Services:

(1) *Site availability.* At the time of filing, applicants must have obtained reasonable assurance that all antenna sites specified in their applications are available for the proposed use.

(2) *Antenna structure registration.* Applications proposing the use of one or more new or existing antenna structures must contain the FCC Antenna Structure Registration Number, if assigned, of each such antenna structure for which Federal Aviation Administration (FAA) notification is or was required by part 17 of this chapter prior to its construction. If, at the time an application is filed, an FCC Antenna Structure Registration Number has not

been assigned for any such antenna structure, the applicant must indicate in the application whether or not, as of the date the application is filed, the antenna structure owner has registered the antenna structure with the FCC in accordance with part 17 of this chapter.

(3) *FAA notification.* Before constructing a new antenna structure or increasing the height of an existing structure, an antenna structure owner may be required to obtain an FAA determination of No Hazard to Air Navigation. To obtain this determination, the FAA must be notified of the planned construction or alteration. Criteria used to determine whether FAA notification is required for any particular antenna structure are contained in part 17 of this chapter.

(i) Applications proposing to use a new antenna structure or an existing antenna structure for which the height is increased must indicate whether FAA notification is required by part 17 of this chapter.

(ii) If FAA notification is required by part 17 of this chapter, a copy of the FAA determination should be included in the application. However, if the FAA determination is not available at the time the application is filed, the application must include the following information in regard to the FAA notification: the name of the person that submitted the notification, the date the notification was submitted, and the location of the FAA office to which the notification was submitted.

(iii) If FAA notification is not required by part 17 of this chapter, the application must indicate such and, unless the reason therefor is obvious (e.g. antenna structure height is less than 6.10 meters above ground level), must contain a statement explaining why FAA notification is not required.

(4) *Antenna locations.* Applications for stations at fixed locations must describe each transmitting antenna site by its geographical coordinates and also by its street address, or by reference to a nearby landmark. Geographical coordinates must be specified in degrees, minutes, and seconds to the nearest second of latitude and longitude.

NOTE to paragraph (a)(4) of § 22.115: The FAA has announced that effective October

15, 1992, it will use geographic coordinates based on the 1983 North American Datum (NAD83). Until further notice, however, the FCC will continue to use geographical coordinates based the 1927 North American Datum (NAD27). Applicants may supply geographical coordinates based on NAD83 in addition to those required (NAD27).

(5) *Environmental concerns.* Each applicant is required to indicate at the time its application is filed whether or not an FCC grant of the application may have a significant environmental effect, as defined by § 1.1307 of this chapter. If answered affirmatively, an Environmental Assessment, required by § 1.1311 of this chapter, must be filed with the application and environmental review by the FCC must be completed prior to construction.

(b) *Reference to material on file.* Questions on application forms that call for specific technical data, or that can be answered yes or no or with another short answer, must be answered on the form. Otherwise, if documents, exhibits, or other lengthy showings already on file with the FCC contain information required in an application, the application may incorporate such information by reference, provided that:

(1) The reference information comprises more than one 8½" x 11" page and is current and accurate in all material respects; and,

(2) The reference states specifically where the referenced information can actually be found, including:

(i) The station call sign or application file number, if the reference is to station files or previously filed applications;

(ii) The title of the proceeding, the docket number, and any legal citations, if the reference is to a docketed proceeding.

(c) *Service specific requirements.* Applications for authorization in the Cellular Radiotelephone Service must contain specific information as required by § 22.929 and § 22.953. Applications for authorization in the Paging and Radiotelephone Service must contain specific information as required by § 22.529, § 22.559 and § 22.589. Applications for authorization in the Rural Radiotelephone Service must contain the information required by § 22.709. Applications for authorization in the Offshore

Radio Service must contain the information required by §22.1037. Applications for authorization in the Air-Ground Radiotelephone Service must contain specific information as required by §22.803 and §22.875, as appropriate.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994; 61 FR 4365, Feb. 6, 1996]

**§22.117 Content of notifications.**

Notifications must contain all applicable information requested on the standard form and any additional information required by the rules in this part. See §§22.124, 22.137, 22.142, 22.163, 22.165, 22.941, and 22.946.

**§22.119 Requests for rule waivers.**

The FCC may waive the requirements of rules in this part on its own motion or upon written request.

(a) Requests for waiver of rules must contain a complete explanation as to why the waiver is desired. The FCC may grant a request for waiver if it is shown that:

(1) The underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and that a grant of the requested waiver would be in the public interest; or

(2) In view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome or contrary to the public interest, or that the applicant has no reasonable alternative.

(b) The FCC, in its discretion, may give public notice of the filing of a waiver request and seek comment from the public or affected parties.

(c) Denial of a rule waiver request associated with an application renders that application defective unless it contains an alternative proposal that fully complies with the rules, in which event the application is processed using the alternative proposal as if the waiver had not been requested. Applications rendered defective may be dismissed without prejudice.

**§22.120 Application processing; initial procedures.**

This section contains rules governing the initial processing of applications for authority to operate a station in the Public Mobile Services.

(a) *File numbers.* Applications received by the FCC are assigned file numbers. Assignment of a file number to an application is for administrative convenience and does not constitute a determination that the application is acceptable for filing. Assignment of a file number does not preclude the subsequent return or dismissal of an application. For administrative efficiency, the FCC, in its discretion, occasionally consolidates separate applications filed simultaneously by the same applicant into a single application (with one file number) and splits applications comprising two or more severable proposals into separate applications (with different file numbers).

(b) *Received date.* The FCC records the date on which each application is received. This date is used to determine compliance with applicable cut-off dates or filing windows and for other purposes.

(c) *Initial review for completeness (prescreening).* Each application is reviewed for completeness. The purpose of this initial review is to identify applications that are defective in an obvious way (e.g. not signed, missing pages, improper or missing fee payment). Applications found to be defective in this review are unacceptable for filing and may be returned to the applicant with a brief statement indicating the nature of the defect(s) found. Applications for which no obvious defects are discovered in the initial review are acceptable for filing.

(d) *Public notice; acceptance for filing.* The FCC periodically issues Public Notices that list applications that are acceptable for filing. The listing of an application on a Public Notice as acceptable for filing provides notices to the public that the application has been filed; it does not preclude dismissal of the application if it is subsequently found to be defective or otherwise subject to dismissal under §22.128.

**§ 22.121 Repetitious, inconsistent or conflicting applications.**

Repetitious, inconsistent or conflicting applications are not accepted for filing by the FCC. Unless the FCC in a particular case determines otherwise, such applications are not returned to the applicant.

(a) While an application is pending, any subsequent inconsistent or conflicting application submitted by, on behalf of, or for the benefit of the same applicant, its successor or assignee will not be accepted for filing.

(b) If an applicant has been afforded an opportunity for a hearing with respect to an application for a new station or an enlargement of service area, and the FCC has, after hearing or default, denied the application or dismissed it with prejudice, the FCC will not consider a like application for service of the same type to the same area by that applicant, or by its successor or assignee, or on behalf of or for the benefit of the parties in interest to the original application, until one year after the effective date of the FCC's action on the original application.

(c) If an appeal has been taken from the action of the FCC denying a particular application, a like application for service of the same type to the same area, in whole or in part, filed by that applicant or by its successor or assignee, or on behalf of or for the benefit of the parties in interest to the original application, will not be considered until the final disposition of such appeal.

(d) If an authorization is automatically terminated because of failure to commence service to subscribers (see § 22.144), the FCC will not consider an application for another authorization to operate a station on the same channel in the same geographical area by that party, or by its successor or assignee, or on behalf of or for the benefit of the parties in interest to the terminated authorization, until one year after the date the authorization terminated. This paragraph does not apply to authorizations in the Cellular Radiotelephone Service.

[59 FR 59507, Nov. 17, 1994; 59 FR 64856, Dec. 16, 1994]

**§ 22.122 Amendment of applications.**

Pending applications may be amended as a matter of right if they have not been designated for hearing or listed in a Public Notice for a random selection or competitive bidding process, except as provided in paragraphs (b) and (c) of this section and in § 22.949.

(a) If a petition to deny or other formal objection has been filed, a copy of any amendment (or other filing) must be served on the petitioner. If the FCC has issued a Public Notice stating that the application appears to be mutually exclusive with another application (or applications), a copy of any amendment (or other filing) must be served on any such mutually exclusive applicant (or applicants).

(b) Amendments to applications that resolve mutual exclusivity may be filed at any time, subject to the requirements of § 22.129.

(c) Amendments to applications designated for hearing may be allowed by the presiding officer and amendments to applications selected in a random selection process may be allowed by the FCC for good cause shown. In such instances, a written petition demonstrating good cause must be submitted and served upon the parties of record.

**§ 22.123 Classification of filings as major or minor.**

Applications and amendments to applications are classified as major or minor. Categories of major and minor filings are listed in section 309 of the Communications Act of 1934, as amended (47 U.S.C. 309). In general, a major filing is a request for an FCC action that has the potential to affect parties other than the applicant. Filings are minor if they are not classified as major.

(a) *Ownership or control change.* Filings are major if they specify a substantial change in beneficial ownership or control (*de jure* or *de facto*), unless such change is involuntary or if the filing merely amends an application to reflect a change in ownership or control that has already been approved by the FCC.

(b) *Developmental.* Applications are major if they request a developmental authorization pursuant to § 22.409, or a

regular authorization for facilities operating under a developmental authorization.

(c) *Renewal.* Applications of renewal of authorizations are major.

(d) *Environmental.* Filings are major if they request authorization for a facility that would have a significant environmental effect, as defined by §§ 1.1301 through 1.1319 of this chapter.

(e) *Paging and Radiotelephone Service.* In the Paging and Radiotelephone Service, filings are major if they:

(1) Request an authorization that would establish for the filer a new service area or fixed transmission path on a request channel;

(2) Request an authorization that would extend the service area of an existing station to include area not served by station(s) authorized to the filer on a requested channel;

(3) Request an authorization that would extend the interfering contours of an existing station beyond the composite interfering contours of station(s) authorized to the filer on a request channel;

(4) Request an authorization that would increase the effective radiated power or antenna height above average terrain in any azimuth from an existing fixed transmitter authorized to the filer;

(5) Request an authorization that would relocate an existing fixed transmitter;

(6) Amend a pending application to change a requested channel;

(7) Amend a pending application in a way that would extend the service area of a station on a requested channel to include area that—

(i) Would not have been served by that station as previously proposed in the application and—

(ii) Is not already served by the station on the requested channel;

(8) Amend a pending application in a way that would extend the interfering contours of a station on a requested channel beyond—

(i) The composite interfering contours of that station as previously proposed in the application and—

(ii) The composite interfering contours of any other stations authorized to the filer on a requested channel;

(9) Amend a pending application to increase the proposed effective radiated power or antenna height above average terrain in any azimuth of a fixed transmitter;

(10) Amend a pending application to change the location of a fixed transmitter from that previously proposed in the application; or,

(11) Amend a pending application for which pre-filing coordination was required (see § 22.150) to change the technical proposal substantially from that which was coordinated with other users.

(f) *Rural Radiotelephone Service.* In the Rural Radiotelephone Service, filings are major if they:

(1) Request an authorization for a new central office or subscriber station;

(2) Request an authorization that would extend the interfering contours of an existing station beyond the composite interfering contours of station(s) authorized to the filer on a requested channel;

(3) Request an authorization that would increase the effective radiated power or antenna height above average terrain in any azimuth from an existing transmitter authorized to the filer;

(4) Request an authorization that would relocate an existing transmitter;

(5) Amend a pending application to change a requested channel;

(6) Amend a pending application in a way that would extend the interfering contours of a station on a requested channel beyond—

(i) The composite interfering contours of that station as previously proposed in the application and—

(ii) The composite interfering contours of any other stations authorized to the filer on a requested channel; or,

(7) Amend a pending application to increase the proposed effective radiated power or antenna height above average terrain in any azimuth of a transmitter.

(g) *Cellular Radiotelephone Service.* In the Cellular Radiotelephone Service, filings are major if they:

(1) Request an authorization to operate a new cellular system;

(2) Request an authorization for facilities that would expand the cellular geographic service area (CGSA) of an

existing cellular system, except during the applicable five year build-out period, if any;

(3) Request an authorization for facilities that would produce a *de minimis* service area boundary extension (see § 22.911(c)(1));

(4) Request that a CGSA boundary or a portion of a CGSA boundary be determined using an alternative method (see § 22.911(b));

(5) Amend a pending application to change the requested channel block; or,

(6) Amend a pending application by modifying the CGSA of the proposed cellular system to include area that—

(i) Was not included in the CGSA as previously proposed in the application and—

(ii) Is not included in the currently authorized CGSA, if any.

(h) *Air-ground Radiotelephone*. In the Air-ground Radiotelephone Service, filings are major if they:

(1) Request an authorization for a new General Aviation ground station or to relocate an existing General Aviation ground station;

(2) Request the first authorization for a new Commercial Aviation ground station at a location other than those listed in § 22.859;

(3) Request authorization to add a channel to or change a channel of an existing General Aviation ground station; or,

(4) Amend a pending application to change the requested channel or channel block.

(i) *Offshore Radiotelephone*. In the Offshore Radiotelephone Service, filings are major if they:

(1) Request an authorization for a new offshore central or subscriber station;

(2) Request authorization to add a channel to or change a channel of an existing offshore central or subscriber station; or,

(3) Amend a pending application to change the technical proposal substantially from that which was coordinated with other users prior to filing.

(j) *Clerical errors*. Amendments are classified as minor if they only correct typographical, transcription or similar clerical errors that are clearly demonstrated (e.g. by reference to other parts of the application) to be mis-

takes, and whose discovery and correction does not change information previously listed in a Public Notice.

#### § 22.124 Notification processing.

This section contains rules governing the processing of notifications (filed on FCC Form 489) in the Public Mobile Services.

(a) *File numbers*. Notifications received by the FCC are assigned file numbers. Assignment of a file number to a notification is for administrative convenience and does not constitute a determination that the notified action has been examined and not rejected by the FCC. Assignment of a file number does not preclude the return of a notification subsequently found to be defective.

(b) *Defective notifications*. A notification is defective if:

(1) It is unsigned or incomplete with respect to required answers to questions, informational showings, or other matters of a formal character;

(2) It notifies of an action that does not comply with one or more of the FCC rules;

(3) It notifies of an action for which an application for authorization is required;

(4) It is submitted without the required microfiche; or,

(5) It is untimely filed.

(c) *Review*. After a file number is assigned, each notification is reviewed. The purpose of this review is to identify notifications that are unacceptable (e.g. not signed, missing pages, improper or missing fee payment). Notifications found to be unacceptable may be returned to the licensee with a brief statement describing the deficiency. If a notification is found to be unacceptable, the FCC may direct the licensee to return the station to compliance with its previous license terms. Acceptable notifications are added to the appropriate station files.

#### § 22.125 Application for special temporary authorizations.

In circumstances requiring immediate or temporary use of Public Mobile Services stations, carriers may request special temporary authority (STA) to operate new or modified



equipment. Such requests may be submitted as informal applications (see §22.105) and must contain complete details about the proposed operation and the circumstances that fully justify and necessitate the grant of STA. Such requests should be filed in time to be received by the FCC at least 10 days prior to the date of proposed operation or, where an extension is sought, 10 days prior to the expiration date of the existing STA. Requests received less than 10 days prior to the desired date of operation may be given expedited considerations only if compelling reasons are given, in writing, for the delay in submitting the request. Otherwise, such late-filed requests are considered in turn, but action might not be taken prior to the desired date of operation. Requests for STAs must be accompanied by the proper filing fee.

(a) *Grant without Public Notice.* STAs may be granted without being listed in a Public Notice, or prior to 30 days after such listing, if:

(1) The STA is to be valid for 30 days or less and the applicant does not plan to file an application for regular authorization of the subject operation;

(2) The STA is to be valid for 60 days or less, pending the filing of an application for regular authorization of the subject operation;

(3) The STA is to allow interim operation to facilitate completion of authorized construction or to provide substantially the same service as previously authorized; or

(4) The STA is made upon a finding that there are extraordinary circumstances requiring operation in the public interest and that delay in the institution of such service would seriously prejudice the public interest.

(b) *Limit on STA term.* The FCC may grant STAs valid for a period not to exceed 180 days under the provisions of §309(f) of the Communications Act of 1934, as amended, (47 U.S.C. 309(f)) if extraordinary circumstances so require, and pending the filing of an application for regular operation. The FCC may grant extensions of STAs for a period of 180 days, but the applicant must show that extraordinary circumstances warrant such an extension.

#### §22.127 Public notices.

Periodically, the FCC issues Public Notices listing major filings and other information of public significance. Categories of Public Notice listings are as follows:

(a) *Accepted for filing.* Acceptance for filing of applications and major amendments thereto.

(b) *Actions.* FCC actions on pending applications previously listed as accepted for filing.

(c) *Informative listings.* Information that the FCC, in its discretion, believes to be of public significance. Such listings do not create any rights to file oppositions or other pleadings.

#### §22.128 Dismissal of applications.

The FCC may dismiss any application for authorization, assignment of authorization, or consent to transfer of control in the Public Mobile Services, upon request by the applicant, or if the application is untimely filed, or if the application is mutually exclusive with another application that is selected or granted in accordance with the rules in this part, or for failure to prosecute, or if the requested spectrum is not available, or if the application is found to be defective. Such dismissal may be "without prejudice," meaning that the FCC may accept from the applicant another application for the same purpose at any later time, or "with prejudice," meaning that the FCC will not accept from the applicant another application for the same purpose for a period of one year. Unless otherwise provided in this part, a dismissed application will not be returned to the applicant.

(a) *Dismissal at request of applicant.* Any applicant may request that its application be returned or dismissed. A request for the return of an application after it has been listed on Public Notice as tentatively accepted for filing is considered to be a request for dismissal of that application without prejudice.

(1) If the applicant requests dismissal of its application with prejudice, the FCC will dismiss that application with prejudice.

(2) If the applicant requests dismissal of its application without prejudice, the FCC will dismiss that application without prejudice, unless:

(i) It has been designated for comparative hearing;

(ii) It has been selected in a random selection process; or,

(iii) It is an application for which the applicant submitted the winning bid in a competitive bidding process.

(3) If the applicant requests dismissal of its application for which it submitted the winning bid in a competitive bidding process, the FCC will dismiss that application with prejudice. If the applicant requests dismissal of its application after that application has been designated for comparative hearing or selected in a random selection process, it may submit a written petition requesting that the dismissal be without prejudice. Such petition must demonstrate good cause and comply with § 22.129 and be served upon all parties of record. The FCC may grant such petition and dismiss the application without prejudice or deny the petition and dismiss the application with prejudice.

(b) *Dismissal of mutually exclusive applications not granted.* The FCC may dismiss mutually exclusive applications:

(1) For which the applicant did not submit the winning bid in a competitive bidding process;

(2) That are included in a random selection process but are not granted; or,

(3) That receive comparative consideration in a hearing but are not granted by order of the presiding officer.

(c) *Dismissal for failure to prosecute.* The FCC may dismiss applications for failure of the applicant to prosecute or for failure of the applicant to respond substantially within a specified time period to official correspondence or requests for additional information. Such dismissal will generally be without prejudice if the failure to prosecute or respond occurred prior to designation of the application for comparative hearing or prior to selection of the application in a random selection process, but may be with prejudice in cases of non-compliance with § 22.129. Dismissal will generally be with prejudice if the failure to prosecute or respond occurred after designation of the application for comparative hearing or after selection of the application in a random selection process. The FCC may dismiss applications with prejudice for

failure of the applicant to comply with requirements related to a competitive bidding process.

(d) *Dismissal as defective.* The FCC may dismiss without prejudice applications that it finds to be defective. Applications for authorization or assignment of authorization are defective if:

(1) They are unsigned or incomplete with respect to required answers to questions, informational showings, or other matters of a formal character; or,

(2) They request an authorization that would not comply with one or more of the FCC rules and do not contain a request for waiver of these rule(s), or in the event that the FCC denies such a waiver request, do not contain an alternative proposal that fully complies with the rules;

(e) *Dismissal because spectrum not available.* The FCC may dismiss applications that request spectrum which is unavailable because:

(1) It is not allocated for assignment in the Public Mobile Services (see Part 2 of this chapter);

(2) It was previously assigned to another licensee on an exclusive basis or cannot be assigned to the applicant without causing interference; or

(3) Reasonable efforts have been made to coordinate the proposed facility with foreign administrations under applicable international agreements, and an unfavorable response (harmful interference anticipated) has been received.

(f) *Dismissal as untimely.* The FCC may dismiss without prejudice applications that are prematurely or late filed, including applications filed prior to the opening date or after the closing date of a filing window, or after the cut-off date for a mutually exclusive application filing group.

**§ 22.129 Agreements to dismiss applications, amendments or pleadings.**

Parties that have filed an application in the Public Mobile Services that is mutually exclusive with one or more other applications, and then enter into an agreement to resolve the mutual exclusivity by withdrawing or requesting dismissal of the application or an amendment thereto, must obtain the approval of the FCC. Parties that have

filed or threatened to file a petition to deny, informal objection or other pleading against a pending application in the Public Mobile Services and then seek to withdraw or request dismissal of, or refrain from filing, the petition, either unilaterally or in exchange for a financial consideration, must obtain the approval of the FCC.

(a) The party withdrawing or requesting dismissal of its application, petition to deny, informal objection or other pleading or refraining from filing a pleading must submit to the FCC a request for approval of the withdrawal or dismissal, a copy of any written agreement related to the withdrawal or dismissal, and an affidavit setting forth:

(1) A certification that neither the party nor its principals has received or will receive any money or other consideration in excess of the legitimate and prudent expenses incurred in preparing and prosecuting the application, petition to deny, informal objection or other pleading in exchange for the withdrawal or dismissal of the application, petition to deny, informal objection or other pleading, or threat to file a pleading, except that this provision does not apply to dismissal or withdrawal of applications pursuant to *bona fide* merger agreements;

(2) The exact nature and amount of any consideration received or promised;

(3) An itemized accounting of the expenses for which it seeks reimbursement; and

(4) The terms of any oral agreement related to the withdrawal or dismissal of the application, petition to deny, informal objection or other pleading or threat to file a pleading.

(b) In addition, within 5 days of the filing date of the applicant's or petitioner's request for approval, each remaining party to any written or oral agreement must submit an affidavit setting forth:

(1) A certification that neither the applicant nor its principals has paid or will pay money or other consideration in excess of the legitimate and prudent expenses of the petitioner in exchange for withdrawing or dismissing the application, petition to deny, informal objection or other pleading; and

(2) The terms of any oral agreement relating to the withdrawal or dismissal of the application, petition to deny, informal objection or other pleading.

(c) No person shall make or receive any payments in exchange for withdrawing a threat to file or refraining from filing a petition to deny, informal objection, or any other pleading against an application. For the purposes of this section, reimbursement by an applicant of the legitimate and prudent expenses of a potential petitioner or objector, incurred reasonably and directly in preparing to file a petition to deny, will not be considered to be payment for refraining from filing a petition to deny or an informal objection. Payments made directly to a potential petitioner or objector, or a person related to a potential petitioner or objector, to implement non-financial promises are prohibited unless specifically approved by the FCC.

(d) For the purposes of this section:

(1) Affidavits filed pursuant to this section must be executed by the filing party, if an individual, a partner having personal knowledge of the facts, if a partnership, or an officer having personal knowledge of the facts, if a corporation or association.

(2) Applications, petitions to deny, informal objections and other pleadings are deemed to be pending before the FCC from the time the application or petition to deny is filed with the FCC until such time as an order of the FCC granting, denying or dismissing the application, petition to deny, informal objection or other pleading is no longer subject to reconsideration by the FCC or to review by any court.

(3) "Legitimate and prudent expenses" are those expenses reasonably incurred by a party in preparing to file, filing, prosecuting and/or settling its application, petition to deny, informal objection or other pleading for which reimbursement is sought.

(4) "Other consideration" consists of financial concessions, including, but not limited to, the transfer of assets or the provision of tangible pecuniary benefit, as well as non-financial concessions that confer any type of benefit on the recipient.

**§22.130 Petitions to deny, responsive pleadings.**

Petitions to deny any major filing may be filed by parties able to demonstrate standing to file such petitions. Responsive pleadings to such petitions may be filed in accordance with the provisions of this section.

(a) *Content and requirements.* Petitions to deny and responsive pleadings must:

(1) Clearly identify the pertinent major filing(s);

(2) Comply with all applicable requirements of §1.41 through §1.52 of this chapter;

(3) Contain specific allegations of fact which, except for facts of which official notice may be taken, are supported by affidavit of a person or persons with personal knowledge thereof, and which are sufficient to demonstrate that the petitioner (or respondent) is a party in interest and that a grant or other FCC action regarding the major filing would be inconsistent with the public interest;

(4) Be filed within 30 days after the date of the Public Notice listing the major filing; and.

(5) Contain a certificate of service showing that a copy has been mailed to the applicant no later than the date of filing with the FCC.

(b) *Expansion.* Petitions to deny a major amendment to an application may raise only matters directly related to the major amendment that could not have been raised in connection with the application as originally filed. This paragraph does not apply to petitioners who gain standing because of the major amendment.

(c) *Dismissal.* The FCC may, by letter, dismiss any petition to deny a major filing if the petition does not comply with the requirements of this section, if the issues raised become moot, or if the petitioner or his/her attorney fails to appear at a settlement conference pursuant to §22.135. The reason(s) for the dismissal are stated in the letter. When a petition to deny is dismissed, any related responsive pleadings are also dismissed.

**§22.131 Procedures for mutually exclusive applications.**

Two or more pending applications are mutually exclusive if the grant of one application would effectively preclude the grant of one or more of the others under Commission rules governing the Public Mobile Services involved. The Commission uses the general procedures in this section for processing mutually exclusive applications in the Public Mobile Services. Additional specific procedures are prescribed in the subparts of this part governing the individual Public Mobile Services (see §§22.509, 22.717, and 22.949) and in part 1 of this chapter.

(a) *Separate applications.* Any applicant that files an application knowing that it will be mutually exclusive with one or more applications should not include in the mutually exclusive application a request for other channels or facilities that would not, by themselves, render the application mutually exclusive with those other applications. Instead, the request for such other channels or facilities should be filed in a separate application.

(b) *Filing groups.* Pending mutually exclusive applications are processed in filing groups. Mutually exclusive applications in a filing group are given concurrent consideration. The Commission may dismiss as defective (pursuant to §22.128) any mutually exclusive application(s) whose filing date is outside of the date range for inclusion in the filing group. The types of filing groups used in day-to-day application processing are specified in paragraph (c)(3) of this section. A filing group is one of the following types:

(1) *Renewal filing group.* A renewal filing group comprises a timely-filed application for renewal of an authorization and all timely-filed mutually exclusive competing applications (see §22.145).

(2) *Same-day filing group.* A same-day filing group comprises all mutually exclusive applications whose filing date is the same day, which is normally the filing date of the first-filed application(s).

(3) *Thirty-day notice and cut-off filing group.* A 30-day notice and cut-off filing group comprises mutually exclusive applications whose filing date is no

later than thirty (30) days after the date of the Public Notice listing the first-filed application(s) (according to the filing dates) as acceptable for filing.

(4) *Window filing group.* A window filing group comprises mutually exclusive applications whose filing date is within an announced filing window. An announced filing window is a period of time between and including two specific dates, which are the first and last dates on which applications (or amendments) for a particular purpose may be accepted for filing. In the case of a one-day window, the two dates are the same. The dates are made known to the public in advance.

(c) *Procedures.* Generally, the Commission may grant one application in a filing group of mutually exclusive applications and dismiss the other application(s) in the filing group that are excluded by that grant, pursuant to § 22.128.

(1) *Selection methods.* In selecting the application to grant, the Commission may use competitive bidding, random selection, or comparative hearings, depending upon the type of applications involved.

(2) *Dismissal of applications.* The Commission may dismiss any application in a filing group that is defective or otherwise subject to dismissal under § 22.128, either before or after employing selection procedures.

(3) *Type of filing group used.* Except as otherwise provided in this part, the type of filing group used in the processing of two or more mutually exclusive applications depends upon the purpose(s) of the applications.

(i) If one of the mutually exclusive applications is a timely-filed application for renewal of an authorization, a renewal filing group is used.

(ii) If any mutually exclusive application filed on the earliest filing date is an application for modification and none of the mutually exclusive applications is a timely-filed application for renewal, a same-day filing group is used.

(iii) If all of the mutually exclusive applications filed on the earliest filing date are applications for initial authorization, a 30-day notice and cut-off filing group is used, except that, for

Phase I unserved area applications in the Cellular Radiotelephone Service, a one-day window filing group is used (see § 22.949).

(4) *Disposition.* If there is only one application in any type of filing group, the Commission may grant that application and dismiss without prejudice any mutually exclusive applications not in the filing group. If there is more than one mutually exclusive application in a filing group, the Commission disposes of these applications as follows:

(i) *Applications in a renewal filing group.* All mutually exclusive applications in a renewal filing group are designated for comparative consideration in a hearing.

(ii) *Applications in a 30-day notice and cut-off filing group.*

(A) If all of the mutually exclusive applications in a 30-day notice and cut-off filing group are applications for initial authorization, and none is an application for facilities in the Rural Radiotelephone Service, the Commission shall administer competitive bidding procedures in accordance with subpart Q of part 1 of this chapter. After such procedures, the application of the successful bidder may be granted and the other applications may be dismissed without prejudice.

(B) If any of the mutually exclusive applications in a 30-day notice and cut-off filing group is an application for modification or an application for facilities in the Rural Radiotelephone Service, the Commission may attempt to resolve the mutual exclusivity by facilitating a settlement between the applicants. If a settlement is not reached within a reasonable time, the Commission may designate all applications in the filing group for comparative consideration in a hearing. In this event, the result of the hearing disposes of all the applications in the filing group.

(iii) *Applications in a same-day filing group.* If there are two or more mutually exclusive applications in a same-day filing group, the Commission may attempt to resolve the mutual exclusivity by facilitating a settlement between the applicants. If a settlement is not reached within a reasonable time,

the Commission may designate all applications in the filing group for comparative consideration in a hearing. In this event, the result of the hearing disposes of all of the applications in the filing group.

(iv) *Applications in a window filing group.* Applications in a window filing group are processed in accordance with the procedures for a 30-day notice and cut-off filing group in paragraph (c)(4)(ii) of this section.

(d) *Terminology.* For the purposes of this section, terms have the following meanings:

(1) The *filing date* of an application is the date on which that application was received in a condition acceptable for filing or the date on which the most recently filed major amendment to that application was received, whichever is later, excluding major amendments in the following circumstances:

(i) The major amendment reflects only a change in ownership or control found by the Commission to be in the public interest;

(ii) The major amendment as received is defective or otherwise found unacceptable for filing; or

(iii) The application being amended has been designated for hearing and the Commission or the presiding officer accepts the major amendment.

(2) An *application for initial authorization* is:

(i) Any application requesting an authorization for a new system or station;

(ii) Any application requesting authorization for an existing station to operate on an additional channel, unless the additional channel is for paired two-way radiotelephone operation, is in the same frequency range as the existing channel(s), and will be operationally integrated with the existing channel(s) such as by trunking;

(iii) Any application requesting authorization for a new transmitter at a location more than 2 kilometers (1.2 miles) from any existing transmitters of the applicant licensee on the requested channel or channel block; or

(iv) Any application to expand the CGSA of a cellular system (as defined in §22.911), except during the five-year build-out period.

(3) An *application for modification* is any application other than an application for initial authorization or renewal.

[59 FR 59954, Nov. 21, 1994]

#### §22.132 Grant of applications.

Applications for authorization may be granted thirty days after the issuance date of a Public Notice listing an application or the latest filed major amendment thereto as acceptable for filing.

(a) *Criteria for grants.* The FCC grants applications without a hearing if, after examination of the application and consideration of any petitions or other pleadings and of such other matters as it may officially notice, the FCC finds that:

(1) A grant will serve the public interest, convenience, and necessity;

(2) There are no substantial and material questions of fact presented;

(3) The applicant is eligible and qualified under applicable FCC regulations and policies;

(4) The application is acceptable for filing, and complies with the FCC rules and other applicable requirements;

(5) The application has not been designated for a hearing after being selected in a random selection process;

(6) There are no applications entitled to comparative consideration with the application being granted; and

(7) Operation of the proposed station would not cause interference to any authorized station(s).

(b) *Grant of petitioned applications.* The FCC may grant, without a formal hearing, applications against which petitions to deny has been filed. If any petition(s) to deny are pending (i.e. have not been dismissed pursuant to §22.130(c) or withdrawn by the petitioner) when an application is granted, the FCC denies the petition(s) and issues a concise statement of the reason(s) for the denial, disposing of all substantive issues raised in the petitions.

(c) *Partial and conditional grants.* The FCC may grant applications in part, and/or subject to conditions other than those normally applied to authorizations of the same type. When the FCC does this, it will inform the applicant of the reasons therefor. Such partial or

conditional grants are final unless the FCC revises its action in response to a petition for reconsideration. Such petitions for reconsideration must be filed by the applicant within thirty days after the date of the letter or order stating the reasons for the partial or conditional grant, and must reject the partial or conditional grant and return the instrument of authorization.

(d) *Designation for hearing.* The FCC may designate applications for a hearing, specifying with particularity the matters in issue, if, after consideration of the application, any petitions or other pleadings, and other matters which it may officially notice, the FCC is unable to make one or more of the findings listed in paragraph (a) of this section. The FCC may grant, deny or take other action with respect to applications designated for a hearing.

**§22.135 Settlement conference.**

Parties are encouraged to use alternative dispute resolution procedures to settle disputes (see subpart E of part 1 of this chapter). In any contested proceeding, the FCC, in its discretion, may direct the parties or their attorneys to appear before it for a conference.

(a) The purposes of such conferences are:

(1) To obtain admissions of fact or stipulations between the parties as to any or all of the matters in controversy;

(2) To consider the necessity for or desirability of amendments to the pleadings, or of additional pleadings or evidentiary submissions;

(3) To consider simplification or narrowing of the issues;

(4) To encourage settlement of the matters in controversy by agreement between the parties; and

(5) To consider other matters that may aid in the resolution of the contested proceeding.

(b) Conferences are scheduled by the FCC at a time and place it may designate, to be conducted in person or by telephone conference call.

(c) The failure of any party or attorney, following reasonable notice, to appear at a scheduled conference will be deemed a failure to prosecute, subjecting that party's application or petition

to dismissal by the FCC pursuant to §22.128(c) or §22.130(c).

**§22.137 Assignment of authorization; transfer of control.**

Authorizations in the Public Mobile Services may be assigned by the licensee to another party, voluntarily or involuntarily, directly or indirectly, or by transfer of control of a licensee holding such authorizations, only upon approval by the FCC. The assignee is responsible for ascertaining that the station facilities are and will remain in compliance with the terms and conditions of the authorization to be assigned.

(a) *Application required.* The assignor or transferor must file an application for approval of assignment or transfer of control (FCC Form 490). In the case of involuntary assignment, such application must be filed no later than 30 days after the event causing the assignment. The assignee or transferee must file a report qualifying it as a common carrier (FCC Form 430) unless a current report is already on file with the FCC.

(b) *Notification of completion.* Assignments and transfers of control must be completed within 60 days of FCC approval. The assignee or transferee must notify the FCC by letter of the date of completion of the assignment or transfer of control. If an assignment or transfer of control is not completed within this time, the assignor or transferor must so notify the FCC by letter, and the assignee or transferee must submit the authorization(s) to the FCC for cancellation or request an extension of time to complete the assignment or transfer of control. If the assignment or transfer of control is not completed, the authorization(s) remain with the assignor or transferor.

(c) *Partial assignment of authorization.* If the authorization for some, but not all, of the facilities of a Public Mobile Services station is assigned to another party, voluntarily or involuntarily, such action is a partial assignment of authorization.

(1) To request FCC approval of a partial assignment of authorization, the following must be filed in addition to the forms required by paragraph (a) of this section:

(i) The assignor must notify the FCC (FCC Form 489) of the facilities to be deleted from its authorization upon completion of the assignment.

(ii) The assignee must apply for authority (FCC Form 600) to operate a new station including the facilities for which authorization is assigned, or to modify the assignee's existing station to include the facilities for which authorization was assigned.

(2) Partial assignments must be completed within 60 days of FCC approval. If an approved partial assignment is not completed within this time, the assignor must notify the FCC (FCC Form 489), and the assignee must submit the authorization(s) to the FCC for cancellation or request an extension of time to complete the assignment. If the assignment is not completed, the authorization(s) remain with the assignor.

(d) *Limitations.* The FCC may deny applications for assignment of authorization or consent to transfer of control if:

(1) The FCC is unable to make the findings contained in §22.132(a) with respect to both parties to the assignment or transfer;

(2) The authorization was obtained for the principal purpose of speculation or profitable resale, rather than provision of common carrier telecommunication services to the public; or,

(3) The authorization is for a commercial aviation system in the Air-ground Radiotelephone Service or an unserved area cellular system in the Cellular Radiotelephone Service and the system has not been constructed or operated, or has been operated for less than one year.

(i) Licensees must not enter into agreements (e.g. option agreements or management contracts) to assign authorizations before or during the first year of operation, even if the assignment is to take place after the first year of operation.

(ii) Notwithstanding the introductory texts of paragraphs (d) and (d)(3) of this section, the FCC may grant applications for *pro forma* assignments during the first year of operation.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

#### § 22.139 Trafficking.

Carriers must not obtain or attempt to obtain an authorization in the Public Mobile services for the principal purpose of speculation or profitable resale of the authorization, but rather for the provision of common carrier telecommunication services to the public.

(a) Applications for approval of assignment of authorization may be reviewed by the FCC to determine if the circumstances indicate trafficking in Public Mobile services authorizations.

(b) The FCC may require submission of an affirmative, factual showing, supported by affidavit of persons with personal knowledge thereof, to demonstrate that the assignor did not acquire the authorization for the principal purpose of speculation or profitable resale of the authorization. This showing may include, for example, a demonstration that the proposed assignment is due to changed circumstances (described in detail) affecting the licensee after the grant of the authorization, or that the proposed assignment is incidental to a sale of other facilities or a merger of interests.

#### § 22.142 Commencement of service; notification requirement.

Stations must begin providing service to subscribers no later than the date of required commencement of service specified on the authorization. If service to subscribers has not begun by the date of required commencement of service, the authorization terminates, in whole or in part, without action by the FCC, pursuant to §21.144. Additional requirements for construction of facilities apply to cellular systems (see §22.946) and commercial aviation air-ground systems (see §22.873).

(a) *Construction period.* The period between the date of grant of an authorization and the date of required commencement of service is referred to as the construction period. The terms of construction periods are given in the subparts of this part governing each Public Mobile Service.

(b) *Notification requirement.* Licensees must notify the FCC (FCC Form 489) of commencement of service to subscribers. The notification must be mailed or



delivered to the filing place (see § 22.106) no later than 15 days after service begins.

(1) The notification must state whether the station was constructed exactly as authorized or with minor changes.

(2) If service to subscribers has begun using some, but not all, of the authorized transmitters, the notification must show to which specific transmitters it applies. Additional notifications must be filed if and when other transmitters commence providing service to subscribers. If the licensee no longer intends to construct and/or operate the remaining authorized transmitters, the notification should so state.

(3) This section does not require licensees to notify the FCC of facilities added or modified pursuant to the provisions of §§ 22.163 and 22.165. It applies only to facilities specifically listed in authorizations for which a construction period is provided.

(c) *Requests for extension.* Before the date of required commencement of service, licensees may file an application (FCC Form 600) requesting an extension of the construction period.

(1) The FCC may grant applications for extension of the construction period if the licensee shows that failure to commence providing service to subscribers is due to causes beyond its control.

(2) The FCC does not grant applications for extension of the construction period if failure to commence providing service to subscribers is due to delays caused by lack of financing, failure to obtain an antenna site, or failure to order equipment in a timely manner. If the licensee orders equipment within 90 days of authorization grant, a presumption of diligence is created.

(3) The FCC does not grant applications for extension of the construction period if the licensee fails to commence providing service to subscribers because it intends to assign the authorization. The FCC does not grant applications for extension of the construction period solely to allow an assignee to complete facilities the assignor failed to construct.

(d) *Automatic extension for relocation.* If, prior to the end of the construction period, a licensee files an application

(FCC Form 600) to relocate a transmitter because of involuntary loss of the proposed site or for other reasons due to causes beyond the licensee's control, the construction period is automatically extended pending disposition of that application.

(1) Extension of the construction period for one transmitter under this paragraph does not extend the construction period for other transmitter under the same authorization that are not to be relocated.

(2) The filing of applications for modifications other than involuntary relocation does not automatically extend the construction period.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

#### **§ 22.143 Construction prior to grant of application.**

Applicants may construct facilities in the Public Mobile services prior to grant of their applications, subject to the provisions of this section, but must not operate such facilities until the FCC grants an authorization. If the conditions stated in this section are not met, applicants must not begin to construct facilities in the Public Mobile Services.

(a) *When applicants may begin construction.* An applicant may begin construction of a facility 35 days after the date of the Public Notice listing the application for that facility as acceptable for filing, except that an applicant whose application to operate a new cellular system was selected in a random selection process may begin construction of that new cellular system 35 days after the date of the Public Notice listing it as the tentative selectee.

(b) *Notification to stop.* If the FCC for any reason determines that construction should not be started or should be stopped while an application is pending, and so notifies the applicant, orally (followed by written confirmation) or in writing, the applicant must not begin construction or, if construction has begun, must stop construction immediately.

(c) *Assumption of risk.* Applicants that begin construction pursuant to this section before receiving an authorization do so at their own risk and have

no recourse against the United States for any losses resulting from:

- (1) Applications that are not granted;
  - (2) Errors or delays in issuing Public Notices;
  - (3) Having to alter, relocate or dismantle the facility; or
  - (4) Incurring whatever costs may be necessary to bring the facility into compliance with applicable laws, or FCC rules and orders.
- (d) *Conditions.* Except as indicated, all pre-grant construction is subject to the following conditions:
- (1) The application is not mutually exclusive with any other application, except for successful bidders and tentative selectees in the Cellular Radiotelephone Service;
  - (2) No petitions to deny the application have been filed;
  - (3) The application does not include a request for a waiver of one or more FCC rules;
  - (4) For any construction or alteration that would exceed the requirements of §17.7 of this chapter, the licensee has notified the appropriate Regional Office of the Federal Aviation Administration (FAA Form 7460–1), filed a request for antenna height clearance and obstruction marking and lighting specifications (FCC Form 854) with the FCC, PRB, Support Services Branch, Gettysburg, PA 17325;
  - (5) The applicant has indicated in the application that the proposed facility would not have a significant environmental effect, in accordance with §§1.1301 through 1.1319 of this chapter; and,
  - (6) Under applicable international agreements and rules in this part, individual coordination of the proposed channel assignment(s) with a foreign administration is not required.

**§22.144 Termination of authorizations.**

Authorizations in the Public Mobile Services remain valid until terminated in accordance with this section, except that the FCC may revoke an authorization pursuant to section 312 of the Communications Act of 1934, as amended (47 U.S.C. 312).

(a) *Expiration.* Authorizations automatically terminate, without specific FCC action, on the expiration date specified therein, unless a timely appli-

cation for renewal is filed (see §22.145). No authorization granted under the provisions of this part shall be for a longer term than ten years. See 47 U.S.C. 307(c).

(b) *Failure to commence providing service to subscribers.* Authorizations automatically terminate, in whole or in part, without specific FCC action, on the date of required commencement of service, if service to subscribers is not commenced by that date (see §22.142), except as provided in paragraph (b)(1) of this section.

(1) Authorizations do not terminate while a timely filed application for extension of the construction period is pending (see §22.142(c)).

(2) If a timely filed application for extension of the construction period is dismissed or denied, the authorization automatically terminates, in whole or in part, without specific FCC action, on the day after the applicant or the applicant's attorney is notified of the FCC's action dismissing or denying the application for extension of the construction period.

(c) *Service discontinued.* Authorizations automatically terminate, without specific FCC action, if service is permanently discontinued as provided in §22.317.

(d) *STAs.* Special Temporary Authorizations (STAs) automatically terminate, without specific FCC action, at the end of the period specified therein, except as provided in paragraph (d)(1) of this section, or upon failure to comply with the terms and conditions therein.

(1) STAs do not terminate while a timely filed request for an extension of the STA term, in accordance with §22.125(b), is pending.

(2) If a timely filed request for extension of the STA term is dismissed or denied, the STA automatically terminates, without specific FCC action, on the day after the applicant or the applicant's attorney is notified of the FCC's action dismissing or denying the request for extension.

(e) *Cancellation.* Authorizations submitted by licensees for cancellation terminate when the FCC gives Public Notice of such action.

**§ 22.145 Renewal application procedures.**

Applications for renewal (FCC Form 405) of expiring authorizations must be filed by the licensee prior to, but no earlier than 30 days before, the expiration date of the authorization. A separate application is required for each authorization (call sign). Competing applications from parties wishing to challenge the renewal must be filed during the same 30 day period. Additional renewal requirements applicable only to specific Public Mobile Services are set forth in the subparts governing those services.

**§ 22.150 Standard pre-filing technical coordination procedure.**

For operations on certain channels in the Public Mobile Services, carriers must attempt to coordinate the proposed use of spectrum with other spectrum users prior to filing an application for authority to operate a station. Rules requiring this procedure for specific channels and types of stations are contained in the subparts governing the individual Public Mobile Services.

(a) Coordination comprises two steps—notification and response. Each step may be accomplished orally or in writing.

(b) Notification must include relevant technical details of the proposal. At minimum, this should include the following:

- (1) Geographical coordinates of the antenna site(s).
- (2) Transmitting and receiving channels to be added or changed.
- (3) Transmitting power, emission type and polarization.
- (4) Transmitting antenna pattern and maximum gain.
- (5) Transmitting antenna height above ground level.

(c) Applicants and licensees receiving notification must respond promptly, even if no channel usage conflicts are anticipated. If any notified party fails to respond within 30 days, the applicant may file the application without a response from that party.

(d) The 30-day period begins on the date of receipt of the notification by the party being notified. If the notification is by mail, this date may be ascertained by:

(1) The return receipt on certified mail,

(2) The enclosure of a card to be dated and returned by the party being notified, or

(3) A reasonable estimate of the time required for the mail to reach its destination. In this case, the date when the 30-day period will expire must be stated in the notification.

(e) All channel usage conflicts discovered during the coordination process should be resolved prior to filing of the application. If the applicant is unable or unwilling to resolve a particular conflict, the application may be accepted for filing if it contains a statement describing the unresolved conflict and a brief explanation of the reasons why a resolution was not achieved.

(f) If a number of changes in the technical parameters of a proposed facility become necessary during the course of the coordination process, an attempt should be made to minimize the number of separate notifications. If the changes are incorporated into a completely revised notice, the items that were changed from the previous notice should be identified.

(g) In situations where subsequent changes are not numerous or complex, the party receiving the changed notification should make an effort to respond in less than 30 days. If the applicant believes a shorter response time is reasonable and appropriate, it should so indicate in the notice and suggest a response date.

(h) If a subsequent change in the technical parameters of a proposed facility could not affect the facilities of one or more of the parties that received an initial notification, the applicant is not required to coordinate that change with these parties. However, these parties must be advised of the change and of the opinion that coordination is not required.

**§ 22.157 Distance computation.**

The method given in this section must be used to compute the distance between any two locations, except that, for computation of distance involving stations in Canada and Mexico, methods for distance computation

specified in the applicable international agreement, if any, must be used instead. The method set forth in this paragraph is considered to be sufficiently accurate for distances not exceeding 475 km (295 miles).

(a) Convert the latitudes and longitudes of each reference point from degree-minute-second format to degree-decimal format by dividing minutes by 60 and seconds by 3600, then adding the results to degrees.

$$\text{LATX}_{\text{dd}} = \text{DD} + \frac{\text{MM}}{60} + \frac{\text{SS}}{3600}$$

$$\text{LONX}_{\text{dd}} = \text{DDD} + \frac{\text{MM}}{60} + \frac{\text{SS}}{3600}$$

(b) Calculate the mean geodetic latitude between the two reference points by averaging the two latitudes:

$$\text{ML} = \frac{\text{LAT1}_{\text{dd}} + \text{LAT2}_{\text{dd}}}{2}$$

(c) Calculate the number of kilometers per degree latitude difference for the mean geodetic latitude calculated in paragraph (b) of this section as follows:

$$\text{KPD}_{\text{lat}} = 111.13209 - 0.56605 \cos 2\text{ML} + 0.00120 \cos 4\text{ML}$$

(d) Calculate the number of kilometers per degree of longitude difference for the mean geodetic latitude calculated in paragraph (b) of this section as follows:

$$\text{KPD}_{\text{lon}} = 111.41513 \cos \text{ML} - 0.09455 \cos 3\text{ML} + 0.00012 \cos 5\text{ML}$$

(e) Calculate the North-South distance in kilometers as follows:

$$\text{NS} = \text{KPD}_{\text{lat}} \times (\text{LAT1}_{\text{dd}} - \text{LAT2}_{\text{dd}})$$

(f) Calculate the East-West distance in kilometers as follows:

$$\text{EW} = \text{KPD}_{\text{lon}} \times (\text{LON1}_{\text{dd}} - \text{LON2}_{\text{dd}})$$

(g) Calculate the distance between the locations by taking the square root

of the sum of the squares of the East-West and North-South distances:

$$\text{DIST} = \sqrt{\text{NS}^2 + \text{EW}^2}$$

(h) Terms used in this section are defined as follows:

(1) LAT1<sub>dd</sub> and LON1<sub>dd</sub> are the coordinates of the first location in degree-decimal format.

(2) LAT2<sub>dd</sub> and LON2<sub>dd</sub> are the coordinates of the second location in degree-decimal format.

(3) ML is the mean geodetic latitude in degree-decimal format.

(4) KPD<sub>lat</sub> is the number of kilometers per degree of latitude at a given mean geodetic latitude.

(5) KPD<sub>lon</sub> is the number of kilometers per degree of longitude at a given mean geodetic latitude.

(6) NS is the North-South distance in kilometers.

(7) DIST is the distance between the two locations, in kilometers.

**§22.159 Computation of average terrain elevation.**

Average terrain elevation must be calculated by computer using elevations from a 30 second point or better topographic data file. The file must be identified. If a 30 second point data file is used, the elevation data must be processed for intermediate points using interpolation techniques; otherwise, the nearest point may be used. In cases of dispute, average terrain elevation determinations can also be done manually, if the results differ significantly from the computer derived averages.

(a) Radial average terrain elevation is calculated as the average of the elevation along a straight line path from 3 to 16 kilometers (2 and 10 miles) extending radially from the antenna site. If a portion of the radial path extends over foreign territory or water, such portion must not be included in the computation of average elevation unless the radial path again passes over United States land between 16 and 134 kilometers (10 and 83 miles) away from the station. At least 50 evenly spaced data points for each radial should be used in the computation.

(b) Average terrain elevation is the average of the eight radial average terrain elevations (for the eight cardinal radials).

(c) For locations in Dade and Broward Counties, Florida, the method prescribed above may be used or average terrain elevation may be assumed to be 3 meters (10 feet).

**§22.161 Application requirements for ASSB.**

Applications for base stations employing amplitude companded single sideband modulation (ASSB) must contain the following information:

(a) The application must describe fully the modulation characteristics, emission and occupied bandwidth, and specify the center frequency of the emission for each channel, carrier frequency, and pilot channels, if any. The emission must fall completely within a channel assignable for two-way operation in the Paging and Radiotelephone Service, Rural Radiotelephone Service or Offshore Radiotelephone Service.

(b) The application must contain interference studies between stations within an authorized bandwidth, whether FM-to-ASSB, ASSB-to-FM, or ASSB-to-ASSB in accordance with the following: For ASSB stations, the transmitter nearest to the protected station must be used. The effective radiated power in the direction of the protected station must be the sum of the peak effective radiated power of all transmitters in the group, in the direction of the protected station. The antenna center of radiation height above average terrain must be the highest antenna center of radiation height of any transmitter in the group in the direction of the protected station. The channel of the group is assumed to be the same as that of the protected station (co-channel), and studies must be made in accordance with § 22.567.

**§22.163 Minor modifications to existing stations.**

Licenses may make modifications to existing stations without obtaining prior Commission approval provided:

(a) *Classification as minor.* The modifications must be minor. Modifications to a station are minor if an application

filed solely for the purpose of obtaining authorization for such modifications would not be classified as major in accordance with § 22.123.

(b) *International coordination.* The modifications are limited to those for which individual coordination of the channel assignment(s) with a foreign administration, under applicable international agreements and rules in this part, is not required.

(c) *Antenna structure clearance required.* For any construction or alteration that would exceed the requirements of § 17.7 of this chapter, licensees must notify the appropriate Regional Office of the Federal Aviation Administration (FAA Form 7460-1) and file a request for antenna height clearance and obstruction marking and lighting specifications (FCC Form 854) with the FCC, PRB, Support Services Branch, Gettysburg, PA 17325.

(d) *Provision of information upon request.* Licensees must supply administrative or technical information concerning the modified facilities upon request by the FCC. At the time modifications are made pursuant to this section, licensees must make a record of the pertinent technical and administrative information so that such information is readily available. See § 22.303.

(e) *Notification required for modifications affecting CGSA.* Licensees in the Cellular Radiotelephone Service must notify the FCC (FCC Form 489) of any modifications made under this section that cause a change in the Cellular Geographic Service Area boundary (including the removal of a transmitter or transmitters). The notification must include full size and reduced maps, and supporting engineering, as described in § 22.953(a)(5) (i) through (iii). If the modification involves a contract service area boundary (SAB) extension (see § 22.912), the notification must include a statement as to whether the five year build-out period for the system on the relevant channel block in the market into which the SAB extends has elapsed, and whether the SAB extends into any unserved area in that market. The notification must be mailed or delivered to the filing place (see § 22.106) no later than 15 days after the modification is made.

**§ 22.165 Additional transmitters for existing systems.**

A licensee may operate additional transmitters at additional locations on the same channel or channel block as its existing system without obtaining prior Commission approval provided:

(a) *International coordination.* The locations and/or technical parameters of the additional transmitters are such that individual coordination of the channel assignment(s) with a foreign administration, under applicable international agreements and rules in this part, is not required.

(b) *Antenna structure clearance required.* For any construction or alteration that would exceed the requirements of § 17.7 of this chapter, licensees must notify the appropriate Regional Office of the Federal Aviation Administration (FAA Form 7460-1) and file a request for antenna height clearance and obstruction marking and lighting specifications (FCC Form 854) with the FCC, PRB, Support Services Branch, Gettysburg, PA 17325.

(c) *Environmental.* The additional transmitters must not have a significant environmental effect as defined by §§ 1.1301 through 1.1319 of this chapter.

(d) *Paging and Radiotelephone Service.* The provisions in this paragraph apply for stations in the Paging and Radiotelephone Service.

(1) The service area and interfering contours of the additional transmitter(s) must be totally encompassed by the composite service area contour and predicted interfering contour, respectively, of the existing station on the same channel; except that this limitation does not apply to nationwide network paging stations or in-building radiation systems.

(2) Additional transmitters in the 43 MHz frequency range operate under developmental authority, subject to the conditions set forth in § 22.411.

(3) The additional transmitters must not operate on control channels in the 72–76 MHz, 470–512 MHz, 928 MHz, 932 MHz, 941 MHz or 959 MHz frequency ranges.

(e) *Cellular Radiotelephone Service.* During the five year build-out period, the service area boundaries of the additional transmitters, as calculated by the method set forth in § 22.911(a), must

remain within the market, except that the service area boundaries may extend beyond the market boundary into area that is part of the CGSA or is already encompassed by the service area boundaries of previously authorized facilities. After the five year build-out period, the service area boundaries of the additional transmitters, as calculated by the method set forth in § 22.911(a), must remain within the CGSA. Licensees must notify the FCC (FCC Form 489) of any transmitters added under this section that cause a change in the CGSA boundary. The notification must include full size and reduced maps, and supporting engineering, as described in § 22.953(a)(5) (i) through (iii). If the addition of transmitters involves a contract service area boundary (SAB) extension (see § 22.912), the notification must include a statement as to whether the five year build-out period for the system on the relevant channel block in the market into which the SAB extends has elapsed, and whether the SAB extends into any unserved area in the market. The notification must be mailed or delivered to the filing place (see § 22.106) no later than 15 days after the addition is made.

(f) *Air-ground Radiotelephone Service.* Ground stations may be added to Commercial Aviation air-ground systems at previously established ground station locations, pursuant to § 22.859, subject to compliance with the applicable technical rules. This section does not apply to General Aviation air-ground stations.

(g) *Rural Radiotelephone Service.* A “service area” and “interfering contours” must be determined using the same method as for stations in the Paging and Radiotelephone Service. The service area and interfering contours so determined for the additional transmitter(s) must be totally encompassed by the similarly determined composite service area contour and predicted interfering contour, respectively, of the existing station on the same channel. This section does not apply to Basic Exchange Telecommunications Radio Systems.

(h) *Offshore Radiotelephone Service.* This section does not apply to stations

in the Offshore Radiotelephone Service.

(i) *Provision of information upon request.* Upon request by the FCC, licensees must supply administrative or technical information concerning the additional transmitters. At the time transmitters are added pursuant to this section, licensees must make a record of the pertinent technical and administrative information so that such information is readily available. See § 22.303.

[59 FR 59507, Nov. 17, 1994; 59 FR 64856, Dec. 16, 1994]

**§ 22.169 International coordination of channel assignments.**

Channel assignments under this part are subject to the applicable provisions and requirements of treaties and other international agreements between the United States government and the governments of Canada and Mexico.

**Subpart C—Operational and Technical Requirements**

OPERATIONAL REQUIREMENTS

**§ 22.301 Station inspection.**

Upon reasonable request, the licensee of any station authorized in the Public Mobile Services must make the station and station records available for inspection by authorized representatives of the Commission at any reasonable hour.

[59 FR 59955, Nov. 21, 1994]

**§ 22.303 Retention of station authorizations; identifying transmitters.**

The current authorization for each station, together with current administrative and technical information concerning modifications to facilities pursuant to § 22.163 and added facilities pursuant to § 22.165 must be retained as a permanent part of the station records. A clearly legible photocopy of the authorization must be available at each regularly attended control point of the station, or in lieu of this photocopy, licensees may instead make available at each regularly attended control point the address or location where the licensee's current authorization and other records may be found.

The station call sign must be clearly and legibly marked on or near every transmitting facility, other than mobile transmitters, of the station.

**§ 22.305 Operator and maintenance requirements.**

FCC operator permits and licenses are not required to operate, repair or maintain equipment authorized in the Public Mobile Services. Station licensees are responsible for the proper operation and maintenance of their stations, and for compliance with FCC rules.

**§ 22.307 Operation during emergency.**

Licensees of stations in the Public Mobile services may, during a period of emergency in which normal communications facilities are disrupted as a result of hurricane, flood, earthquake or other natural disaster, civil unrest, widespread vandalism, national emergencies or emergencies declared by Executive Order of the President, use their stations to temporarily provide emergency communications services in a manner or configuration not normally allowed by this part, provided that such operations comply with the provisions of this section.

(a) *Technical limitations.* Public Mobile stations providing temporary emergency communications service must not transmit:

- (1) On channels other than those authorized for normal operations.
- (2) With power in excess of that authorized for normal operations;
- (3) Emission types other than those authorized for normal operations.

(b) *Discontinuance.* Temporary emergency use of Public Mobile stations must be discontinued as soon as normal communication facilities are restored. The FCC may, at any time, order the discontinuance of any such emergency communication services.

**§ 22.313 Station identification.**

The licensee of each station in the Public Mobile Services must ensure that the transmissions of that station are identified in accordance with the requirements of this section.

(a) Station identification is not required for transmission by:

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(1) Stations in the Cellular Radiotelephone Service;

(2) General aviation ground stations in the Air-ground Radiotelephone Service;

(3) Rural subscriber stations using meteor burst propagation mode communications in the Rural Radiotelephone Service;

(4) Rural subscriber stations using Basic Exchange Telephone Radio Systems in the Rural Radiotelephone Service; or

(5) Nationwide network paging stations operating on 931 MHz channels.

(b) For all other stations in the Public Mobile Services, station identification must be transmitted each hour within five minutes of the hour, or upon completion of the first transmission after the hour. Transmission of station identification may be temporarily delayed to avoid interrupting the continuity of any public communication in progress, provided that station identification is transmitted at the conclusion of that public communication.

(c) Station identification must be transmitted by telephony using the English language or by telegraphy using the international Morse code, and in a form that can be received using equipment appropriate for the modulation type employed, and understood without the use of unscrambling devices, except that, alternatively, station identification may be transmitted digitally, provided that the licensee provides the Commission with information sufficient to decode the digital transmission to ascertain the call sign. Station identification comprises transmission of the call sign assigned by the Commission to the station, however, the following may be used in lieu of the call sign.

(1) For transmission from subscriber operated transmitters, the telephone number or other designation assigned by the carrier, provided that a written record of such designations is maintained by the carrier;

(2) For general aviation airborne mobile stations in the Air-Ground Radiotelephone Service, the official FAA registration number of the aircraft;

(3) For stations in the Paging and Radiotelephone Service, a call sign as-

signed to another station within the same system.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59955, Nov. 21, 1994]

**§22.315 Duty to respond to official communications.**

Licensees in the Public Mobile services must respond to official communications from the FCC with reasonable dispatch and according to the tenor of the communication. Failure to do so may be considered by the FCC to reflect adversely on a carrier's qualifications to hold FCC authorizations, and may also create liabilities for other sanctions.

(a) Any person receiving official notice of an apparent or actual violation of a federal statute, international agreement, Executive Order, or regulation pertaining to communications shall respond in writing within 10 days to the office of the FCC originating the notice. If a response can not be sent within 10 days, an acknowledgement shall be sent, followed by a response as soon as possible explaining the reason for the delay.

(b) Responses to official communications must be complete and self-contained without reference to other communications unless copies of such other communications are attached to the response.

**§22.317 Discontinuance of station operation.**

If the operation of a Public Mobile Services station is permanently discontinued, the licensee shall send the authorization for cancellation to: Mobile Services Division, Common Carrier Bureau, Federal Communications Commission, Washington DC 20554. For purposes of this section, any station that has not provided service to subscribers for 90 continuous days is considered to have been permanently discontinued, unless the applicant notified the FCC otherwise prior to the end of the 90 day period and provided a date on which operation will resume, which date must not be in excess of 30 additional days.



**§ 22.321 Equal employment opportunities.**

Public Mobile Services licensees shall afford equal opportunity in employment to all qualified persons, and personnel must not be discriminated against in employment because of sex, race, color, religion, or national origin.

(a) *Equal employment opportunity program.* Each licensee shall establish, maintain, and carry out a positive continuing program of specific practices designed to assure equal opportunity in every aspect of employment policy and practice.

(1) Under the terms of its program, each licensee shall:

(i) Define the responsibility of each level of management to insure a positive application and vigorous enforcement of the policy of equal opportunity, and establish a procedure to review and control managerial and supervisory performance.

(ii) Inform its employees and recognized employee organizations of the positive equal employment opportunity policy and program and enlist their cooperation.

(iii) Communicate its equal employment opportunity policy and program and its employment needs to sources of qualified applicants without regard to sex, race, color, religion or national origin, and solicit their recruitment assistance on a continuing basis.

(iv) Conduct a continuing campaign to exclude every form of prejudice or discrimination based upon sex, race, color, religion, or national origin, from the licensee's personnel policies and practices and working conditions.

(v) Conduct a continuing review of job structure and employment practices and adopt positive recruitment, training, job design and other measures needed in order to ensure genuine equality of opportunity to participate fully in all organizational units, occupations and levels of responsibility.

(2) The program must reasonably address specific concerns through policies and actions as set forth in this paragraph, to the extent that they are appropriate in consideration of licensee size, location and other factors.

(i) *To assure nondiscrimination in recruiting.* (A) Posting notices in the licensee's offices informing applicants

for employment of their equal employment rights and their right to notify the Equal Employment Opportunity Commission (EEOC), the Federal Communications Commission (FCC), or other appropriate agency. Where a substantial number of applicants are Spanish-surnamed Americans, such notice should be posted in both Spanish and English.

(B) Placing a notice in bold type on the employment application informing prospective employees that discrimination because of sex, race, color, religion or national origin is prohibited, and that they may notify the EEOC, the FCC or other appropriate agency if they believe they have been discriminated against.

(C) Placing employment advertisements in media which have significant circulation among minority groups in the recruiting area.

(D) Recruiting through schools and colleges with significant minority group enrollments.

(E) Maintaining systematic contacts with minority and human relations organizations, leaders and spokespersons to encourage referral of qualified minority or female applicants.

(F) Encouraging present employees to refer minority or female applicants.

(G) Making known to the appropriate recruitment sources in the employer's immediate area that qualified minority members are being sought for consideration whenever the licensee hires.

(ii) *To assure nondiscrimination in selection and hiring.* (A) Instructing employees of the licensee who make hiring decisions that all applicants for all jobs are to be considered without discrimination.

(B) Where union agreements exist, cooperating with the union or unions in the development of programs to assure qualified minority persons or females of equal opportunity for employment, and including an effective nondiscrimination clause in new or renegotiated union agreements.

(C) Avoiding use of selection techniques or tests that have the effect of discriminating against minority groups or females.

(iii) *To assure nondiscriminatory placement and promotion.* (A) Instructing employees of the licensee who make decisions on placement and promotion that minority employees and females are to be considered without discrimination, and that job areas in which there is little or no minority or female representation should be reviewed to determine whether this results from discrimination.

(B) Giving minority groups and female employees equal opportunity for positions which lead to higher positions. Inquiring as to the interest and skills of all lower-paid employees with respect to any of the higher-paid positions, followed by assistance, counseling, and effective measures to enable employees with interest and potential to qualify themselves for such positions.

(C) Reviewing seniority practices to insure that such practices are non-discriminatory and do not have a discriminatory effect.

(D) Avoiding use of selection techniques or tests that have the effect of discriminating against minority groups or females.

(iv) *To assure nondiscrimination in other areas of employment practices.* (A) Examining rates of pay and fringe benefits for present employees with equivalent duties and adjusting any inequities found.

(B) Providing opportunity to perform overtime work on a basis that does not discriminate against qualified minority groups or female employees.

(b) *EEO statement.* Each licensee having 16 or more full-time employees shall file with the FCC, no later than May 31st following the grant of that licensee's first Public Mobile Services authorization, a statement describing fully its current equal employment opportunity program, indicating specific practices to be followed in order to assure equal employment opportunity on the basis of sex, race, color, religion or national origin in such aspects of employment practices as regards recruitment, selection, training, placement, promotion, pay, working conditions, demotion, layoff and termination. Any licensee having 16 or more full-time employees that changes its existing equal employment opportunity pro-

gram shall file with the FCC, no later than May 31st thereafter, a revised statement reflecting the change(s).

NOTE to paragraph (b) of §22.321: Licensees having 16 or more full-time employees that were granted their first Public Mobile Services authorization prior to January 1, 1995, and do not have a current EEO statement on file with the FCC, must file such statement, required by paragraph (b) of this section, no later than May 31, 1995.

(c) *Report of complaints filed against licensees.* Each licensee, regardless of how many employees it has, shall submit an annual report to the FCC no later than May 31st of each year indicating whether any complaints regarding violations by the licensee or equal employment provisions of Federal, State, Territorial, or local law have been filed before anybody having competent jurisdiction.

(1) The report should state the parties involved, the date filing, the courts or agencies before which the matters have been heard, the appropriate file number (if any), and the respective disposition or current status of any such complaints.

(2) Any licensee who has filed such information with the EEOC may file a notification of such filing with the FCC in lieu of a report.

(d) *Complaints of violations of Equal Employment Programs.* Complaints alleging employment discrimination against a common carrier licensee are considered by the FCC in the following manner:

(1) If a complaint raising an issue of discrimination is received against a licensee who is within the jurisdiction of the EEOC, it is submitted to that agency. The FCC maintains a liaison with that agency that keeps the FCC informed of the disposition of complaints filed against common carrier licensees.

(2) Complaints alleging employment discrimination against a common carrier licensee who does not fall under the jurisdiction of the EEOC but is covered by appropriate enforceable State law, to which penalties apply, may be submitted by the FCC to the respective State agency.

(3) Complaints alleging employment discrimination against a common carrier licensee who does not fall under

the jurisdiction of the EEOC or an appropriate State law, are accorded appropriate treatment by the FCC.

(4) The FCC will consult with the EEOC on all matters relating to the evaluation and determination of compliance by the common carrier licensees with the principles of equal employment as set forth herein.

(5) Complaints indicating a general pattern of disregard of equal employment practices which are received against a licensee that is required to file an employment report to the FCC under § 1.815(a) of this chapter are investigated by the FCC.

(e) *FCC records.* A copy of every annual employment report, equal employment opportunity program statement, reports on complaints regarding violation of equal employment provisions of Federal, State, Territorial, or local law, and copies of all exhibits, letters, and other documents filed as part thereof, all amendments thereto, all correspondence between the licensee and the FCC pertaining to the reports after they have been filed and all documents incorporated therein by reference, are open for public inspection at the offices of the FCC.

(f) *Licensee records.* Each licensee required to file annual employment reports (pursuant to § 1.815(a) of this chapter), equal employment opportunity program statements, and annual reports on complaints regarding violations of equal employment provisions of Federal, State, Territorial, or local law shall maintain for public inspection a file containing a copy of each such report and copies of all exhibits, letters, and other documents filed as part thereto, all correspondence between the licensee and the FCC pertaining to the reports after they have been filed and all documents incorporated therein by reference. The documents must be retained for a period of 2 years.

**§ 22.323 Incidental communication services.**

Carriers authorized to operate stations in the Public Mobile radio services may use these stations to provide other communications services incidental to the primary public mobile

service for which the authorizations were issued, provided that:

(a) The costs and charges of subscribers who do not wish to use incidental services are not increased as a result of provision of incidental services to other subscribers;

(b) The quality of the primary public mobile service does not materially deteriorate as a result of provision of incidental services, and neither growth nor availability of the primary public mobile service is significantly diminished as a result of provision of incidental services;

(c) The provision of the incidental services is not inconsistent with the Communications Act of 1934, as amended, or with FCC rules and policies; and

(d) The licensee notifies the FCC by letter before providing the incidental services. This notification must include a complete description of the incidental services.

**§ 22.325 Control points.**

Each station in the Public Mobile Services must have at least one control point and a person on duty who is responsible for station operation. This section does not require that the person on duty be at the control point or continuously monitor all transmissions of the station. However, the control point must have facilities that enable the person on duty to turn off the transmitters in the event of a malfunction.

TECHNICAL REQUIREMENTS

**§ 22.351 Channel assignment policy.**

The channels allocated for use in the Public Mobile Services are listed in the applicable subparts of this part. Channels and channel blocks are assigned in such a manner as to facilitate the rendition of service on an interference-free basis in each service area. Except as otherwise provided in this part, each channel or channel block is assigned exclusively to one common carrier in each service area. All applicants for, and licensees of, stations in the Public Mobile Services shall cooperate in the selection and use of channels in order to minimize interference and obtain the most efficient use of the allocated spectrum.

**§ 22.352 Protection from interference.**

Public Mobile Services stations operating in full accordance with applicable FCC rules and the terms and conditions of their authorizations are normally considered to be non-interfering. If the FCC determines, however, that interference which significantly interrupts or degrades a radio service is being caused, it may, after notice and an opportunity for a hearing, require modifications to any Public Mobile station as necessary to eliminate such interference.

(a) *Failure to operate as authorized.* Any licensee causing interference to the service of other stations by failing to operate its station in full accordance with its authorization and applicable FCC rules shall discontinue all transmissions, except those necessary for the immediate safety of life or property, until it can bring its station into full compliance with the authorization and rules.

(b) *Intermodulation interference.* Licensees should attempt to resolve such interference by technical means.

(c) *Situations in which no protection is afforded.* Except as provided elsewhere in this part, no protection from interference is afforded in the following situations:

(1) *Interference to base receivers from base or fixed transmitters.* Licensees should attempt to resolve such interference by technical means or operating arrangements.

(2) *Interference to mobile receivers from mobile transmitters.* No protection is provided against mobile-to-mobile interference.

(3) *Interference to base receivers from mobile transmitters.* No protection is provided against mobile-to-base interference.

(4) *Interference to fixed stations.* Licensees should attempt to resolve such interference by technical means or operating arrangements.

(5) *Anomalous or infrequent propagation modes.* No protection is provided against interference caused by tropospheric and ionospheric propagation of signals.

(6) *Facilities for which the FCC not notified.* No protection is provided against interference to the service of any additional or modified transmitter operat-

ing pursuant to § 22.163 or § 22.165, unless and until the licensee notifies the FCC (FCC Form 489) of the additional or modified transmitter.

(7) *In-building radiation systems.* No protection is provided against interference to the service of in-building radiation systems (see § 22.383).

**§ 22.353 Blanketing interference.**

Licensees of Public Mobile Services stations are responsible for resolving cases of blanketing interference in accordance with the provisions of this section.

(a) Except as provided in paragraph (c) of this section, licensees must resolve any cases of blanketing interference in their area of responsibility caused by operation of their transmitter(s) during a one-year period following commencement of service from new or modified transmitter(s). Interference must be resolved promptly at no cost to the complainant.

(b) The area of responsibility is that area in the immediate vicinity of the transmitting antenna of stations where the field strength of the electromagnetic radiation from such stations equals or exceeds 115 dB $\mu$ V/m. To determine the radial distance to the boundary of this area, the following formula must be used:

$$d = 0.394 \times \sqrt{p}$$

where d is the radial distance to the boundary, in kilometers

p is the radial effective radiated power, in kilowatts

The maximum effective radiated power in the pertinent direction, without consideration of the antenna's vertical radiation pattern or height, must be used in the formula.

(c) Licensees are not required to resolve blanketing interference to mobile receivers or non-RF devices or blanketing interference occurring as a result of malfunctioning or mistuned receivers, improperly installed consumer antenna systems, or the use of high gain antennas or antenna booster amplifiers by consumers.

(d) Licensees that install transmitting antennas at a location where there are already one or more transmitting antennas are responsible for resolving

any new cases of blanketing interference in accordance with this section.

(e) Two or more licensees that concurrently install transmitting antennas at the same location are jointly responsible for resolving blanketing interference cases, unless the FCC can readily determine which station is causing the interference, in which case the licensee of that station is held fully responsible.

(f) After the one year period of responsibility to resolve blanketing interference, licensees must provide upon request technical information to complainants on remedies for blanketing interference.

#### § 22.355 Frequency tolerance.

Except as otherwise provided in this part, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C-1 of § 22.357.

#### § 22.357 Emission types.

Any authorized station in the Public Mobile Services may transmit any emission type provided that the resulting emission complies with the appropriate emission mask. See §§ 22.359 and 22.917.

[59 FR 59956, Nov. 21, 1994]

#### § 22.359 Emission masks.

Unless otherwise indicated in the rules governing a specific radio service, all transmitters intended for use in the Public Mobile Services must be designed to comply with the emission masks outlined in this section. If an emission outside of the authorized bandwidth causes harmful interference, the FCC may, at its discretion, require greater attenuation than specified in this section.

(a) *Analog modulation.* For transmitters other than those employing digital modulation techniques, the mean or peak envelope power of adjacent channel emissions must be attenuated below the output mean or peak envelope power of the total emission (P, in Watts) in accordance with the following schedule:

(1) On any frequency removed from the center frequency of the assigned channel by more than 50 percent up to

and including 100 percent of the authorized bandwidth:

at least 25 dB:

(2) On any frequency removed from the center frequency of the assigned channel by more than 100 percent up to and including 250 percent of the authorized bandwidth:

at least 35 dB:

(3) On any frequency removed from the center frequency of the assigned channel by more than 250 percent of the authorized bandwidth:

at least  $43 + 10 \log P$  dB, or 80 dB, whichever is the lesser attenuation.

(b) *Digital modulation.* For transmitters not equipped with an audio low pass filter and for transmitters employing digital modulation techniques, the mean or peak envelope power of sideband emissions must be attenuated below the mean or peak envelope power of the total emission (P, in Watts) in accordance with the following schedule:

(1) For transmitters that operate in the frequency ranges 35 to 44 MHz, 72 to 73 MHz, 75.4 to 76.0 MHz and 152 to 159 MHz,

(i) On any frequency removed from the center frequency of the assigned channel by a displacement frequency  $f_d$  (in kHz) of more than 5 kHz but not more than 10 kHz:

at least  $83 \log (f_d+5)$  dB;

(ii) On any frequency removed from the center frequency of the assigned channel by a displacement frequency  $f_d$  (in kHz) of more than 10 kHz but not more than 250 percent of the authorized bandwidth:

at least  $29 \log f_d+11$  dB or 50 dB, whichever is the lesser attenuation;

(iii) On any frequency removed from the center frequency of the assigned channel by more than 250 percent of the authorized bandwidth:

at least  $43 + 10 \log P$  dB, or 80 dB, whichever is the lesser attenuation.

(2) For transmitters that operate in the frequency ranges 450 to 512 MHz and 929 to 932 MHz,

(i) On any frequency removed from the center frequency of the assigned channel by a displacement frequency  $f_d$  (in kHz) of more than 5 kHz but not more than 10 kHz:

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at least  $83 \log (f_d+5)$  dB;

(ii) On any frequency removed from the center frequency of the assigned channel by a displacement frequency  $f_d$  (in kHz) of more than 10 kHz but not more than 250 percent of the authorized bandwidth:

at least  $116 \log (f_d+6.1)$  dB, or  $50 + 10 \log P$  dB, or 70 dB, whichever is the lesser attenuation;

(iii) On any frequency removed from the center frequency of the assigned channel by more than 250 percent of the authorized bandwidth:

at least  $43 + 10 \log P$  dB, or 80 dB, whichever is the lesser attenuation.

(c) *Measurement procedure.* Either peak or average power may be used, provided that the same technique is used for both the adjacent channel or sideband emissions and the total emission. The resolution bandwidth of the measuring instrument must be set to 300 Hz for measurements on any frequency removed from the center frequency of the assigned channel by no more than 250 percent of the authorized bandwidth and 30 kHz for measurements on any frequency removed from the center frequency of the assigned channel by more than 250 percent of the authorized bandwidth.

§ 22.361 Standby facilities.

Licensees of stations in the Public Mobile Services may install standby transmitters for the purpose of continuing service in the event of failure or during required maintenance of regular transmitters without obtaining separate authorization, provided that operation of the standby transmitters would not increase the service areas or interference potential of the stations, and that such standby transmitters use the same antenna as the regular transmitters they temporarily replace.

TABLE C-2.—TECHNICAL REQUIREMENTS FOR DIRECTIONAL ANTENNAS

Frequency range	Maximum beamwidth	Suppression
35 to 512 MHz	80°	10 dB
512 to 1500 MHz	20°	13 dB
1500 to 2500 MHz	12°	13 dB

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[59 FR 59507, Nov. 17, 1994; 60 FR 9889, Feb. 22, 1995]

§ 22.363 Directional antennas.

Fixed transmitters for point-to-point operation must use a directional transmitting antenna with the major lobe of radiation in the horizontal plane directed toward the receiving antenna or passive reflector of the station for which the transmissions are intended. Directional antennas used in the Public Mobile Services must meet the technical requirements given in Table C-2 to § 22.361.

(a) Maximum beamwidth is for the major lobe at the half power points.

(b) Suppression is the minimum attenuation for any secondary lobe referenced to the main lobe.

(c) An omnidirectional antenna may be used for fixed transmitters where there are two or more receive locations at different azimuths.

§ 22.365 Antenna structures; air navigation safety.

Licensees that own their antenna structures must not allow these antenna structures to become a hazard to air navigation. In general, antenna structure owners are responsible for registering antenna structures with the FCC if required by part 17 of this chapter, and for installing and maintaining any required marking and lighting. However, in the event of default of this responsibility by an antenna structure owner, each FCC permittee or licensee authorized to use an affected antenna structure will be held responsible by the FCC for ensuring that the antenna structure continues to meet the requirements of part 17 of this chapter. See § 17.6 of this chapter.

(a) *Marking and lighting.* Antenna structures must be marked, lighted and maintained in accordance with Part 17 of this chapter and all applicable rules and requirements of the Federal Aviation Administration.

(b) *Maintenance contracts.* Antenna structure owners (or licensees and permittees, in the event of default by an antenna structure owner) may enter into contracts with other entities to monitor and carry out necessary maintenance of antenna structures. Antenna structure owners (or licensees

and permittees, in the event of default by an antenna structure owner) that make such contractual arrangements continue to be responsible for the maintenance of antenna structures in regard to air navigation safety.

[61 FR 4365, Feb. 6, 1996]

**§ 22.367 Wave polarization.**

Public mobile station antennas must be of the correct type and properly installed such that the electromagnetic emissions have the polarization required by this section.

(a) *Vertical.* Waves radiated by the following must be vertically polarized:

(1) Base, mobile, dispatch, and auxiliary test transmitters in the Paging and Radiotelephone Service;

(2) Transmitters in the Offshore Radiotelephone Service;

(3) Transmitters on channels in the 72-76 MHz frequency range;

(4) Base, mobile and auxiliary test transmitters in the Cellular Radiotelephone Service;

(5) Control and repeater transmitters on channels in the 900-960 MHz frequency range;

(6) Rural subscriber stations communicating with base transmitters in the Paging and Radiotelephone Service pursuant to § 22.563.

(7) Ground and airborne mobile transmitters in the Air-ground Radiotelephone Service.

(b) *Horizontal.* Waves radiated by transmitters in the Public Mobile Services, other than transmitters required by paragraph (a) of this section to radiate a vertically polarized wave must be horizontally polarized, except as otherwise provided in paragraphs (c) and (d) of this section.

(c) *Circular.* If communications efficiency would be improved and/or interference reduced, the FCC may authorize transmitters other than those listed in paragraphs (a)(1) through (a)(7) of this section to radiate a circularly polarized wave.

(d) *Any polarization.* Public Land Mobile stations transmitting on channels higher than 960 MHz are not limited as to wave polarization.

**§ 22.369 Quiet zones.**

Quiet zones are those areas where it is necessary to restrict radiation so as

to minimize possible impact on the operations of radio astronomy or other facilities that are highly sensitive to interference. The areas involved and procedures required are as follows:

(a) *NRAO, NRRO.* The requirements of this paragraph are intended to minimize possible interference at the National Radio Astronomy Observatory site located at Green Bank, Pocahontas County, West Virginia, and at the Naval Radio Research Observatory site at Sugar Grove, Pendleton County, West Virginia.

(1) Carriers planning to construct and operate a new or modified Public Mobile Services station at a permanent fixed location within the area bounded by N.39°15' on the north, W.78°30' on the east, N.37°30' on the south, and W.80°30' on the west must notify the Director, National Radio Astronomy Observatory, Post Office Box No. 2, Green Bank, West Virginia 24944, in writing, of the technical details of the proposed operation. The notification must include the geographical coordinates of the antenna location, the antenna height, antenna directivity (if any), the channel, the emission type and power.

(2) When an application for authority to operate a station is filed with the FCC, the notification required in paragraph (a)(1) of this section should be sent at the same time. The application must state the date that notification in accordance with paragraph (a)(1) of this section was made. After receipt of such applications, the FCC will allow a period of 20 days for comments or objections in response to the notifications indicated.

(3) If an objection is received during the 20-day period from the National Radio Astronomy Observatory for itself or on behalf of the Naval Radio Research Observatory, the FCC will, after consideration of the record, take whatever action is deemed appropriate.

(b) *Table Mountain.* The requirements of this paragraph are intended to minimize possible interference at the Table Mountain Radio Receiving Zone of the Research Laboratories of the Department of Commerce located in Boulder County, Colorado.

(1) Carriers planning to construct and operate a new or modified Public Mobile Services station at a permanent

fixed location in the vicinity of Boulder County, Colorado are advised to give consideration, prior to filing applications, to the need to protect the Table Mountain Radio Receiving Zone from interference. To prevent degradation of the present ambient radio signal level at the site, the Department of Commerce seeks to ensure that the field strengths of any radiated signals

(excluding reflected signals) received on this 1800 acre site (in the vicinity of coordinates 40°07'50" North Latitude, 105°14'40" West Longitude) resulting from new assignments (other than mobile stations) or from the modification or relocation of existing facilities do not exceed the values given in Table C-3 of this section.

TABLE C-3.—FIELD STRENGTH LIMITS FOR TABLE MOUNTAIN

Frequency range	Field strength	Power flux density
1.6 to 470 MHz .....	10 mV/m .....	–65.8 dBW/m <sup>2</sup>
470 to 890 MHz .....	30 mV/m .....	–56.2 dBW/m <sup>2</sup>
890 to 3000 MHz .....	1 mV/m .....	–85.8 dBW/m <sup>2</sup>

**Note:** Equivalent values of power flux density are calculated assuming free space characteristic impedance of 376.7 Ω (120π Ω).

(2) Advance consultation is recommended, particularly for applicants that have no reliable data to indicate whether the field strength or power flux density figures in the above table would be exceeded by their proposed radio facilities. In general, coordination is recommended for:

- (i) Stations located within 2.4 kilometers (1.5 miles);
- (ii) Stations located within 4.8 kilometers (3 miles) transmitting with 50 watts or more effective radiated power (ERP) in the primary plane of polarization in the azimuthal direction of the Table Mountain Radio Receiving Zone;
- (iii) Stations located with 16 kilometers (10 miles) transmitting with 1 kW or more ERP in the primary plane of polarization in the azimuthal direction of Table Mountain Radio Receiving Zone;
- (iv) Stations located within 80 kilometers (50 miles) transmitting with 25 kW or more ERP in the primary plane of polarization in the azimuthal direction of Table Mountain Receiving Zone.

(3) Applicants concerned are urged to communicate with the Radio Frequency Management Coordinator, Department of Commerce, Research Support Services NOAAR/E5X2, Boulder Laboratories, Boulder, CO 80303; telephone (303) 497-6548, in advance of filing their applications with the FCC.

(4) The FCC will not screen applications to determine whether advance consultation has taken place. However,

such consultation may avoid the filing of objections from the Department of Commerce or institution of proceedings to modify the authorizations of stations that radiate signals with a field strength or power flux density at the site in excess of those specified herein.

(c) *Federal Communications Commission protected field offices.* The requirements of this paragraph are intended to minimize possible interference to FCC monitoring activities.

(1) Carriers planning to construct and operate a new or modified Public Mobile Services station at a permanent fixed location in the vicinity of an FCC protected field office are advised to give consideration, prior to filing applications, to the need to avoid interfering with the monitoring activities of that office. FCC protected field offices are listed in §0.121 of this chapter.

(2) Applications for stations (except mobile stations) that could produce on any channel a direct wave fundamental field strength of greater than 10 mV/m (–65.8 dBW/m<sup>2</sup> power flux density assuming a free space characteristic impedance of 120π Ω) in the authorized bandwidth at the protected field office may be examined to determine the potential for interference with monitoring activities. After consideration of the effects of the predicted field strength of the proposed station, including the cumulative effects of the signal from the proposed station with



other ambient radio field strength levels at the protected field office, the FCC may add a condition restricting radiation toward the protected field office to the station authorization.

(3) In the event that the calculated field strength exceeds 10 mV/m at the protected field office site, or if there is any question whether field strength levels might exceed that level, advance consultation with the FCC to discuss possible measures to avoid interference to monitoring activities should be considered. Prospective applicants may communicate with: Chief, Compliance and Information Bureau, Federal Communications Commission, Washington, DC 20554.

(4) Advance consultation is recommended for applicants that have no reliable data to indicate whether the field strength or power flux density figure indicated would be exceeded by their proposed radio facilities. In general, coordination is recommended for:

- (i) Stations located within 2.4 kilometers (1.5 miles);
- (ii) Stations located within 4.8 kilometers (3 miles) with 50 watts or more average effective radiated power (ERP) in the primary plane of polarization in the azimuthal direction of the protected field offices.
- (iii) Stations located within 16 kilometers (10 miles) with 1 kW or more average ERP in the primary plane of polarization in the azimuthal direction of the protected field office;
- (iv) Stations located within 80 kilometers (50 miles) with 25 kW or more average ERP in the primary plane of polarization in the azimuthal direction of the protected field office;

(5) Advance coordination for stations transmitting on channels above 1000 MHz is recommended only if the proposed station is in the vicinity of a protected field office designated as a satellite monitoring facility in §0.121 of this chapter.

(6) The FCC will not screen applications to determine whether advance consultation has taken place. However, such consultation may serve to avoid the need for later modification of the authorizations of stations that inter-

fere with monitoring activities at protected field offices.

[59 FR 59507, Nov. 17, 1994, as amended at 61 FR 8477, Mar. 5, 1996]

#### **§22.371 Disturbance of AM broadcast station antenna patterns.**

Public Mobile Service licensees that construct or modify towers in the immediate vicinity of AM broadcast stations are responsible for measures necessary to correct disturbance of the AM station antenna pattern which causes operation outside of the radiation parameters specified by the FCC for the AM station, if the disturbance occurred as a result of such construction or modification.

(a) *Non-directional AM stations.* If tower construction or modification is planned within 1 kilometer (0.6 mile) of a non-directional AM broadcast station tower, the Public Mobile Service licensee must notify the licensee of the AM broadcast station in advance of the planned construction or modification. Measurements must be made to determine whether the construction or modification affected the AM station antenna pattern. The Public Mobile Service licensee is responsible for the installation and continued maintenance of any detuning apparatus necessary to restore proper non-directional performance of the AM station tower.

(b) *Directional AM stations.* If tower construction or modification is planned within 3 kilometers (1.9 miles) of a directional AM broadcast station array, the Public Mobile Service licensee must notify the licensee of the AM broadcast station in advance of the planned construction or modification. Measurements must be made to determine whether the construction or modification affected the AM station antenna pattern. The Public Mobile Service licensee is responsible for the installation and continued maintenance of any detuning apparatus necessary to restore proper performance of the AM station array.

#### **§22.373 Access to transmitters.**

Unless otherwise provided in this part, the design and installation of transmitters in the Public Mobile

Services must meet the requirements of this section.

(a) Transmitters and control points, other than those used with in-building radiation systems, must be installed such that they are readily accessible only to persons authorized by the licensee to operate or service them.

(b) Transmitters must be designed and installed such that any adjustments or controls that could cause the transmitter to deviate from its authorized operating parameters are readily accessible only to persons authorized by the licensee to make such adjustments.

(c) Transmitters (other than hand-carried or pack-carried mobile transmitters) and control points must be equipped with a means of indicating when the control circuitry has been put in a condition that should cause the transmitter to radiate.

(d) Transmitters must be designed such that they can be turned off independently of any remote control circuits.

(e) Transmitters used with in-building radiation systems must be installed such that, to the extent possible, they are readily accessible only to persons authorized by the licensee to access them.

(f) Transmitters used with in-building radiation systems must be designed such that, in the event an unauthorized person does gain access, that person can not cause the transmitter to deviate from its authorized operating parameters in such a way as to cause interference to other stations.

**§22.377 Type-acceptance of transmitters.**

Except as provided in paragraph (b) of this section, transmitters used in the Public Mobile Services, including those used with signal boosters, in-building radiation systems and cellular repeaters, must be type-accepted for use in the radio services regulated under this part. Transmitters must be type accepted when the station is ready for service, not necessarily at the time of filing an application.

(a) The FCC may list as type-accepted only transmitters that are capable of meeting all technical requirements of the rules governing the service in

which they will operate. The procedure for obtaining type-acceptance is set forth in part 2 of this chapter.

(b) Transmitters operating under a developmental authorization (see subpart D of this part) do not have to be type-accepted.

(c) Type-accepted transmitters are listed in the FCC's "Radio Equipment List," which is available for public inspection at the FCC in Washington, DC, and its field offices.

(d) In addition to the technical standards contained in this part, transmitters intended for operation in the Cellular Radiotelephone Service must be designed to comply with the technical requirements contained in the cellular system compatibility specification (see §22.933) and the electronic serial number rule (see §22.919).

[59 FR 59507, Nov. 17, 1994, as amended at 61 FR 31051, June 19, 1996]

**§22.379 Replacement of equipment.**

Licensees may replace any equipment in Public Mobile Service stations without applying for authorization or notifying the FCC, provided that:

(a) If a transmitter is replaced, the replacement transmitter must be type-accepted for use in the Public Mobile Services;

(b) The antenna structure must not become a hazard to air navigation and its height must not be increased;

(c) The interference potential of the station must not be increased;

(d) The Effective radiated power, emission type, antenna radiation pattern and center of radiation height above average terrain are not changed.

**§22.381 Auxiliary test transmitters.**

Auxiliary test transmitters may be used only for testing the performance of fixed receiving equipment located remotely from the control point. Auxiliary test transmitters may transmit only on channels designated for mobile transmitters.

**§22.383 In-building radiation systems.**

Licensees may install and operate in-building radiation systems without applying for authorization or notifying the FCC, provided that the locations of the in-building radiation systems are within the protected service area of the

licensee's authorized transmitter(s) on the same channel or channel block.

### Subpart D—Developmental Authorizations

#### §22.401 Description and purposes of developmental authorizations.

Communications common carriers may apply for, and the FCC may grant, authority to construct and operate one or more transmitters subject to the rules in this subpart and other limitations, waivers and/or conditions that may be prescribed. Authorizations granted on this basis are developmental authorizations. In general, the FCC grants developmental authorizations in situations and circumstances where it cannot reasonably be determined in advance whether a particular transmitter can be operated or a particular service can be provided without causing interference to the service of existing stations. For example, the FCC may grant developmental authorizations for:

- (a) Field strength surveys to evaluate the technical suitability of antenna locations for stations in the Public Mobile Services;
- (b) Experimentation leading to the potential development of a new Public Mobile Service or technology; or,
- (c) Stations transmitting on channels in certain frequency ranges, to provide a trial period during which it can be individually determined whether such stations can operate without causing excessive interference to existing services.

#### §22.403 General limitations.

The provisions and requirements of this section are applicable to all developmental authorizations.

- (a) Developmental authorizations are granted subject to the condition that they may be cancelled by the FCC at any time, upon notice to the licensee, and without the opportunity for a hearing.
- (b) Except as otherwise indicated in this subpart, developmental authorizations normally terminate one year from the date of grant. The FCC may, however, specify a different term.
- (c) Stations operating under developmental authorizations must not

interfere with the services of regularly authorized stations.

(d) A grant of a developmental authorization does not provide any assurance that the FCC will grant an application for regular authorization to operate the same transmitter(s), even if operation during the developmental period has not caused interference and/or the developmental program is successful.

#### §22.409 Developmental authorization for a new Public Mobile Service or technology.

The FCC may grant applications for developmental authority to construct and operate transmitters for the purpose of developing a new Public Mobile Service or a new technology not regularly authorized under this part, subject to the requirements of this section. Such applications may request the use of any portion of the spectrum allocated for Public Mobile Services in the Table of Frequency Allocations contained in part 2 of this chapter, regardless of whether that spectrum is regularly available under this part. Requests to use any portion of the spectrum for a service or purpose other than that indicated in the Table of Frequency Allocations in part 2 of this chapter may be made only in accordance with the provisions of part 5 of this chapter.

(a) *Preliminary determination.* The FCC will make a preliminary determination with respect to the factors in paragraphs (a)(1) through (a)(3) of this section before acting on an application for developmental authority pursuant to this section. These factors are:

- (1) That the public interest, convenience or necessity warrants consideration of the establishment of the proposed service or technology;
- (2) That the proposal appears to have potential value to the public that could warrant the establishment of the new service or technology;
- (3) That some operational data should be developed for consideration in any rule making proceeding which may be initiated to establish such service or technology.

(b) *Petition required.* Applications for developmental authorizations pursuant to this section must be accompanied by

a petition for rule making requesting the FCC to amend its rules as may be necessary to provide for the establishment of the proposed service or technology.

(c) *Application requirements.* Authorizations for developmental authority pursuant to this section will be issued only upon a showing that the applicant has a definite program of research and development which has reasonable promise of substantial contribution to the services authorized by this part. The application must contain an exhibit demonstrating the applicant's technical qualifications to conduct the research and development program, including a description of the nature and extent of engineering facilities that the applicant has available for such purpose. Additionally, the FCC may, in its discretion, require a showing of financial qualification.

(d) *Communication service for hire prohibited.* Stations authorized under developmental authorizations granted pursuant to this section must not be used to provide communication service for hire, unless otherwise specifically authorized by the FCC.

(e) *Adherence to program.* Carriers granted developmental authorization pursuant to this section must substantially adhere to the program of research and development described in their application for developmental authorization, unless the FCC directs otherwise.

(f) *Report requirements.* Upon completion of the program of research and development, or upon the expiration of the developmental authorization under which such program was permitted, or at such times during the term of the station authorization as the FCC may deem necessary to evaluate the progress of the developmental program, the licensee shall submit a comprehensive report, containing:

(1) A description of the progress of the program and a detailed analysis of any result obtained;

(2) Copies of any publications produced by the program;

(3) A listing of any patents applied for, including copies of any patents issued;

(4) Copies of any marketing surveys or other measures of potential public demand for the new service;

(5) A description of the carrier's experiences with operational aspects of the program including—

(i) The duration of transmissions on each channel or frequency range and the technical parameters of such transmissions; and,

(ii) Any interference complaints received as a result of operation and how these complaints were investigated and resolved.

(g) *Confidentiality.* Normally, applications and developmental reports are a part of the FCC's public records. However, an applicant or licensee may request that the FCC withhold from public records specific exhibits, reports and other material associated with a developmental authorization.

(h) *Renewal.* Expiring developmental authorizations issued pursuant to this section may be renewed if the carrier—

(1) Shows that further progress in the program of research and development requires additional time to operate under developmental authorization;

(2) Complied with the reporting requirements of paragraph (e) of this section; and,

(3) Immediately resolved to the FCC's satisfaction all complaints of interference caused by the station operating under developmental authority.

#### **§ 22.411 Developmental authorization of 43 MHz paging transmitters.**

Because of the potential for interference to the intermediate frequency stages of receivers in broadcast television sets and video recorders, 43 MHz paging channels are assigned only under developmental authorizations subject to the requirements of this section, except as provided in paragraph (d) of this section.

(a) *Carrier responsibility.* Carriers so authorized shall operate the 43 MHz paging service under developmental authority for a period of two years. During the two year developmental period, carriers must resolve any broadcast television receiver intermediate frequency interference problems that may occur as a result of operation of the 43 MHz paging transmitter(s). Carriers

shall inform subscribers receiving service on the channels assigned under developmental authority during the developmental period that this service could be terminated by the FCC on short notice if such action were to become necessary to eliminate interference. Carriers shall notify the appropriate FCC Field Office, in advance, of the date on which service to subscribers is to begin.

(b) *Periodic surveys.* To determine the extent of any interference to broadcast television receivers resulting from operation of 43 MHz paging stations authorized pursuant to this section, carriers shall conduct semi-annual surveys during the first two years of operation. The first such survey is to begin on the date when service to subscribers commences. For each survey, the carrier shall contact at least 25 television viewers to determine whether they have experienced interference.

(1) The carrier shall contact viewers located throughout the geographic area encompassed by a 3 kilometer (2 mile) radius of the 43 MHz paging transmitter antenna site. The carrier must not attempt to obtain a misleading survey by contacting only viewers less likely to be experiencing interference. For example, the carrier must not contact only the viewers located most distant from the paging transmitter antenna site. Instead, the carrier shall contact viewers located near the paging transmitter antenna site.

(2) The carrier shall not, in subsequent surveys, contact viewers who were contacted in a previous survey; provided that, in the event that all of the viewers within 3 kilometers (2 miles) have been contacted, viewers located near the paging transmitter antenna site shall be contacted again.

(c) *Periodic reports.* Following each survey, the carrier shall submit to the FCC a written report disclosing and evaluating the extent of any interference. These reports must include:

- (1) The number of the report (1 to 4);
- (2) The station call sign;
- (3) The file number of the application that resulted in the developmental authorization;
- (4) An exact description of the transmitter location(s);

(5) The date(s) and time of day when the survey was conducted;

(6) The survey method used (e.g. telephone, on-site, etc.);

(7) The names, addresses and telephone numbers of the viewers contacted;

(8) If interference resulted from operation of the 43 MHz paging station, a summary of how the interference problem was resolved;

(9) The names and telephone numbers of any technical personnel consulted and/or employed to resolve interference problems.

(d) *Exceptions.* The FCC may grant a regular authorization in the Paging and Radiotelephone Service for a 43 MHz paging station in the following circumstances:

(1) After the two-year developmental period, provided that broadcast TV interference complaints have been resolved by the carrier in a satisfactory manner. Licensees that hold a developmental authorization for a 43 MHz paging station and wish to request a regular authorization must file an application (FCC Form 600) prior to the expiration of the developmental period.

(2) In the case of the assignment of or a transfer of control of a regular authorization of a 43 MHz paging station in the Paging and Radiotelephone Service, provided that the station has been in continuous operation providing service with no substantial interruptions.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

#### **§22.413 Developmental authorization of 72-76 MHz fixed transmitters.**

Because of the potential for interference with the reception by broadcast television sets and video recorders of full service TV stations transmitting on TV Channels 4 and 5, 72-76 MHz channels are assigned for use within 16 kilometers (10 miles) of the antenna of any full service TV station transmitting on TV Channel 4 or 5 only under developmental authorizations subject to the requirements of this section, except as provided in paragraph (b) of this section.

(a) *Carrier responsibility.* Carriers so authorized shall operate the 72-76 MHz

fixed station under developmental authority for a period of at least six months. During the developmental period, carriers must resolve any broadcast television receiver interference problems that may occur as a result of operation of the 72–76 MHz transmitter(s).

(b) *Exceptions.* The FCC may grant a regular authorization in the Paging and Radiotelephone Service for a 72–76 MHz fixed station under the following circumstances:

(1) After six months of operation under developmental authorization, and provided that broadcast TV interference complaints have been resolved by the carrier in a satisfactory manner, the FCC may grant a regular authorization. Licensees that hold a developmental authorization for a 72–76 MHz fixed station and wish to request a regular authorization must file an application (FCC Form 600) prior to the expiration of the developmental authorization.

(2) In the case of the assignment of or a transfer of control of a regular authorization of a 72–76 MHz fixed station in the Paging and Radiotelephone Service, the FCC may grant such assignment or consent to such transfer of control provided that the station has been in continuous operation providing service with no substantial interruptions.

(3) If a proposed 72–76 MHz fixed transmitter antenna is to be located within 50 meters (164 feet) of the antenna of the full service TV station transmitting on TV Channel 4 or 5, the FCC may grant a regular authorization instead of a developmental authorization.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

**§ 22.415 Developmental authorization of 928–960 MHz fixed transmitters.**

Channels in the 928–929 MHz and 952–960 MHz ranges may be assigned under developmental authorizations to fixed transmitters in point-to-multipoint systems at locations that are short-spaced (i.e. do not meet the 113 kilometer (70 mile) separation requirement of § 22.625), subject to the requirements of this section.

(a) *Carrier responsibility.* Applications for developmental authorizations pursuant to this section must contain an engineering analysis that shows that no interference will be caused or received. Carriers so authorized shall operate the short-spaced transmitter for a period of one year.

(b) *Exceptions.* The FCC may grant a regular authorization in the Paging and Radiotelephone Service for a short-spaced fixed station under the following circumstances:

(1) After one year of operation under developmental authorization, and provided that no interference has been caused, the FCC may grant a regular authorization. Licensees that hold a developmental authorization and wish to request a regular authorization must file an application (FCC Form 600) prior to the expiration of the developmental authorization.

(2) In the case of the assignment of or a transfer of control of a regular authorization of a short-spaced fixed station in the Paging and Radiotelephone Service, the FCC may grant such assignment or consent to such transfer of control provided that the station has been in continuous operation providing service and no interference has been caused.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

**§ 22.417 Developmental authorization of meteor burst systems.**

Because of the potential for interference to other 42–46 MHz operations, central office and rural subscriber stations in Alaska are authorized to use meteor burst propagation modes to provide rural radiotelephone service only under developmental authorizations subject to the requirements of this section, except as provided in paragraph (b) of this section. See also §§ 22.725(c) and 22.729.

(a) *Carrier responsibility.* Carriers and subscribers so authorized shall operate the station under developmental authority for a period of at least one year.

(b) *Exceptions.* The FCC may grant a regular authorization in the Rural Radiotelephone Service for a central office or rural subscriber to use meteor burst propagation modes to provide

rural radiotelephone service under the following circumstances:

(1) After one year of operation under developmental authorization, and provided that no interference has been caused to other operations, the FCC may grant a regular authorization. Licensees that hold a developmental authorization to use meteor burst propagation modes to provide rural radiotelephone service and wish to request a regular authorization must file an application (FCC Form 600) prior to the expiration of the developmental authorization.

(2) In the case of the assignment of or a transfer of control of a regular authorization of a central office or rural subscriber station authorizing the use of meteor burst propagation modes in the Rural Radiotelephone Service, the FCC may grant such assignment or consent to such transfer of control provided that the station has been in operation providing service with no substantial interruptions.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

### Subpart E—Paging and Radiotelephone Service

#### § 22.501 Scope.

The rules in this subpart govern the licensing and operation of public mobile paging and radiotelephone stations. The licensing and operation of these stations are also subject to rules elsewhere in this part that apply generally to the Public Mobile Services. However, in case of conflict, the rules in this subpart govern.

#### § 22.507 Number of transmitters per station.

This section concerns the number of transmitters licensed under each station authorization in the Paging and Radiotelephone Service. Each station must have at least one transmitter. There is no limit to the number of transmitters that a station may comprise. However, transmitters within a station should be operationally related and/or should serve the same general geographical area. Operationally related transmitters are those that operate together as a system (e.g. trunked sys-

tems, simulcast systems), rather than independently. Furthermore, the FCC may split wide-area systems into two or more stations for administrative convenience. Except for nationwide paging and other operationally related transmitters, transmitters that are widely separated geographically are not licensed under a single authorization. The FCC may consolidate separately authorized stations upon request (FCC Form 600) of the licensee, if appropriate under this section.

NOTE to § 22.507: Notwithstanding the provisions of § 22.507, until further notice there can be no more than 99 transmitters per station.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

#### § 22.509 Procedures for mutually exclusive applications in the Paging and Radiotelephone Service.

Mutually exclusive applications in the Paging and Radiotelephone Service, including those that are mutually exclusive with applications in the Rural Radiotelephone Service, are processed in accordance with § 22.131 and with this section.

(a) Applications in the Paging and Radiotelephone Service may be mutually exclusive with applications in the Rural Radiotelephone Service if they seek authorization to operate facilities on the same channel in the same area, or the technical proposals are otherwise in conflict. See § 22.567.

(b) A modification application in either service filed on the earliest filing date may cause all later-filed mutually exclusive applications of any type in either service to be “cut off” (excluded from a same-day filing group) and dismissed, pursuant to § 22.131(c)(3)(ii) and § 22.131(c)(4).

(c) Competitive bidding will not be used as a selection procedure for any filing group that contains one or more applications for facilities in the Rural Radio Service. If a settlement between the applicants cannot be reached in a reasonable time, the applications may be designated for comparative consideration in a hearing. See § 22.13(c)(4)(ii).

[59 FR 59956, Nov. 21, 1994]

**§22.511 Construction period for the Paging and Radiotelephone Service.**

The construction period for stations in the Paging and Radiotelephone Service is one year.

**§22.515 Permissible communications paths.**

Mobile stations may communicate only with and through base stations. Base stations may communicate only with mobile stations and receivers on land or surface vessels.

**§22.527 Signal boosters.**

Licensees may install and operate signal boosters on channels listed in §22.531 only in accordance with the provisions of §22.165 governing additional transmitters for existing systems. Licensees must not allow any signal booster that they operate to cause interference to the service or operation of any other authorized stations or systems.

[61 FR 31051, June 19, 1996]

**§22.529 Application requirements for the Paging and Radiotelephone Service.**

In addition to information required by subparts B and D of this part, applications for authorization to operate a transmitter in the Paging and Radiotelephone Service must contain the applicable supplementary information described in this section.

(a) *Administrative information.* The following information is required by FCC Form 600, Schedule B.

(1) The number of transmitter sites for which authorization is requested.

(2) The call sign(s) of other facilities in the same area that are ultimately controlled by the real party in interest to the application.

(b) *Technical information.* The following information required by FCC Form 600, Schedule B.

(1) Location description, city, county, state, geographical coordinates correct to ±1 second, the datum used (NAD 27 or NAD 83), site elevation above mean sea level, proximity to adjacent market boundaries and international borders;

(2) Antenna manufacturer, model number and type, antenna height to tip

above ground level, the height of the center of radiation of the antenna above the average terrain, the height of the antenna center of radiation above the average elevation of the terrain along each of the 8 cardinal radials, antenna gain in the maximum lobe, the beamwidth of the maximum lobe of the antenna, a polar plot of the horizontal gain pattern of the antenna, the electric field polarization of the wave emitted by the antenna when installed as proposed;

(3) The center frequency of each channel requested, the maximum effective radiated power, the effective radiated power in each of the cardinal radial directions, any non-standard emission types to be used, including bandwidth and modulation type, the transmitter classification (e.g. base, fixed, mobile), and the locations, if any, of any points of communication.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

ONE-WAY PAGING OPERATION

**§22.531 Channels for one-way paging operation.**

The following channels are allocated for assignment to base transmitters that provide one-way public paging service. Unless otherwise indicated, all channels have a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz.

Low VHF Channels			
35.20	35.46	43.20	43.46
35.22	35.50	43.22	43.50
35.24	35.54	43.24	43.54
35.26	35.56	43.26	43.56
35.30	35.58	43.30	43.58
35.34	35.60	43.34	43.60
35.38	35.62	43.38	43.62
35.42	35.66	43.42	43.66
High VHF Channels			
152.24	152.84	158.10	158.70
UHF Channels			
931.0125	931.2625	931.5125	931.7625
931.0375	931.2875	931.5375	931.7875
931.0625	931.3125	931.5625	931.8125
931.0875	931.3375	931.5875	931.8375
931.1125	931.3625	931.6125	931.8625
931.1375	931.3875	931.6375	931.8875
931.1625	931.4125	931.6625	931.9125
931.1875	931.4375	931.6875	931.9375
931.2125	931.4625	931.7125	931.9625
931.2375	931.4875	931.7375	931.9875



(a) The 43 MHz channels may be assigned under developmental authorizations, pursuant to the requirements of §22.411.

(b) Channels 931.8875, 931.9125, and 931.9375 MHz may be assigned only to transmitters providing nationwide network paging service.

(c) Upon application (FCC Form 600), common carriers may be authorized to provide one-way paging service using the leased subcarrier facilities of broadcast stations licensed under part 73 of this chapter.

(d) Occasionally in case law and other formal and informal documents, the low VHF channels have been referred to as "lowband" channels, and the high VHF channels have been referred to as "guardband" channels.

(e) Pursuant to the U.S.-Canada Interim Coordination Considerations for 929-932 MHz, as amended, only the following UHF channels may be assigned in the continental United States North of Line A or in the State of Alaska East of Line C, within the indicated longitudes:

(1) From longitude W.73° to longitude W.75° and from longitude W.78° to longitude W.81°:

931.0125	931.1125	931.1875	931.2625
931.0375	931.1375	931.2125	931.8625
931.0625	931.1625	931.2375	

(2) From longitude W.81° to longitude W.85°:

931.0125	931.2125	931.3875	931.5875
931.0375	931.2375	931.4125	931.6125
931.0625	931.2625	931.4625	931.6375
931.1125	931.2875	931.4875	931.8625
931.1375	931.3125	931.5125	
931.1625	931.3375	931.5375	
931.1875	931.3625	931.5625	

(3) Longitudes other than specified in paragraphs (e)(1) and (e)(2) of this section:

931.0125	931.1625	931.2875	931.4125
931.0375	931.1875	931.3125	931.4625
931.0625	931.2125	931.3375	931.8625
931.1125	931.2375	931.3625	
931.1375	931.2625	931.3875	

(4) At any longitude, with authorization condition requiring coordinated, shared use and equal access by licensees in both countries:

931.4375	931.8875	931.9125	931.9375
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[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

**§22.535 Effective radiated power limits.**

The effective radiated power (ERP) of transmitters operating on the channels listed in §22.531 must not exceed the limits in this section.

(a) *Maximum ERP.* The ERP must not exceed the applicable limits in this paragraph under any circumstances.

Frequency range (MHz)	Maximum ERP (Watts)
35-36 .....	600
43-44 .....	500
152-159 .....	1400
931-932 .....	3500

(b) *Basic power limit.* Except as provided in paragraph (d) of this section, the ERP of transmitters on the VHF channels must not exceed 500 Watts.

(c) *Height-power limit.* Except as provided in paragraph (d) of this section, the ERP of transmitters on the VHF channels must not exceed the amount that would result in an average distance to the service contour of 32.2 kilometers (20 miles). The average distance to the service contour is calculated by taking the arithmetic mean of the distances determined using the procedures specified in §22.537 for the eight cardinal radial directions, excluding cardinal radial directions for which 90% or more of the distance so calculated is over water.

(d) *Encompassed interfering contour areas.* Transmitters are exempt from the basic power and height-power limits of this section if the area within their interfering contours is totally encompassed by the interfering contours of operating co-channel base transmitters controlled by the same licensee. For the purpose of this paragraph, operating transmitters are authorized transmitters that are providing service to subscribers.

(e) *Adjacent channel protection.* The ERP of transmitters must not exceed 500 Watts if they:

(1) Transmit on a channel in the 152-159 MHz frequency range and are located less than 5 kilometers (3.1 miles) from any station licensed in the Private Radio Services that receives on an adjacent channel; or,

(2) Transmit on channel 158.10 or 158.70 MHz and are located less than 5 kilometers (3.1 miles) from any station licensed in the Public Mobile Services that receives on either of the following adjacent channels: 158.07 MHz or 158.67 MHz.

(f) *Signal boosters.* The effective radiated power of signal boosters must not exceed 5 watts ERP under any normal operating condition.

[59 FR 59507, Nov. 17, 1994, as amended at 61 FR 31051, June 19, 1996]

**§ 22.537 Technical channel assignment criteria.**

The rules in this section establish technical assignment criteria for the channels listed in § 22.531. These criteria permit channel assignments to be made in a manner such that reception by public paging receivers of signals from base transmitters, within the service area of such base transmitters, is protected from interference caused by the operation of independent co-channel base transmitters.

(a) *Contour overlap.* The FCC may grant an application requesting assignment of a channel to a proposed base transmitter only if:

(1) The interfering contour of the proposed transmitter does not overlap the service contour of any protected co-channel transmitter controlled by a carrier other than the applicant, unless that carrier has agreed in writing to accept any interference that may result from operation of the proposed transmitter; and,

(2) The service contour of the proposed transmitter does not overlap the interfering contour of any protected co-channel transmitter controlled by a carrier other than the applicant, unless the applicant agrees to accept any interference that may result from operation of the protected co-channel transmitter; and,

(3) The area and/or population to which service would be provided by the proposed transmitter is substantial, and service gained would exceed that lost as a result of agreements to accept interference.

(b) *Protected transmitter.* For the purposes of this section, protected transmitters are authorized transmitters for which there is a current FCC public

record and transmitters proposed in prior-filed pending applications.

(c) *VHF service contour.* For paging stations transmitting on the VHF channels, the distance from the transmitting antenna to the service contour along each cardinal radial is calculated as follows:

$$d = 1.243 \times h^{0.40} \times p^{0.20}$$

where d is the radial distance in kilometers

h is the radial antenna HAAT in meters

p is the radial ERP in Watts

(1) Whenever the actual HAAT is less than 30 meters (98 feet), 30 must be used as the value for h in the above formula.

(2) The value used for p in the above formula must not be less than 27 dB less than the maximum ERP in any direction or 0.1 Watt, whichever is more.

(3) The distance from the transmitting antenna to the service contour along any radial other than the eight cardinal radials is routinely calculated by linear interpolation of distance as a function of angle. However, in resolving petitions to deny, the FCC may calculate the distance to the service contour using the formula in paragraph (c) of this section with actual HAAT and ERP data for the inter-station radial and additional radials above and below the inter-station radial at 2.5° intervals.

(d) *VHF interfering contour.* For paging stations transmitting on the VHF channels, the distance from the transmitting antenna to the interfering contour along each cardinal radial is calculated as follows:

$$d = 6.509 \times h^{0.28} \times p^{0.17}$$

where d is the radial distance in kilometers

h is the radial antenna HAAT in meters

p is the radial ERP in Watts

(1) Whenever the actual HAAT is less than 30 meters (98 feet), 30 must be used as the value for h in the above formula.

(2) The value used for p in the above formula must not be less than 27 dB less than the maximum ERP in any direction or 0.1 Watt, whichever is more.

(3) The distance from the transmitting antenna to the interfering contour along any radial other than the eight

cardinal radials is routinely calculated by linear interpolation of distance as a function of angle. In resolving petitions to deny, however, the FCC may calculate the distance to the interfering contour using the formula in paragraph (d) of this section with actual HAAT and ERP data for the inter-station radial and additional radials above

and below the inter-station radial at 2.5° intervals.

(e) *931 MHz service contour.* For paging stations transmitting on the 931 MHz channels, the service contour is a circle, centered on the transmitting antenna, with a radius determined from Table E-1 of this section.

TABLE E-1.—931 MHz PAGING SERVICE RADII

Service radius km (miles) Antenna HAAT meters (feet)	Effective radiated power (Watts)					
	0-125	126-250	251-500	501-1000	1001-1860	1861-3500
0-177 ..... (0-581)	32.2 (20)	32.2 (20)	32.2 (20)	32.2 (20)	32.2 (20)	32.2 (20)
178-305 ..... (582-1001)	32.2 (20)	32.2 (20)	32.2 (20)	32.2 (20)	37.0 (23)	41.8 (26)
306-427 ..... (1002-1401)	32.2 (20)	32.2 (20)	37.0 (23)	41.8 (26)	56.3 (35)	56.3 (35)
428-610 ..... (1402-2001)	32.2 (20)	37.0 (23)	41.8 (26)	56.3 (35)	56.3 (35)	56.3 (35)
611-861 ..... (2002-2825)	37.0 (23)	41.8 (26)	41.8 (26)	56.3 (35)	83.7 (52)	83.7 (52)
862-1219 ..... (2826-3999)	41.8 (26)	56.3 (35)	56.3 (35)	83.7 (52)	83.7 (52)	83.7 (52)
1220+ ..... (4000+)	56.3 (35)	56.3 (35)	83.7 (52)	83.7 (52)	83.7 (52)	83.7 (52)

(f) *931 MHz interfering contour.* For paging stations transmitting on the 931 MHz channels, the interfering contour

is a circle, centered on the transmitting antenna, with a radius determined from Table E-2 of this section.

TABLE E-2.—931 MHz PAGING INTERFERING RADII

Interfering radius km (miles) Antenna HAAT meters (feet)	Effective radiated power (Watts)					
	0-125	126-250	251-500	501-1000	1001-1860	1861-3500
0-177 ..... (0-581)	80.5 (50)	80.5 (50)	80.5 (50)	80.5 (50)	80.5 (50)	80.5 (50)
178-305 ..... (582-1001)	80.5 (50)	80.5 (50)	80.5 (50)	80.5 (50)	88.5 (55)	96.6 (60)
306-427 ..... (1002-1401)	80.5 (50)	80.5 (50)	88.5 (55)	96.6 (60)	130.4 (81)	130.4 (81)
428-610 ..... (1402-2001)	80.5 (50)	88.5 (55)	96.6 (60)	130.4 (81)	130.4 (81)	130.4 (81)
611-861 ..... (2002-2825)	88.5 (55)	96.6 (60)	96.6 (60)	130.4 (81)	191.5 (119)	191.5 (119)
862-1219 ..... (2826-3999)	96.6 (60)	130.4 (81)	130.4 (81)	191.5 (119)	191.5 (119)	191.5 (119)
1220+ ..... (4000+)	130.4 (81)	130.4 (81)	191.5 (119)	191.5 (119)	191.5 (119)	191.5 (119)

(g) *In-building radiation systems.* The locations of in-building radiation systems must be within the service contour(s) of the licensee's authorized transmitter(s) on the same channel. In-building radiation systems are not protected facilities, and therefore do not have service or interfering contours.

with §22.165 and notwithstanding paragraphs (e) and (f) of this section, signal boosters operating on the 931 MHz channels with an antenna HAAT not exceeding 30 meters (98 feet) are deemed to have as a service contour a circle with a radius of 1.0 kilometer (0.6 mile) and as an interfering contour a

(h) *Signal boosters on 931 MHz channels.* For the purpose of compliance

circle with a radius of 10 kilometers (6.2 miles).

[59 FR 59507, Nov. 17, 1994, as amended at 61 FR 31051, June 19, 1996]

**§ 22.539 Additional channel policies.**

The rules in this section govern the processing of applications for a paging channel when the applicant has applied for or been granted an authorization for other paging channels in the same geographic area. This section applies to applications proposing to use the channels listed in § 22.531, excluding the nationwide network paging channels and broadcast station subcarriers, or the channels listed in § 22.561, where the application proposes to use those channels to provide paging service only. The general policy of the FCC is to assign one paging channel in an area to a carrier per application cycle. That is, a carrier must apply for one paging channel, receive the authorization, construct the station, provide service to subscribers, and notify the FCC of commencement of service to subscribers (FCC Form 489) before applying for an additional paging channel in that area.

(a) *VHF transmitters in same area.* Any transmitter on any VHF channel listed in § 22.531 is considered to be in the same geographic area as another transmitter on any other VHF channel listed in § 22.531 if:

(1) One transmitter location is within the service area of the other transmitter; or,

(2) the area within the overlap of the service contours of the two transmitters constitutes 50 percent or more of the service area of either of the transmitters.

(b) *931 MHz transmitters in same area.* Any transmitter on any 931 MHz channel is considered to be in the same geographic area as another transmitter on any channel listed in § 22.531 if it is located less than 64.4 kilometers (40 miles) from the transmitter. Likewise, any transmitter on any channel listed in § 22.531 is considered to be in the same geographic area as another transmitter on any 931 MHz channel if it is located less than 64.4 kilometers (40 miles) from that transmitter.

(c) *Initial channel.* The FCC will not assign more than one channel for new paging stations. Paging stations are

considered to be new if there are no authorized transmitters on any channel listed in § 22.531 controlled by the applicant in the same geographic area.

(d) *Additional channel.* Applications for transmitters to be located in the same geographic area as an authorized station controlled by the applicant, but to operate on a different channel, are considered as requesting an additional channel for the authorized station, unless paragraph (e) of this section applies.

(e) *Additional transmitters on same channel.* Notwithstanding other provisions of this section, applications for transmitters to be located in the same geographic area as an authorized station controlled by the applicant, and to operate on the same paging channel, are not considered to be requests for an additional paging channel.

(f) *Amendment of pending application.* If the FCC receives and accepts for filing an application for a transmitter to be located in the same geographic area as a transmitter proposed in a pending application previously filed by the applicant, but on a different channel, the subsequent application is considered as a major amendment to change the technical proposal of the prior application, unless paragraph (e) applies. The filing date of any application so amended is the date the FCC received the subsequent application.

(g) *Dismissal of premature applications for additional channel.* If the FCC receives an application requesting an additional channel for an authorized station prior to receiving notification that the station is providing service to subscribers on the authorized channel(s), the FCC may dismiss that application without prejudice in accordance with § 22.128.

**§ 22.551 Nationwide network paging service.**

The rules in this section govern the application for and provision of nationwide network paging service on the channels reserved specifically for such service in § 22.531(b).

(a) *Nationwide network organizers.* If and when a nationwide network paging channel becomes available for assignment, the FCC will issue a Public Notice inviting applications from carriers

seeking to organize a nationwide network paging service. The Public Notice will provide complete details regarding application requirements and procedures.

(b) [Reserved]

(c) *Affiliated local carriers.* Parties seeking to become affiliated local carriers in a nationwide network paging service must have specific completed contracts with the network organizer with which they are proposing to affiliate. Applications may contain a letter, in lieu of the contracts, indicating that the applicant has a completed contract with the organizer.

(d) *Liability for technical operation.* Nationwide network organizers and affiliated local carriers are jointly and severally liable for the technical operation of the local network stations.

**§22.559 One-way paging application requirements.**

In addition to information required by Subparts b and d of this part and §22.529, applications for authorization to operate a paging transmitter on the channels listed in §22.531 must contain the applicable supplementary information described in this section.

(a) *Interference exhibit.* Except as provided in paragraph (b) of this section, an exhibit demonstrating compliance with §22.537 with regard to protected transmitters is required for applications to operate a transmitter on the VHF channels. This exhibit must:

(1) Identify each protected transmitter located within 109 kilometers (68 miles) of the proposed transmitter in directions in which the distance to the interfering contour is 76.5 kilometers (47.5 miles) or less, and within 178 kilometers (111 miles) of the proposed transmitter in directions in which the distance to the interfering contour exceeds 76.5 kilometers (47.5 miles).

(2) For each protected transmitter identified, show the results of distance calculations indicating that there would be no overlap of service and interfering contours, or alternatively, indicate that the licensee or applicant for the protected transmitter and/or the applicant, as required, have agreed in writing to accept any interference resulting from operation of the proposed transmitter.

(b) *Encompassment exhibit.* An exhibit showing that the area within the interfering contour of the proposed transmitter would be totally encompassed by interfering contours of operating co-channel base transmitters controlled by the applicant is required for applications to operate a transmitter with ERP exceeding the basic power and height-power limits of §22.535. For VHF transmitters, this encompassment exhibit may substitute for the interference exhibit required in paragraph (a) of this section.

ONE-WAY OR TWO-WAY MOBILE OPERATION

**§22.561 Channels for one-way or two-way mobile operation.**

The following channels are allocated for paired assignment to transmitters that provide (or support other transmitters that provide) one-way or two-way public land mobile service. These channels may be assigned for use by mobile or base transmitters as indicated, and to fixed transmitters (including control, repeater or other fixed transmitters). The mobile channels may also be assigned for use by base or fixed transmitters under certain circumstances (see §22.567(h)). Unless otherwise indicated, all channels have a bandwidth of 20 kHz and are designated by their center frequencies in Mega-Hertz.

Base	Mobile	Base	Mobile
<b>VHF Channels</b>			
152.03 .....	158.49	152.57 .....	157.83
152.06 .....	158.52	152.60 .....	157.86
152.09 .....	158.55	152.63 .....	157.89
152.12 .....	158.58	152.66 .....	157.92
152.15 .....	158.61	152.69 .....	157.95
152.18 .....	158.64	152.72 .....	157.98
152.21 .....	158.67	152.75 .....	158.01
152.51 .....	157.77	152.78 .....	158.04
152.54 .....	157.80	152.81 .....	158.07
<b>UHF Channels</b>			
454.025 .....	459.025	454.350 .....	459.350
454.050 .....	459.050	454.375 .....	459.375
454.075 .....	459.075	454.400 .....	459.400
454.100 .....	459.100	454.425 .....	459.425
454.125 .....	459.125	454.450 .....	459.450
454.150 .....	459.150	454.475 .....	459.475
454.175 .....	459.175	454.500 .....	459.500

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Base	Mobile	Base	Mobile
454.200 .....	459.200	454.525 .....	459.525
454.225 .....	459.225	454.550 .....	459.550
454.250 .....	459.250	454.575 .....	459.575
454.275 .....	459.275	454.600 .....	459.600
454.300 .....	459.300	454.625 .....	459.625
454.325 .....	459.325	454.650 .....	459.650

[59 FR 59507, Nov. 17, 1994; 60 FR 9889, Feb. 22, 1995]

**§22.563 Provision of rural radiotelephone service upon request.**

Channels in the frequency ranges 152.03–152.81, 157.77–158.67, 454.025–454.650 and 459.025–459.650 MHz, inclusive, are also allocated for assignment in the Rural Radiotelephone Service. Stations in the Paging and Radiotelephone Service that provide two-way public mobile service on these channels must also provide rural radiotelephone service upon request from a subscriber.

**§22.565 Transmitting power limits.**

The transmitting power of base, mobile and fixed transmitters operating on the channels listed in §22.561 must not exceed the limits in this section.

(a) *Maximum ERP.* The effective radiated power (ERP) of base and fixed transmitters must not exceed the applicable limits in this paragraph under any circumstances.

Frequency range (MHz)	Maximum ERP (watts)
152–153 .....	1400
157–159 .....	150
454–455 .....	3500
459–460 .....	150

(b) *Basic power limit.* Except as provided in paragraph (d) of this section, the ERP of base transmitters must not exceed 500 Watts.

(c) *Height-power limits.* Except as provided in paragraph (d) of this section, the ERP of base transmitters must not exceed the amount that would result in an average distance to the service contour of 41.6 kilometers (26 miles) for VHF channels or 30.7 kilometers (19 miles) for UHF channels. The average distance to the service contour is calculated by taking the arithmetic mean of the distances determined using the procedures specified in §22.567 for the eight cardinal radial directions, excluding cardinal radial directions for

which 90% or more of the distance so calculated is over water.

(d) *Encompassed interfering contour areas.* Base transmitters are exempt from the basic power and height-power limits of this section if the area within their interfering contours is totally encompassed by the interfering contours of operating co-channel based transmitters controlled by the same licensee. For the purpose of this paragraph, operating transmitters are authorized transmitters that are providing service to subscribers.

(e) *Adjacent channel protection.* The ERP of base and fixed transmitters must not exceed 500 Watts if they transmit on channel 454.025 MHz and are located less than 7 kilometers (4.3 miles) from any Private Radio Services station receiving on adjacent channel 454.0000 MHz.

(f) *Mobile transmitters.* The transmitter output power of mobile transmitters must not exceed 60 watts.

(g) *Other transmitters.* The ERP of dispatch and auxiliary test transmitters must not exceed 100 watts.

**§22.567 Technical channel assignment criteria.**

The rules in this section establish technical assignment criteria for the channels listed in §22.561. The criteria in paragraphs (a) through (f) of this section permit channel assignments to be made in a manner such that reception by public mobile receivers of signals from base transmitters, within the service area of such base transmitters, is protected from interference caused by the operation of independent co-channel base and fixed transmitters in the Paging and Radiotelephone Service and central office stations, including Basic Exchange Telephone Radio Systems (BETRS), in the Rural Radiotelephone Service. Additional criteria in paragraph (g) of this section permit channel assignments to be made in a manner such that BETRS communications are protected from interference caused by the operation of independent co-channel base and fixed transmitters in the Paging and Radiotelephone Service and other central office stations in the Rural Radiotelephone Service. Separate criteria in paragraph

(h) of this section apply only to assignment of the channels designated in § 22.561 as mobile channels to base and fixed transmitters, and permit these channel assignments to be made in a manner such that reception by public base and fixed receivers of signals from associated mobile and fixed transmitters is protected from interference caused by the operation of independent co-channel base and fixed transmitters.

(a) *Contour overlap.* The FCC may grant an application requesting assignment of a channel to a proposed base, fixed or central office station transmitter only if:

(1) The interfering contour of the proposed transmitter does not overlap the service contour of any protected co-channel transmitter controlled by a carrier other than the applicant, unless that carrier has agreed in writing to accept any interference that may result from operation of the proposed transmitter; and

(2) The service contour of the proposed transmitter does not overlap the interfering contour of any protected co-channel transmitter controlled by a carrier other than the applicant, unless the application contains a statement that the applicant agrees to accept any interference that may result from operation of the protected co-channel transmitter; and

(3) The area and/or population to which service would be provided by the proposed transmitter is substantial, and service gained would exceed that lost as a result of agreements to accept interference.

(b) *Protected transmitter.* For the purposes of this section, protected transmitters are authorized transmitters for which there is a current FCC public record and transmitters proposed in prior-filed pending applications, in the Paging and Radiotelephone Service and the Rural Radiotelephone Service.

(c) *VHF service contour.* For base stations transmitting on the VHF channels, the radial distance from the transmitting antenna to the service contour along each cardinal radial is calculated as follows:

$$d = 1.609 \times h^{0.40} \times p^{0.20}$$

where:

d is the radial distance in kilometers

h is the radial antenna HAAT in meters

p is the radial ERP in Watts

(1) Whenever the actual HAAT is less than 30 meters (98 feet), 30 must be used as the value for h in the above formula.

(2) The value used for p in the above formula must not be less than 27 dB less than the maximum ERP in any direction, or 0.1 Watt, whichever is more.

(3) The distance from the transmitting antenna to the service contour along any radial other than the eight cardinal radials is routinely calculated by linear interpolation of distance as a function of angle. However, in resolving petitions to deny, the FCC may calculate the distance to the service contour using the formula in paragraph (c) of this section with actual HAAT and ERP data for the inter-station radial and additional radials above and below the inter-station radial at 2.5° intervals.

(d) *VHF interfering contour.* For base and fixed stations transmitting on the VHF channels, the radial distance from the transmitting antenna to the interfering contour along each cardinal radial is calculated as follows:

(1) If the radial antenna HAAT is less than 150 meters:

$$d = 8.577 \times h^{0.24} \times p^{0.19}$$

where:

d is the radial distance in kilometers

h is the radial antenna HAAT in meters

p is the radial ERP in Watts

Whenever the actual HAAT is less than 30 meters (98 feet), 30 must be used as the value for h in the above formula.

(2) If the radial antenna HAAT is 150 meters or more:

$$d = 12.306 \times h^{0.23} \times p^{0.14}$$

where:

d is the radial distance in kilometers

h is the radial antenna HAAT in meters

p is the radial ERP in Watts

(3) The value used for p in the above formulas must not be less than 27 dB less than the maximum ERP in any direction, or 0.1 Watt, whichever is more.

(4) The distance from the transmitting antenna to the interfering contour along any radial other than the eight

cardinal radials is routinely calculated by linear interpolation of distance as a function of angle. However, in resolving petitions to deny, the FCC may calculate the distance to the interfering contour using the appropriate formula in paragraph (d) of this section with actual HAAT and ERP data for the inter-station radial and additional radials above and below the inter-station radial at 2.5° intervals.

(e) *UHF service contour.* For base stations transmitting on the UHF channels, the radial distance from the transmitting antenna to the service contour along each cardinal radial is calculated as follows:

$$d = 1.726 \times h^{0.35} \times p^{0.18}$$

where:

d is the radial distance in kilometers  
h is the radial antenna HAAT in meters

p is the radial ERP in Watts

(1) Whenever the actual HAAT is less than 30 meters (98 feet), 30 must be used as the value for h in the above formula.

(2) The value used for p in the above formula must not be less than 27 dB less than the maximum ERP in any direction, or 0.1 Watt, whichever is more.

(3) The distance from the transmitting antenna to the service contour along any radial other than the eight cardinal radials is routinely calculated by linear interpolation of distance as a function of angle. However, in resolving petitions to deny, the FCC may calculate the distance to the service contour using the formula in paragraph (e) of this section with actual HAAT and ERP data for the inter-station radial and addition radials above and below the below the inter-station radial at 2.5° intervals.

(f) *UHF interfering contour.* For base and fixed stations transmitting on the UHF channels, the radial distance from the transmitting antenna to the interfering contour along each cardinal radial is calculated as follows:

(1) If the radial antenna HAAT is less than 150 meters:

$$d = 9.471 \times h^{0.23} \times p^{0.15}$$

where:

d is the radial distance in kilometers  
h is the radial antenna HAAT in meters

p is the radial ERP in Watts

Whenever the actual HAAT is less than 30 meters (98 feet), 30 must be used as the value for h in the above formula.

(2) If the radial antenna HAAT is 150 meters or more:

$$d = 6.336 \times h^{0.31} \times p^{0.15}$$

where:

d is the radial distance in kilometers  
h is the radial antenna HAAT in meters

p is the radial ERP in Watts

(3) The value used for p in the above formula must not be less than 27 dB less than the maximum ERP in any direction, or 0.1 Watt, whichever is more.

(4) The distance from the transmitting antenna to the interfering contour along any radial other than the eight cardinal radials is routinely calculated by linear interpolation of distance as a function of angle. However, in resolving petitions to deny, the FCC may calculate the distance to the interfering contour using the appropriate formula in paragraph (f) of this section with actual HAAT and ERP data for the inter-station radial and additional radials above and below the inter-station radial at 2.5° intervals.

(g) *Protection for BETRS.* In applying the provisions of paragraph (a) of this section, if either or both of the transmitters involved is a BETRS central office station, the following contour substitutions must be used:

(1) The service contour of the BETRS central office station(s) is a circle, centered on the central office station antenna, with a radius of 40 kilometers (25 miles).

(2) The interfering contour of any station of any type, when determining whether it would overlap the service contour of a BETRS central office station, is calculated as follows:

$$d = 36.364 \times h^{0.2} \times p^{0.1}$$

where:

d is the radial distance in kilometers  
h is the radial antenna HAAT in meters

p is the radial ERP in Watts

Whenever the actual HAAT is less than 30 meters (98 feet), 30 must be used as the value for h in the above formula. The value used for p in the above



formula must not be less than 27 dB less than the maximum ERP in any direction, or 0.1 Watt, whichever is more.

(h) *Assignment of mobile channels to base or fixed transmitters.* Mobile channels may be assigned to base or fixed transmitters if the following criteria are met:

(1) The paired base channel, as designated in §22.561, is assigned to base transmitters in the same geographical area operated by the same licensee.

(2) The authorization is granted subject to the condition that no interference be caused to fixed receivers in use on or prior to the date of the grant.

#### §22.569 Additional channel policies.

The rules in this section govern the processing of applications for a mobile channel when the applicant has applied or been granted an authorization for other mobile channels in the same geographic area. This section applies to applications proposing to use the channels listed in §22.561, except applications that propose to use these channels to provide paging service only, which are subject to §22.539, instead of this section. The general policy of the FCC is to assign no more than two channels in an area to a carrier per application cycle. That is, a carrier must apply for no more than two channels, receive the authorization, construct the station, provide service to subscribers, and notify the FCC of commencement of service to subscribers (FCC Form 489) before applying for additional mobile channels in that area.

(a) *Transmitters in same area.* Any transmitter on any channel listed in §22.561 is considered to be in the same geographic area as another transmitter or any other channel listed in §22.561 if:

(1) One transmitter location is within the service area of the other transmitter; or,

(2) The area within the overlap of the service contours of the two transmitters constitutes 50 percent or more of the service area of either of the transmitters.

(b) *Initial channel.* The FCC will not assign more than two channels for new stations. Stations are considered to be new if there are no authorized transmitters on any channel listed in §22.561

controlled by the applicant in the same geographic area.

(c) *Additional channel.* Applications for transmitters to be located in the same geographic area as an authorized station controlled by the applicant, but to operate on a different channel, are considered as requests for an additional channel for the authorized station, unless paragraph (d) of this section applies.

(d) *Additional transmitters on same channel.* Notwithstanding other provisions of this section, applications for transmitters to be located in the same geographic area as an authorized station controlled by the applicant, and to operate on the same channel, are not considered as requests for an additional channel.

(e) [Reserved]

(f) *Dismissal of application constituting cumulative request for more than two channels.* If the FCC receives an application for a transmitter to be located in the same geographic area as a transmitter proposed in a pending application previously filed by the applicant, but on different channels such that, considered together, the applications would constitute a request for more than two channels, the FCC may dismiss the subsequent application without prejudice.

(g) *Dismissal of premature applications for additional channel.* If the FCC receives an application requesting two additional channels (or one additional channel) for an authorized station prior to receiving notification that the station is providing service to subscribers on all (or all except one) of the authorized channels, the FCC may dismiss that application without prejudice.

#### §22.571 Responsibility for mobile stations.

Mobile stations that are subscribers in good standing to a two-way service in the Paging and Radiotelephone Service, when receiving service from that station, are considered to be operating under the authorization of that station. Licensees are responsible for exercising effective operational control over mobile stations receiving service through their stations. Mobile stations that are subscribers in good standing

to a two-way service in the Paging and Radiotelephone Service, while receiving service from a different station, are considered to be operating under the authorization of such different station. The licensee of such different station is responsible, during such temporary period, for exercising effective operational control over such mobile stations as if they were subscribers to it.

**§ 22.573 Use of base transmitters as repeaters.**

As an additional function, base transmitters may be used as repeaters. Licensees must be able to turn the base transmitter on or off from the control point regardless of whether a subscriber-operated transmitter is transmitting.

**§ 22.575 Use of mobile channel for remote control of station functions.**

Carriers may remotely control station functions (e.g. shut down or reactivate base transmitters, turn aviation obstruction warning lights on or off, etc.) using a control transmitter operating on a mobile channel, subject to the conditions in this section and in § 22.567(h).

(a) The control transmitter must be capable of overriding transmissions from subscriber-operated transmitters if necessary. Subscriber-operated transmitters must not be capable of being used to deliberately or accidentally prevent the licensee from controlling the station.

(b) The licensee must implement measures designed to prevent station functions from being controlled by persons not authorized by the licensee to control the station.

(c) The control transmitter location must be within the composite service contour of the licensee's authorized station on the paired base channel.

**§ 22.577 Dispatch service.**

Carriers licensed under this subpart may provide dispatch service in accordance with the rules in this section.

(a) *Installation without prior FCC approval.* A station licensee may install or remove dispatch points for subscribers without obtaining prior FCC approval. A station licensee may install or remove dispatch transmitters for

subscribers without applying for specific authorization, provided that the following conditions are met.

(1) Each dispatch transmitter must be able to transmit only on the mobile channel that is paired with the channel used by the base station.

(2) The antenna of the dispatch transmitter must not exceed the criteria in § 17.7 of this chapter that determine whether the FAA must be notified of the proposed construction.

(3) The output power of the dispatch transmitter must not exceed 10 Watts.

(4) The dispatch transmitter must be incapable of overriding the functioning of any control transmitter that may be using the same channel.

(5) The dispatch transmitter must be under the continuous supervision of the licensee.

(b) *Notification.* Licensees must notify the FCC (FCC Form 489) whenever a dispatch transmitter is installed pursuant to paragraph (a) of this section. The notification must include the name and address of the subscriber(s) for which the dispatch transmitter was installed, the location of the dispatch transmitter, the height of antenna structure above ground and above mean sea level, the channel(s) used, and the call sign and location of the base station.

(c) *Termination without hearing.* Operation of a dispatch transmitter pursuant to paragraphs (a) and (b) of this section may be terminated by the FCC without a hearing upon notice to the licensee.

(d) *Dispatch transmitters requiring authorization.* A dispatch transmitter that does not meet all of the requirements of paragraph (a) of this section may be installed only upon grant of an application for authorization therefor (FCC Form 600).

(e) *Permissible communications.* A dispatch transmitter operated by a subscriber may communicate only with mobile transmitters operated by that subscriber through the associated base transmitter.

[59 FR 59507, Nov. 17, 1994, as amended at 60 FR 15495, Mar. 24, 1995]

**§22.579 Operation of mobile transmitters across U.S.-Canada border.**

Mobile stations licensed by Canada may receive two-way service while in the United States from stations licensed under this part, after authorization has been granted by the FCC. Mobile stations that normally operate under the authority of base stations licensed under this part may receive two-way service while in Canada from stations licensed under this part or by Canada, upon authorization by Canada.

**§22.589 One-way or two-way application requirements.**

In addition to information required by subparts B and D of this part and §22.529, applications for authorization to operate a transmitter on the channels listed in §22.561 must contain the applicable supplementary information described in this section.

(a) *Interference exhibit.* Except as provided in paragraph (b) of this section, an exhibit demonstrating compliance with §22.567 with regard to protected transmitters is required. This exhibit must:

(1) For UHF channels, identify each protected transmitter located within 108 kilometers (67 miles) of the proposed transmitter in directions in which the distance to the interfering contour is 76.4 kilometers (47.5 miles) or less, and within 178 kilometers (111 miles) of the proposed transmitter in directions in which the distance to the interfering contour exceeds 76.4 kilometers (47.5 miles); and identify each protected Basic Exchange Telephone Radio System central office transmitter in the Rural Radiotelephone Service within 231 kilometers (144 miles),

(2) For VHF channels, identify each protected transmitter located within 135 kilometers (84 miles) of the proposed transmitter in directions in which the distance to the interfering contour is 93.3 kilometers (58 miles) or less, and within 178 kilometers (111 miles) of the proposed transmitter in directions in which the distance to the interfering contour exceeds 93.3 kilometers (58 miles).

(3) For each protected transmitter identified, show the results of distance calculations indicating that there would be no overlap of service and

interfering contours, or alternatively, indicate that the licensee of or applicant for the protected transmitter and/or the applicant, as required, have agreed in writing to accept any interference resulting from operation of the proposed transmitter.

(b) *Encompassment exhibit.* An exhibit showing that the area within the interfering contour of the proposed transmitter would be totally encompassed by interfering contours of operating co-channel base transmitters controlled by the applicant is required for applications to operate a transmitter with ERP exceeding the basic power and height-power limits of §22.565. This encompassment exhibit may substitute for the interference exhibit required in paragraph (a) of this section.

POINT-TO-POINT OPERATION

**§22.591 Channels for point-to-point operation.**

The following channels are allocated for assignment to fixed transmitters that support other transmitters that provide public mobile service. Unless otherwise indicated, all channels have a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz.

VHF Channels			
72.02	72.36	72.80	75.66
72.04	72.38	72.82	75.68
72.06	72.40	72.84	75.70
72.08	72.42	72.86	75.72
72.10	72.46	72.88	75.74
72.12	72.50	72.90	75.76
72.14	72.54	72.92	75.78
72.16	72.58	72.94	75.80
72.18	72.62	72.96	75.82
72.20	72.64	72.98	75.84
72.22	72.66	75.42	75.86
72.24	72.68	75.46	75.88
72.26	72.70	75.50	75.90
72.28	72.72	75.54	75.92
72.30	72.74	75.58	75.94
72.32	72.76	75.62	75.96
72.34	72.78	75.64	75.98
72.10	72.46	72.88	75.74
72.12	72.50	72.90	75.76
72.14	72.54	72.92	75.78
72.16	72.58	72.94	75.80
72.18	72.62	72.96	75.82
72.20	72.64	72.98	75.84
72.22	72.66	75.42	75.86
72.24	72.68	75.46	75.88
72.26	72.70	75.50	75.90
72.28	72.72	75.54	75.92

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72.30	72.74	75.58	75.94
72.32	72.76	75.62	75.96
72.34	72.78	75.64	75.98
UHF Channels—State of Hawaii			
488.250 ....	491.250	489.750 ....	492.750
488.750 ....	491.750	490.250 ....	493.250
489.250 ....	492.250	490.750 ....	493.750

MICROWAVE CHANNELS  
[Bandwidth individually assigned]

2110.1	2160.1
2110.2	2160.2
2110.3	2160.3
2129.9	2179.9

(a) The 72–76 MHz channels may be assigned under developmental authority pursuant to the requirements of §22.413. The 72–76 MHz channels may also be used in point-to-multipoint configurations. The 72–76 MHz channels are also allocated for assignment in the Private Radio Services (see Part 90 of this chapter).

(b) Channels in the frequency ranges 2110–2130 and 2160–2180 MHz are also allocated for assignment in the broadband Personal Communications Service (see part 24 of this chapter), the Multipoint Distribution Service and the Point-to-Point Microwave Radio Service (see part 21 of this chapter). Assignment of channels in these ranges is subject to the transition rules in §22.602.

(c) Channels in the frequency ranges 488.250–490.750 and 491.250–493.750 MHz may be assigned only to inter-island fixed stations located in the State of Hawaii.

[59 FR 59507, Nov. 17, 1994; 60 FR 9889, Feb. 22, 1995]

**§22.593 Effective radiated power limits.**

The effective radiated power of fixed stations operating on the channels listed in §22.591 must not exceed 150 Watts. The equivalent isotropic radiated power of fixed stations operating in the frequency ranges 2110–2130 and 2160–2180 MHz must not exceed the limits set forth in Part 21 of this chapter for stations operating in these frequency ranges.

**§22.599 Assignment of 72–76 MHz channels.**

Because of the potential for interference to the reception of TV Channels 4 and 5 by broadcast television sets and video recorders, assignments of the 72–76 MHz channels are subject to the following conditions:

(a) Assignments of 72–76 MHz channels for use within 129 kilometers (80 miles) of a full service TV station transmitting on TV Channel 4 or 5 are subject to the condition that the licensee must eliminate any interference caused to television reception on TV Channels 4 and 5. If the FCC notifies the licensee of an interference problem and the licensee does not resolve the problem within 90 days of such notification, operation of the interfering 72–76 MHz fixed station must be immediately discontinued.

(b) 72–76 MHz channels may be assigned for use within 16 kilometers (10 miles) of a full service TV station transmitting on TV Channel 4 or 5 under a developmental authorization, pursuant to §22.413. However, for use within 50 meters (164 feet) of a TV station transmitting on TV Channel 4 or 5, 72–76 MHz channels may be assigned under a regular authorization, rather than a developmental authorization.

**§22.601 Assignment of microwave channels.**

Assignment of the microwave channels listed in §22.591 is subject to the transition rules in §22.602. No new systems will be authorized under this part.

(a) *Coordination required.* Before filing applications for authority to modify existing stations on these channels or major amendments to such applications, carriers must coordinate the planned channel usage, using the procedure outlined in §22.150, with affected parties in this radio service and the Point-to-Point Microwave Service and the Multipoint Distribution Service. Affected parties are licensees and other applicants with previously filed pending applications whose stations could affect or be affected by the proposed modification of the existing station in terms of interference.

(b) *System parameters.* In designing a system modification, the applicant

must select sites, equipment and channels that will avoid harmful interference to other users. All parties must cooperate fully and make reasonable efforts to resolve technical problems and conflicts that may inhibit the most effective and efficient use of the radio spectrum; however, a party receiving notification is not obligated to suggest changes or re-design a proposal in cases involving conflicts. The applicant must identify in the application all parties with which the technical proposal was coordinated. In the event that technical problems are not resolved or if an affected party does not respond to coordination efforts within 30 days after notification, an explanation must be contained in the application. Where technical conflicts are resolved by an agreement between the parties that requires special procedures to reduce the likelihood of harmful interference (such as the use of artificial site shielding), or would result in a reduction of quality or capacity of either system, the details thereof must be contained in the application.

(c) *Bandwidth.* Applicants must request the minimum emission bandwidth necessary. The FCC does not authorize bandwidths larger than 800 kHz under this part.

**§22.602 Transition of the 2110-2130 and 2160-2180 MHz channels to emerging technologies.**

The microwave channels listed in §22.591 have been allocated for use by emerging technologies (ET) services. No new systems will be authorized under this part. The rules in this section provide for a transition period during which existing Paging and Radiotelephone Service (PARS) licensees using these channels may relocate operations to other media or to other fixed channels, including those in other microwave bands. For PARS licensees relocating operations to other microwave bands, authorization must be obtained under Part 101 of this chapter.

(a) Licensees proposing to implement ET services may negotiate with PARS licensees authorized to use these channels, for the purpose of agreeing to terms under which the PARS licensees would—

(1) Relocate their operations to other fixed microwave bands or other media, or alternatively,

(2) Accept a sharing arrangement with the ET licensee that may result in an otherwise impermissible level of interference to the PARS operations.

(b) PARS operations on these channels will continue to be co-primary with other users of this spectrum until two years after the FCC commences acceptance of applications for ET services, and until one year after an ET licensee initiates negotiations for relocation of the fixed microwave licensee's operations.

(c) *Voluntary Negotiations.* During the two year voluntary negotiation period, negotiations are strictly voluntary and are not defined by any parameters. However, if the parties have not reached an agreement within one year after the commencement of the voluntary period, the PARS licensee must allow the ET licensee (if it so chooses) to gain access to the existing facilities to be relocated so that an independent third party can examine the PARS licensee's 2 GHz system and prepare an estimate of the cost and the time needed to relocate the PARS licensee to comparable facilities. The ET licensee must pay for any such estimate.

(d) *Mandatory Negotiations.* If a relocation agreement is not reached during the two year voluntary period, the ET licensee may initiate a mandatory negotiation period. This mandatory period is triggered at the option of the ET licensee, but ET licensees may not invoke their right to mandatory negotiation until the voluntary negotiation period has expired. Once mandatory negotiations have begun, a PARS licensee may not refuse to negotiate and all parties are required to negotiate in good faith. Good faith requires each party to provide information to the other that is reasonably necessary to facilitate the relocation process. In evaluating claims that a party has not negotiated in good faith, the FCC will consider, *inter alia*, the following factors:

(1) Whether the ET licensee has made a *bona fide* offer to relocate the PARS licensee to comparable facilities in accordance with Section 101.75(b) of this chapter;

(2) If the PARS licensee has demanded a premium, the type of premium requested (*e.g.*, whether the premium is directly related to relocation, such as system-wide relocations and analog-to-digital conversions, versus other types of premiums), and whether the value of the premium as compared to the cost of providing comparable facilities is disproportionate (*i.e.*, whether there is a lack of proportion or relation between the two);

(3) What steps the parties have taken to determine the actual cost of relocation to comparable facilities;

(4) Whether either party has withheld information requested by the other party that is necessary to estimate relocation costs or to facilitate the relocation process. Any party alleging a violation of our good faith requirement must attach an independent estimate of the relocation costs in question to any documentation filed with the Commission in support of its claim. An independent cost estimate must include a specification for the comparable facility and a statement of the costs associated with providing that facility to the incumbent licensee.

(e) *Involuntary period.* After the periods specified in paragraph (b) of this section have expired, ET licensees may initiate involuntary relocation procedures under the Commission's rules. ET licensees are obligated to pay to relocate only the specific microwave links to which their systems pose an interference problem. Under involuntary relocation, a PARS licensee is required to relocate, provided that:

(1) The ET applicant, provider, licensee or representative guarantees payment of relocation costs, including all engineering, equipment, site and FCC fees, as well as any legitimate and prudent transaction expenses incurred by the PARS licensee that are directly attributable to an involuntary relocation, subject to a cap of two percent of the hard costs involved. Hard costs are defined as the actual costs associated with providing a replacement system, such as equipment and engineering expenses. ET licensees are not required to pay PARS licensees for internal resources devoted to the relocation process. ET licensees are not required to pay for transaction costs incurred by

PARS licensees during the voluntary or mandatory periods once the involuntary period is initiated or for fees that cannot be legitimately tied to the provision of comparable facilities;

(2) The ET applicant, provider, licensee or representative completes all activities necessary for implementing the replacement facilities, including engineering and cost analysis of the relocation procedure and, if radio facilities are involved, identifying and obtaining, on the incumbents behalf, new channels and frequency coordination; and,

(3) The ET applicant, provider, licensee or representative builds the replacement system and tests it for comparability with the existing 2 GHz system.

(f) *Comparable Facilities.* The replacement system provided to an incumbent during an involuntary relocation must be at least equivalent to the existing PARS system with respect to the following three factors:

(1) *Throughput.* Communications throughput is the amount of information transferred within a system in a given amount of time. If analog facilities are being replaced with analog, the ET licensee is required to provide the PARS licensee with an equivalent number of 4 kHz voice channels. If digital facilities are being replaced with digital, the ET licensee must provide the PARS licensee with equivalent data loading bits per second (bps). ET licensees must provide PARS licensees with enough throughput to satisfy the PARS licensee's system use at the time of relocation, not match the total capacity of the PARS system.

(2) *Reliability.* System reliability is the degree to which information is transferred accurately within a system. ET licensees must provide PARS licensees with reliability equal to the overall reliability of their system. For digital data systems, reliability is measured by the percent of time the bit error rate (BER) exceeds a desired value, and for analog or digital voice transmissions, it is measured by the percent of time that audio signal quality meets an established threshold. If an analog voice system is replaced with

a digital voice system, only the resulting frequency response, harmonic distortion, signal-to-noise ratio and its reliability will be considered in determining comparable reliability.

(3) *Operating Costs.* Operating costs are the cost to operate and maintain the PARS system. ET licensees must compensate PARS licensees for any increased recurring costs associated with the replacement facilities (e.g. additional rental payments, increased utility fees) for five years after relocation. ET licensees may satisfy this obligation by making a lump-sum payment based on present value using current interest rates. Additionally, the maintenance costs to the PARS licensee must be equivalent to the 2 GHz system in order for the replacement system to be considered comparable.

(g) The PARS licensee is not required to relocate until the alternative facilities are available to it for a reasonable time to make adjustments, determine comparability, and ensure a seamless handoff.

(h) *The Commission's Twelve-Month Trial Period.* If, within one year after the relocation to new facilities, the PARS licensee demonstrates that the new facilities are not comparable to the former facilities, the ET applicant, provider, licensee or representative must remedy the defects or pay to relocate the PARS licensee to one of the following: its former or equivalent 2 GHz channels, another comparable frequency band, a land-line system, or any other facility that satisfies the requirements specified in paragraph (f) of this section. This trial period commences on the date that the PARS licensee begins full operation of the replacement link. If the PARS licensee has retained its 2 GHz authorization during the trial period, it must return the license to the Commission at the end of the twelve months.

(i) After April 25, 1996, all major modifications and extensions to existing PARS systems operating on channels in the 2110-2130 and 2160-2180 MHz bands will be authorized on a secondary basis to future ET operations. All other modifications will render the modified PARS license secondary to future ET operations unless the incumbent affirmatively justifies primary

status and the incumbent PARS licensee establishes that the modification would not add to the relocation costs of ET licensees. Incumbent PARS licensees will maintain primary status for the following technical changes:

- (1) Decreases in power;
- (2) Minor changes (increases or decreases) in antenna height;
- (3) Minor location changes (up to two seconds);
- (4) Any data correction which does not involve a change in the location of an existing facility;
- (5) Reductions in authorized bandwidth;
- (6) Minor changes (increases or decreases) in structure height;
- (7) Changes (increases or decreases) in ground elevation that do not affect centerline height;
- (8) Minor equipment changes.

(j) *Sunset.* PARS licensees will maintain primary status in the 2110-2130 and 2160-2180 MHz bands unless and until an ET licensee requires use of the spectrum. ET licensees are not required to pay relocation costs after the relocation rules sunset (*i.e.* ten years after the voluntary period begins for the first ET licensees in the service). Once the relocation rules sunset, an ET licensee may require the incumbent to cease operations, provided that the ET licensee intends to turn on a system within interference range of the incumbent, as determined by TIA Bulletin 10-F or any standard successor. ET licensee notification to the affected PARS licensee must be in writing and must provide the incumbent with no less than six months to vacate the spectrum. After the six-month notice period has expired, the PARS licensee must turn its license back into the Commission, unless the parties have entered into an agreement which allows the PARS licensee to continue to operate on a mutually agreed upon basis. If the parties cannot agree on a schedule or an alternative arrangement, requests for extension will be accepted and reviewed on a case-by-case basis. The Commission will grant such extensions only if the incumbent can demonstrate that:

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(1) It cannot relocate within the six-month period (*e.g.*, because no alternative spectrum or other reasonable option is available), and;

(2) The public interest would be harmed if the incumbent is forced to terminate operations (*e.g.*, if public safety communications services would be disrupted).

[61 FR 29689, June 12, 1996]

**§22.603 488-494 MHz fixed service in Hawaii.**

Before filing applications for authorization of inter-island control and/or repeater stations, applicants must coordinate the planned channel usage with existing licensees and other applicants with previously filed applications, using the procedure outlined in §22.150. Applicants and licensees shall cooperate fully and make reasonable efforts to resolve any channel usage conflicts. In situations where technical solutions to such conflicts cannot be devised, the FCC may select a channel or channels to assign or may designate the application(s) for hearing. To be acceptable for filing, applications and major technical amendments must contain a certification that coordination has been completed and an exhibit listing the name(s) of the licensees and applicants with which the planned channel usage has been coordinated.

POINT-TO-MULTIPOINT OPERATION

**§22.621 Channels for point-to-multipoint operation.**

The following channels are allocated for assignment to transmitters utilized within point-to-multipoint systems that support transmitters that provide public mobile service. Unless otherwise indicated, all channels have a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz.

Public Mobile Pool			
(25 kHz bandwidth)			
928.8625 .....	959.8625	928.9375 .....	959.9375
928.8875 .....	959.8875	928.9625 .....	959.9625
928.9125 .....	959.9125	928.9875 .....	959.9875
(12.5 kHz bandwidth)			
928.85625 ....	959.85625	928.93125 ....	959.93125
928.86875 ....	959.86875	928.94375 ....	959.94375
928.88125 ....	959.88125	928.95625 ....	959.95625
928.89375 ....	959.89375	928.96875 ....	959.96875
928.90625 ....	959.90625	928.98125 ....	959.98125

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928.91875 .... 959.91875      928.99375 .... 959.99375  
Private Radio General Access Pool  
(25 kHz bandwidth)

956.2625 .....	956.3125	956.3625 .....	956.4125
956.2875 .....	956.3375	956.3875 .....	956.4375
928.0125 .....	952.0125	928.1875 .....	952.1875
928.0375 .....	952.0375	928.2125 .....	952.2125
928.0625 .....	952.0625	928.2375 .....	952.2375
928.0875 .....	952.0875	928.2625 .....	952.2625
928.1125 .....	952.1125	928.2875 .....	952.2875
928.1375 .....	952.1375	928.3125 .....	952.3125
928.1625 .....	952.1625	928.3375 .....	952.3375

(12.5 kHz bandwidth)

956.25625 ....	956.30625	956.35625 ....	956.40625
956.26875 ....	956.31875	956.36875 ....	956.41875
956.28125 ....	956.33125	956.38125 ....	956.43125
956.29375 ....	956.34375	956.39375 ....	956.44375
928.00625 ....	952.00625	928.18125 ....	952.18125
928.01875 ....	952.01875	928.19375 ....	952.19375
928.03125 ....	952.03125	928.20625 ....	952.20625
928.04375 ....	952.04375	928.21875 ....	952.21875
928.05625 ....	952.05625	928.23125 ....	952.23125
928.06875 ....	952.06875	928.24375 ....	952.24375
928.08125 ....	952.08125	928.25625 ....	952.25625
928.09375 ....	952.09375	928.26875 ....	952.26875
928.10625 ....	952.10625	928.28125 ....	952.28125
928.11875 ....	952.11875	928.29375 ....	952.29375
928.13125 ....	952.13125	928.30625 ....	952.30625
928.14375 ....	952.14375	928.31875 ....	952.31875
928.15625 ....	952.15625	928.33125 ....	952.33125
928.16875 ....	952.16875	928.34375 ....	952.34375

Private Radio Power Pool

(25 kHz bandwidth)

928.3625 .....	952.3625	928.6125 .....	952.6125
928.3875 .....	952.3875	928.6375 .....	952.6375
928.4125 .....	952.4125	928.6625 .....	952.6625
928.4375 .....	952.4375	928.6875 .....	952.6875
928.4625 .....	952.4625	928.7125 .....	952.7125
928.4875 .....	952.4875	928.7375 .....	952.7375
928.5125 .....	952.5125	928.7625 .....	952.7625
928.5375 .....	952.5375	928.7875 .....	952.7875
928.5625 .....	952.5625	928.8125 .....	952.8125
928.5875 .....	952.5875	928.8375 .....	952.8375

(12.5 kHz bandwidth)

928.35625 ....	952.35625	928.60625 ....	952.60625
928.36875 ....	952.36875	928.61875 ....	952.61875
928.38125 ....	952.38125	928.63125 ....	952.63125
928.39375 ....	952.39375	928.64375 ....	952.64375
928.40625 ....	952.40625	928.65625 ....	952.65625
928.41875 ....	952.41875	928.66875 ....	952.66875
928.43125 ....	952.43125	928.68125 ....	952.68125
928.44375 ....	952.44375	928.69375 ....	952.69375
928.45625 ....	952.45625	928.70625 ....	952.70625
928.46875 ....	952.46875	928.71875 ....	952.71875
928.48125 ....	952.48125	928.73125 ....	952.73125
928.49375 ....	952.49375	928.74375 ....	952.74375
928.50625 ....	952.50625	928.75625 ....	952.75625
928.51875 ....	952.51875	928.76875 ....	952.76875
928.53125 ....	952.53125	928.78125 ....	952.78125
928.54375 ....	952.54375	928.79375 ....	952.79375
928.55625 ....	952.55625	928.80625 ....	952.80625
928.56875 ....	952.56875	928.81875 ....	952.81875
928.58125 ....	952.58125	928.83125 ....	952.83125
928.59375 ....	952.59375	928.84375 ....	952.84375

Public, Private, Government Shared Pool

(12.5 kHz bandwidth)

932.00625 ....	941.00625	932.25625 ....	941.25625
932.01875 ....	941.01875	932.26875 ....	941.26875
932.03125 ....	941.03125	932.28125 ....	941.28125
932.04375 ....	941.04375	932.29375 ....	941.29375



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932.05625	941.05625	932.30625	941.30625	488.1875	491.1875	488.2625	491.2625
932.06875	941.06875	932.31875	941.31875	488.2125	491.2125	488.2875	491.2875
932.08125	941.08125	932.33125	941.33125				
932.09375	941.09375	932.34375	941.34375				
932.10625	941.10625	932.35625	941.35625	470.0125	473.0125	506.0625	509.0625
932.11875	941.11875	932.36875	941.36875	470.0375	473.0375	506.0875	509.0875
932.13125	941.13125	932.38125	941.38125	506.0125	509.0125	506.1125	509.1125
932.14375	941.14375	932.39375	941.39375	506.0375	509.0375		
932.15625	941.15625	932.40625	941.40625				
932.16875	941.16875	932.41875	941.41875				
932.18125	941.18125	932.43125	941.43125	470.0125	470.1625	473.0125	473.1625
932.19375	941.19375	932.44375	941.44375	470.0375	470.1875	473.0375	473.1875
932.20625	941.20625	932.45625	941.45625	470.0625	470.2125	473.0625	473.2125
932.21875	941.21875	932.46875	941.46875	470.0875	470.2375	473.0875	473.2375
932.23125	941.23125	932.48125	941.48125	470.1125	470.2625	473.1125	473.2625
932.24375	941.24375	932.49375	941.49375	470.1375	470.2875	473.1375	473.2875
UHF Channels in Specified Urban Areas							
Boston							
470.0125	473.0125	482.0125	485.0125	500.0125	503.0125	506.0125	509.0125
470.0375	473.0375	482.0375	485.0375	500.0375	503.0375	506.0375	509.0375
470.0625	473.0625	482.0625	485.0625	500.0625	503.0625	506.0625	509.0625
470.0875	473.0875	482.0875	485.0875	500.0875	503.0875	506.0875	509.0875
470.1125	473.1125	482.1125	485.1125	500.1125	503.1125	506.1125	509.1125
470.1375	473.1375	482.1375	485.1375	500.1375	503.1375	506.1375	509.1375
470.1625	473.1625	482.1625	485.1625	500.1625	503.1625	506.1625	509.1625
470.1875	473.1875	482.1875	485.1875	500.1875	503.1875	506.1875	509.1875
470.2125	473.2125	482.2125	485.2125	500.2125	503.2125	506.2125	509.2125
470.2375	473.2375	482.2375	485.2375	500.2375	503.2375	506.2375	509.2375
470.2625	473.2625	482.2625	485.2625	500.2625	503.2625	506.2625	509.2625
470.2875	473.2875	482.2875	485.2875	500.2875	503.2875	506.2875	509.2875
Chicago, Cleveland							
470.0125	473.0125	476.0125	479.0125	470.0125	470.1625	473.0125	473.1625
470.0375	473.0375	476.0375	479.0375	470.0375	470.1875	473.0375	473.1875
470.0625	473.0625	476.0625	479.0625	470.0625	470.2125	473.0625	473.2125
470.0875	473.0875	476.0875	479.0875	470.0875	470.2375	473.0875	473.2375
470.1125	473.1125	476.1125	479.1125	470.1125	470.2625	473.1125	473.2625
470.1375	473.1375	476.1375	479.1375	470.1375	470.2875	473.1375	473.2875
470.1625	473.1625	476.1625	479.1625				
470.1875	473.1875	476.1875	479.1875	482.0125	485.0125	488.0125	491.0125
470.2125	473.2125	476.2125	479.2125	482.0375	485.0375	488.0375	491.0375
470.2375	473.2375	476.2375	479.2375	482.0625	485.0625	488.0625	491.0625
470.2625	473.2625	476.2625	479.2625	482.0875	485.0875	488.0875	491.0875
470.2875	473.2875	476.2875	479.2875	482.1125	485.1125	488.1125	491.1125
New York-Northeastern New Jersey							
470.0125	470.1625	476.0125	476.1625	482.1375	485.1375	488.1375	491.1375
470.0375	470.1875	476.0375	476.1875	482.1625	485.1625	488.1625	491.1625
470.0625	470.2125	476.0625	476.2125	482.1875	485.1875	488.1875	491.1875
470.0875	470.2375	476.0875	476.2375	482.2125	485.2125	488.2125	491.2125
470.1125	470.2625	476.1125	476.2625	482.2375	485.2375	488.2375	491.2375
470.1375	470.2875	476.1375	476.2875	482.2625	485.2625	488.2625	491.2625
				482.2875	485.2875	488.2875	491.2875
Dallas-Forth Worth							
482.0125	482.1625	485.0125	485.1625	488.0125	491.0125	494.0125	497.0125
482.0375	482.1875	485.0375	485.1875	488.0375	491.0375	494.0375	497.0375
482.0625	482.2125	485.0625	485.2125	488.0625	491.0625	494.0625	497.0625
482.0875	482.2375	485.0875	485.2375	488.0875	491.0875	494.0875	497.0875
482.1125	482.2625	485.1125	485.2625	488.1125	491.1125	494.1125	497.1125
482.1375	482.2875	485.1375	485.2875	488.1375	491.1375	494.1375	497.1375
Detroit							
476.0125	479.0125	482.0125	485.0125	488.1625	491.1625	494.1625	497.1625
476.0375	479.0375	482.0375	485.0375	488.1875	491.1875	494.1875	497.1875
476.0625	479.0625	482.0625	485.0625	488.2125	491.2125	494.2125	497.2125
476.0875	479.0875	482.0875	485.0875	488.2375	491.2375	494.2375	497.2375
476.1125	479.1125	482.1125	485.1125	488.2625	491.2625	494.2625	497.2625
476.1375	479.1375	482.1375	485.1375	488.2875	491.2875	494.2875	497.2875
476.1625	479.1625	482.1625	485.1625				
476.1875	479.1875	482.1875	485.1875				
476.2125	479.2125	482.2125	485.2125				
476.2375	479.2375	482.2375	485.2375				
476.2625	479.2625	482.2625	485.2625				
476.2875	479.2875	482.2875	485.2875				
Houston							
488.1625	491.1625	488.2375	491.2375				

(a) Channels in the Private Radio General Access Pool and the Private Radio Power Pool may be assigned only if the applicant shows that none of the channels in the Public Mobile Pool are available for the proposed use.

(b) Channels in the Public, Private, Government Shared Pool are allocated

for assignment in the Private Operational-Fixed Microwave Service (47 CFR part 94) and to U.S. government fixed stations.

[59 FR 59507, Nov. 17, 1994; 60 FR 9890, Feb. 22, 1995]

**§ 22.623 System configuration.**

This section requires a minimum configuration for point-to-multipoint systems using the channels listed in § 22.621.

(a) *928–960 MHz.* The channels may be assigned, individually or paired, only to fixed transmitters in a system that controls at least four public mobile base transmitters that transmit on the same channel. If a 932–933 MHz channel and a 941–942 MHz channel are assigned as a pair, the 941–942 MHz channel must be assigned only to control transmitters; the 932–933 MHz channel may be assigned to control or fixed relay transmitters.

(b) *470–512 MHz.* These channels may be assigned only individually (unpaired), to control transmitters that directly control at least four public mobile base transmitters that transmit on the same channel. Fixed relay transmitters are not authorized.

(c) *Selection and assignment.* The FCC selects and assigns a channel when granting applications for authorization to operate a new station to transmit in the 470–512, 932–933 and 941–942 MHz frequency ranges. Applicants having a preference may request the assignment of a specific channel or channel pair, but the FCC may in some cases be unable to satisfy such requests.

**§ 22.625 Transmitter locations.**

This section governs where point-to-multipoint transmitters on the channels listed in § 22.621 may be located.

(a) *928–960 MHz.* In this frequency range, the required minimum distance separation between co-channel fixed transmitters is 113 kilometers (70 miles). However, this requirement may be waived if the applicant submits an engineering analysis that shows that no interference would be caused to either system. In such a case, a developmental authorization may be issued (see § 22.415). If no interference is experienced during the term of the devel-

opmental authorization, the licensee may apply for a regular authorization.

(b) *470–512 MHz.* The purpose of the rule in paragraph (b)(1) of this section is to define the areas in which the 470–512 MHz channels are allocated for public mobile use. The purpose of the rules in paragraphs (b)(2) and (b)(3) of this section is to reduce the likelihood that interference to television reception from public mobile operations on these channels will occur.

(1) *Control transmitter locations.* Control transmitter locations must be within 80 kilometers (50 miles) of the designated locations in this paragraph.

Urban area	N. latitude	W. longitude
Boston, MA .....	42°21'24"	71°03'24"
Chicago, IL .....	41°52'28"	87°38'22"
Cleveland, OH .....	41°29'51"	81°41'50"
Dallas, TX .....	32°47'09"	96°47'37"
Detroit, MI .....	42°19'48"	83°02'57"
Houston, TX .....	29°45'26"	95°21'37"
Los Angeles, CA .....	34°03'15"	118°14'28"
Miami, FL .....	25°46'37"	80°11'32"
New York, NY .....	40°45'06"	73°59'39"
Philadelphia, PA .....	39°56'58"	75°09'21"
Pittsburgh, PA .....	40°26'19"	80°00'00"
San Francisco-Oakland, CA .....	37°46'39"	122°24'40"
Washington, DC .....	38°53'51"	77°00'33"

(2) *Protection from intermodulation interference.* Control transmitter locations must be at least 1.6 kilometers (1 mile) from the main transmitter locations of all TV stations transmitting on TV channels separated by 2, 3, 4, 5, 7, or 8 TV channels from the TV channel containing the frequencies on which the control station will transmit. This requirement is intended to reduce the likelihood of intermodulation interference.

(3) *Co-channel protection from control transmitters with high antennas.* This paragraph applies only to control transmitters that utilize an antenna height of more than 152 meters (500 feet) above average terrain. The distance between the location of such a control transmitter and the applicable protected TV station location specified in this paragraph must equal or exceed the sum of the distance from the control transmitter location to the radio horizon in the direction of the specified location and 89 kilometers (55 miles—representing the distance from the main transmitter location of the TV station to its Grade B contour in the

direction of the control transmitter). The protected TV station locations in this paragraph are the locations of record as of September 1974, and these do not change even though the TV stations may have been subsequently relocated.

(i) The protected TV station locations are as follows:

Control transmitter frequency range	Protected TV station location
470-476 MHz.	Washington, DC 38°57'17" 77°00'17"
476-482 MHz.	Lancaster, PA 40°15'45" 76°27'49"

(ii) The distance to the radio horizon is calculated using the following formula:

$$d = \sqrt{17 \times h}$$

where

d is the distance to the radio horizon in kilometers

h is the height of the antenna center of radiation above ground level in meters

**§ 22.627 Effective radiated power limits.**

The effective radiated power (ERP) of transmitters operating on the channels listed in § 22.621 must not exceed the limits in this section.

Control transmitter frequency range	Protected TV station location
470-476 MHz	Jacksonville, IL 39°45'52" 90°30'29". Mt. Pleasant, MI 43°34'24" 84°46'21". Oxford, OH 39°30'26" 84°44'09".
476-482 MHz	Washington, DC 38°57'17" 77°00'17". Champaign, IL 40°04'11" 87°54'45". Madison, WI 43°03'01" 89°29'15". Parkersburg, WV 39°20'50" 81°33'56". Fort Wayne, IN 41°05'35" 85°10'42". Lancaster, PA 40°15'45" 76°27'49". South Bend, IN 41°36'26" 86°27'48".
482-488 MHz	Philadelphia, PA 40°02'30" 75°14'24".
488-494 MHz	None.
494-500 MHz	Johnstown, PA 40°19'47" 78°53'45".
500-506 MHz	Washington, DC 38°57'49" 77°06'18".
506-512 MHz	Waterbury, CT 41°31'02" 73°01'00".

(ii) Table E-3 and E-4 apply to control transmitters in the New York-Northeastern New Jersey and Cleveland urban areas that transmit on channels in the 476-482 MHz range and to control transmitters in the Detroit

(a) *Maximum ERP.* The ERP must not exceed the applicable limits in this paragraph under any circumstances.

Frequency range (MHz)	Maximum ERP (watts)
470-512	1000
928-929	50
932-933	30
941-942	600
952-960	150

(b) *470-512 MHz limits.* The purpose of the rules in paragraphs (b)(1) through (b)(3) of this section is to reduce the likelihood that interference to television reception from public mobile operations on these channels will occur. The protected TV station locations specified in this section are the locations of record as of September 1974, and these do not change even though the TV stations may have been subsequently relocated.

(1) *Co-channel protection.* The ERP of control transmitters must not exceed the limits in the tables in paragraphs (b)(1)(ii) and (b)(1)(iii) of this section. The limits depend upon the height above average terrain of the control transmitter antenna and the distance between the control transmitter and the nearest protected TV station location in paragraph (b)(1)(i) of this section.

(i) The protected TV station locations are as follows:

urban area that transmit on channels in the 482-488 MHz range.

(iii) Tables E-5 and E-6 apply to all control transmitters except those to which Tables E-3 and E-4 apply.

(2) *Adjacent channel protection.* The ERP of control transmitters must not exceed the limits in Table E–7. The limits depend upon the height above average terrain of the control transmitter antenna and the distance between the control transmitter and the nearest protected TV station location listed in this paragraph. The protected TV station locations are as follows:

Control transmitter frequency range	Protected TV station location	TV channel
488–494 MHz:	Salisbury, MD 38°24'15" 75°34'45" ...	(16)
494–500 MHz:	Philadelphia, PA 40°02'30" 75°14'24"	(17)
500–506 MHz:	Washington, DC 38°57'49" 77°06'18"	(20)
506–512 MHz:	Harrisburg, PA 40°20'44" 76°52'09" ..	(21)

Control transmitter frequency range	Protected TV station location	TV channel
470–476 MHz:	Hanover, NH 43°42'30" 72°09'16" .....	(15)
	Madison, WI 43°03'01" 89°29'15" .....	(15)
	Champaign, IL 40°04'11" 87°54'45" ..	(15)
	San Diego, CA 32°41'48" 116°56'10"	(15)
	Lancaster, PA 40°15'45" 76°27'49" ...	(15)
476–482 MHz:	Parkersburg, WV 39°20'50" 81°33'56"	(15)
	South Bend, IN 41°36'20" 86°12'44"	(16)
	Pittsburgh, PA 40°26'46" 79°57'51" ...	(16)
482–488 MHz:	Mt. Pleasant, MI 43°34'24" 84°46'21"	(14)
	Scranton, PA 41°10'58" 75°52'21" .....	(16)
	Hanover, NH 43°42'30" 72°09'16" .....	(15)
	Fort Wayne, IN 41°05'35" 85°10'42"	(15)

(c) *Los Angeles area.* This paragraph applies only to control transmitters in the Los Angeles urban area that utilize an antenna height of 457 or more meters (1500 or more feet) above mean sea level. The ERP of such transmitters must not exceed the following limits:

Antenna height	ERP
AMSLL in meters (feet)	(Watts)
457 (1500) to 610 (2000) .....	155
611 (2001) to 762 (2500) .....	100
763 (2501) to 914 (3000) .....	70
915 (3001) to 1067 (3500) .....	50
1068 (3501) to 1219 (4000) .....	40
1220 (4001) to 1372 (4500) .....	30
1373 (4501) and above .....	25

TABLE E–3.—MAXIMUM ERP (WATTS) FOR CONTROL TRANSMITTERS (HAAT 152 METERS OR LESS)

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)									
	15 (50)	30 (100)	46 (150)	61 (200)	76 (250)	91 (300)	107 (350)	122 (400)	137 (450)	152 (500)
209 (130) .....	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
201 (125) .....	1000	1000	1000	1000	1000	1000	1000	850	750	725
193 (120) .....	1000	1000	1000	1000	1000	900	750	675	600	550
185 (115) .....	1000	1000	800	725	600	525	475	425	375	350
177 (110) .....	850	700	600	500	425	375	325	300	275	225
169 (105) .....	600	475	400	325	275	250	225	200	175	150
161 (100) .....	400	325	275	225	175	150	140	125	110	100
153 (95) .....	275	225	175	125	110	95	80	70	60	50
145 (90) .....	175	125	100	75	50	.....	.....	.....	.....	.....

See §22.627(b)(1)(ii). This table is for antenna heights of 152 meters (500 feet) or less above average terrain. For antenna heights between those in the table, use the next higher antenna height. For distances between those in the table, use the next lower distance.

TABLE E–4.—MAXIMUM ERP (WATTS) FOR CONTROL TRANSMITTERS (HAAT MORE THAN 152 METERS)

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)					
	152 (500)	305 (1000)	457 (1500)	610 (2000)	762 (2500)	914 (3000)
209 (130) .....	1000	447	219	117	71	46
193 (120) .....	500	209	95	50	30	19
177 (110) .....	225	91	35	19	11	8
161 (100) .....	100	30	10	5	3	2
153 (95) .....	50	13	5	3	2	1

See §22.627(b)(1)(ii). This table is for antenna heights of more than 152 meters (500 feet) above average terrain. For intermediate values of height and/or distance, use linear interpolation to obtain the maximum permitted ERP.

TABLE E-5.—MAXIMUM ERP (WATTS) FOR CONTROL TRANSMITTERS (HAAT 152 METERS OR LESS)

Distance to protected TV station in kilometers (miles)	Antenna Height Above Average Terrain in meters (feet)									
	15 (50)	30 (100)	46 (150)	61 (200)	76 (250)	91 (300)	107 (350)	122 (400)	137 (450)	152 (500)
261 (162) .....	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
257 (160) .....	1000	1000	1000	1000	1000	1000	1000	1000	1000	800
249 (155) .....	1000	1000	1000	1000	1000	875	775	700	625	575
241 (150) .....	1000	1000	950	775	725	625	550	500	450	400
233 (145) .....	850	750	650	575	500	440	400	350	320	300
225 (140) .....	600	575	465	400	350	300	275	250	230	225
217 (135) .....	450	400	335	300	255	240	200	185	165	150
209 (130) .....	350	300	245	200	185	160	145	125	120	100
201 (125) .....	225	200	170	150	125	110	100	90	80	75
193 (120) .....	175	150	125	105	90	80	70	60	55	50

AAAAASee § 22.627(b)(1)(iii). This table applies for antenna heights of 152 meters (500 feet) or less above average terrain. For antenna heights between those in the table, use the next higher antenna height. For distances between those in the table, use the next lower distance.

TABLE E-6.—MAXIMUM ERP (Watts) FOR CONTROL TRANSMITTERS (HAAT MORE THAN 152 METERS)

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)					
	152 (500)	305 (1000)	457 (1500)	610 (2000)	762 (2500)	914 (3000)
261 (162) .....	1000	501	282	170	110	71
241 (150) .....	400	209	110	60	36	23
225 (140) .....	225	102	50	28	16	10
209 (130) .....	100	48	21	11	7	5
193 (120) .....	50	19	9	5	3	2

AAAAASee § 22.627(b)(1)(iii). This table is for antenna heights of more than 152 meters (500 feet) above average terrain. For intermediate values of height and/or distance, use linear interpolation to obtain the maximum permitted ERP.

TABLE E-7.—MAXIMUM ERP (WATTS) FOR CONTROL TRANSMITTERS

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)									
	30 (100)	46 (150)	61 (200)	76 (250)	91 (300)	107 (350)	122 (400)	137 (450)	152 (500)	
108 (67) .....	1000	1000	1000	1000	1000	1000	1000	1000	1000	
106 (66) .....	1000	1000	1000	1000	1000	1000	1000	1000	750	
105 (65) .....	1000	1000	1000	1000	1000	1000	825	650	600	
103 (64) .....	1000	1000	1000	1000	1000	775	625	500	400	
101 (63) .....	1000	1000	1000	1000	440	400	350	320	300	
100 (62) .....	1000	1000	1000	525	375	250	200	150	125	
98 (61) .....	1000	700	450	250	200	125	100	75	50	
97 (60) .....	1000	425	225	125	100	75	50	.....	.....	

See § 22.627(b)(2). This table applies to control transmitters in the Boston, Chicago, Cleveland, Detroit, Los Angeles, New York-Northeastern New Jersey, Philadelphia, Pittsburgh and Washington, DC urban areas. This table is for antenna heights of 152 meters (500 feet) or less above average terrain. For antenna heights between those in the table, use the next higher antenna height. For distances between those in the table, use the next lower distance.

[59 FR 59507, Nov. 17, 1994; 60 FR 9890, Feb. 22, 1995]

470-512 MHz TRUNKED MOBILE OPERATION

**§ 22.651 470-512 MHz channels for trunked mobile operation.**

The following channels are allocated for assignment to transmitters providing trunked public mobile service within the specified urban areas. All channels have a bandwidth of 20 kHz and

are designated by their center frequencies in MegaHertz.

Houston

488.0125 .....	491.0125	488.0875 .....	491.0875
488.0375 .....	491.0375	488.1125 .....	491.1125
488.0625 .....	491.0625	488.1375 .....	491.1375

New York-Northern New Jersey

473.0125 .....	479.0125	473.1625 .....	479.1625
473.0375 .....	479.0375	473.1875 .....	479.1875
473.0625 .....	479.0625	473.2125 .....	479.2125
473.0875 .....	479.0875	473.2375 .....	479.2375
473.1125 .....	479.1125	473.2625 .....	479.2625
473.1375 .....	479.1375	473.2875 .....	479.2875

§ 22.653

[59 FR 59507, Nov. 17, 1994; 60 FR 9891, Feb. 22, 1995]

**§22.653 Eligibility.**

Only licensees already authorized to provide trunked mobile service or their successors in interest are eligible to apply for additional use of these channels for trunked mobile service, and then only in the urban areas already authorized.

**§22.655 Channel usage.**

The FCC is redesignating the public mobile channels in the 470-512 MHz range from trunked mobile operation to point-to-multipoint operation as the demand for trunked mobile service decreases.

(a) The licensees in each market shall measure channel usage at least once every 3 months. These measurements shall be reported to the FCC within 30 days. Measurements shall be taken during the busiest 12-hour periods on 3 days (within a 7-day period) having normal usage. The information must be reported separately for each of the 3 days selected, must be reported by dates, and must disclose the following:

- (1) The number of mobile units in service during each of the days specified;
- (2) The number of calls completed each hour;
- (3) The total number of minutes during each hour that the channels were utilized for communications by the mobile units;
- (4) The average channel usage for the busiest hour for the 3 days measured; and
- (5) Any additional information that more accurately reflects channel usage.

(b) If the measured probability of blocking decreases below 25%, the FCC will redesignate channels not needed to maintain blocking at 25% or less. The number of channels needed to maintain blocking below 25% will be determined from the channel usage reports and the Erlang C tables.

(c) Although two or more channels are necessary to provide trunked service, the FCC may, pursuant to this section, reduce to one the number of channels assigned. In such cases, the li-

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censee may provide non-trunked two-way public mobile service on the one remaining channel.

**§22.657 Transmitter locations.**

The purpose of the rules in paragraphs (a) and (b) of this section is to define the areas in which the 470-512 MHz channels are allocated for public mobile use. The purpose of the rules in paragraphs (c) through (f) of this section is to reduce the likelihood that interference to television reception from public mobile operations on these channels will occur. The protected TV station locations specified in paragraphs (d), (e)(1) and (f) of this section are the locations of record as of September 1974, and these do not change even though the TV stations may have been subsequently relocated.

(a) *Base transmitter locations.* Base transmitter locations must be within 80 kilometers (50 miles) of the designated locations in this paragraph. Mobile transmitters must not be operated at locations more than 129 kilometers (80 miles) from the designated locations in this paragraph.

Urban area	N. latitude	W. longitude
Houston, TX .....	29°45'26"	95°21'37"
New York, NY-NE NJ .....	40°45'06"	73°59'39"

(b) *Mobile area of operation.* Mobile transmitters must not be operated at locations more than 48 kilometers (30 miles) from all associated base stations.

(c) *Protection from intermodulation interference.* Base transmitter locations must be at least 1.6 kilometers (1 mile) from the current main transmitter locations of all TV stations transmitting on TV channels separated by 2, 3, 4, 5, 7, or 8 TV channels from the TV channel containing the frequencies on which the base station will transmit. This requirement is intended to reduce the likelihood of intermodulation interference.

(d) *Adjacent channel protection from mobile transmitters.* Base transmitter locations must be at least 145 kilometers (90 miles) from the applicable protected TV station locations specified in this paragraph. This requirement is intended to provide a 0 dB minimum desired to undesired signal strength ratio

at the Grade B contour of an adjacent channel TV station.

Mobile transmitter frequency range	Protected TV station location	TV channel
470–476 MHz.	Lancaster, PA 40°15'45" 76°27'49" ...	(15)
476–482 MHz.	Scranton, PA 41°10'58" 75°52'21" .....	(16)

(e) *Co-channel protection from mobile transmitters.* Base transmitter locations must be at least the distance specified in paragraph (e)(2) of this section from the applicable protected TV station locations specified in paragraph (e)(1) of this section. This requirement is intended to provide a 40 dB minimum desired to undesired signal strength ratio at the Grade B contour of a co-channel TV station.

(1) The protected TV station locations are as follows:

Mobile transmitter frequency range	Protected TV station location
470–476 MHz.	Washington, DC 38°57'17" 77°00'17".
476–482 MHz.	Lancaster, PA 40°15'45" 76°27'49".

(2) The required minimum distance depends upon the effective radiated power (ERP) of the most powerful mobile transmitter(s) in the system:

Mobile unit ERP (watts)	Minimum distance	
	Kilometers	Miles
60 .....	193	(120)
50 .....	185	(115)
25 .....	177	(110)
10 .....	169	(105)
5 .....	161	(100)

(f) *Co-channel protection from base transmitters with high antennas.* This paragraph applies only to base transmitter locations in the New York-Northeastern New Jersey urban area that utilize an antenna height of more than 152 meters (500 feet) above average terrain. The distance between the location of such a base transmitter and the applicable protected TV station location specified in this paragraph must equal or exceed the sum of the distance from the base transmitter location to the radio horizon in the direction of

the specified location and 89 kilometers (55 miles—representing the distance from the main transmitter location of the TV station to its Grade B contour in the direction of the base transmitter). The distance to the radio horizon is calculated as follows:

$$d = \sqrt{17 \times h}$$

where

d is the distance to the radio horizon in kilometers

h is the height of the antenna center of radiation above ground level in meters

Base transmitter frequency range	Protected TV station location
470–476 MHz.	Washington, DC 38°57'17" 77°00'17".
476–482 MHz.	Lancaster, PA 40°15'45" 76°27'49".

(g) The FCC may waive specific distance separation requirements of paragraphs (d) through (f) of this section if the applicant submits an engineering analysis which demonstrates that terrain effects and/or operation with less effective radiated power would satisfy the applicable minimum desired to undesired signal strength ratios at the Grade B contours of the protected TV stations. For this purpose, the Grade B contour of a TV station is deemed to be a circle with a 89 kilometer (55 mile) radius, centered on the protected TV station location, and along which the median TV signal field strength is 64 dBµV/m. In any showing intended to demonstrate compliance with the minimum desired to undesired signal ratio requirements of this section, all predicted field strengths must have been determined using the UHF TV propagation curves contained in part 73 of this chapter.

**§22.659 Effective radiated power limits.**

The purpose of the rules in this section, which limit effective radiated power (ERP), is to reduce the likelihood that interference to television reception from public mobile operations on these channels will occur. The protected TV station locations specified in this section are the locations of record

as of September 1974, and these do not change even though the TV stations may have been subsequently relocated.

(a) *Maximum ERP.* The ERP of base transmitters must not exceed 100 Watts under any circumstances. The ERP of mobile transmitters must not exceed 60 Watts under any circumstances.

(b) *Co-channel protection from base transmitters.* The ERP of base transmitters in the New York-Northeastern New Jersey urban area must not exceed the limits in the tables referenced in paragraphs (b)(2) and (b)(3) of this section. The limits depend upon the height above average terrain of the base transmitter antenna and the distance between the base transmitter and the nearest protected TV station location in paragraph (b)(1) of this section.

(1) The protected TV station locations are as follows:

Base transmitter frequency range	Protected TV station location
470–476 MHz.	Washington, DC 38°57'17" 77°00'17".
476–482 MHz.	Lancaster, PA 40°15'45" 76°27'49".

area that transmit on channels in the 476–482 MHz range.

(3) Tables E-10 and E-11 of this section apply to base transmitters in the New York-Northeastern New Jersey urban area that transmit on channels in the 470–476 MHz range.

(c) *Adjacent channel protection from base transmitters.* The ERP of base transmitters must not exceed the limits in Table E-12 of this section. The limits depend upon the height above average terrain of the base transmitter antenna and the distance between the base transmitter and the nearest protected TV station location specified in paragraph (c)(1) of this section.

(1) The protected TV station locations are as follows:

Base transmitter frequency range	Protected TV station location	TV channel
470–476 MHz.	Hanover, NH 43°42'30" 72°09'16" .....	(15)
	Lancaster, PA 40°15'45" 76°27'49" ...	(15)
	Scranton, PA 41°10'58" 75°52'21" .....	(16)
476–482 MHz.		
482–488 MHz.	Hanover, NH 43°42'30" 72°09'16" .....	(15)

(2) Tables E-8 and E-9 of this section apply to base transmitters in the New York-Northeastern New Jersey urban

(2) Table E-12 of this section applies to base transmitters in the New York-Northeastern New Jersey urban area.

TABLE E-8.—MAXIMUM ERP (WATTS) FOR BASE TRANSMITTERS (HAAT 152 METERS OR LESS)

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)									
	15 (50)	30 (100)	46 (150)	61 (200)	76 (250)	91 (300)	107 (350)	122 (400)	137 (450)	152 (500)
209 (130) .....	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
201 (125) .....	1000	1000	1000	1000	1000	1000	1000	850	750	725
193 (120) .....	1000	1000	1000	1000	900	750	675	600	550	500
185 (115) .....	1000	1000	800	725	600	525	475	425	375	350
177 (110) .....	850	700	600	500	425	375	325	300	275	225
169 (105) .....	600	475	400	325	275	250	225	200	175	150
161 (100) .....	400	325	275	225	175	150	140	125	110	100
153 (95) .....	275	225	175	125	110	95	80	70	60	50
145 (90) .....	175	125	100	75	50	.....	.....	.....	.....	.....

See §22.659(b)(2). This table is for antenna heights of 152 meters (500 feet) or less above average terrain. For antenna heights between those in the table, use the next higher antenna height. For distances between those in the table, use the next lower distance.

TABLE E-9.—MAXIMUM ERP (WATTS) FOR BASE TRANSMITTERS (HAAT MORE THAN 152 METERS)

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)					
	152 (500)	305 (1000)	457 (1500)	610 (2000)	762 (2500)	914 (3000)
209 (130) .....	1000	447	219	117	71	46
193 (120) .....	500	209	95	50	30	19
177 (110) .....	225	91	35	19	11	8
161 (100) .....	100	30	10	5	3	2



TABLE E-9.—MAXIMUM ERP (WATTS) FOR BASE TRANSMITTERS (HAAT MORE THAN 152 METERS)—Continued

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)					
	152 (500)	305 (1000)	457 (1500)	610 (2000)	762 (2500)	914 (3000)
153 (95) .....	50	13	5	3	2	1

See § 22.659(b)(2). This table is for antenna heights of more than 152 meters (500 feet) above average terrain. For intermediate values of height and/or distance, use linear interpolation to obtain the maximum permitted ERP.

TABLE E-10.—MAXIMUM ERP (WATTS) FOR BASE TRANSMITTERS (HAAT 152 METERS OR LESS)

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)									
	15 (50)	30 (100)	46 (150)	61 (200)	76 (250)	91 (300)	107 (350)	122 (400)	137 (450)	152 (500)
261 (162) .....	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
257 (160) .....	1000	1000	1000	1000	1000	1000	1000	1000	1000	800
249 (155) .....	1000	1000	1000	1000	1000	875	775	700	625	575
241 (150) .....	1000	1000	950	775	725	625	550	500	450	400
233 (145) .....	850	750	650	575	500	440	400	350	320	300
225 (140) .....	600	575	465	400	350	300	275	250	230	225
217 (135) .....	450	400	335	300	255	240	200	185	165	150
209 (130) .....	350	300	245	200	185	160	145	125	120	100
201 (125) .....	225	200	170	150	125	110	100	90	80	75
193 (120) .....	175	150	125	105	90	80	70	60	55	50

See § 22.659(b)(3). This table applies for antenna heights of 152 meters (500 feet) or less above average terrain. For antenna heights between those in the table, use the next higher antenna height. For distances between those in the table, use the next lower distance.

TABLE E-11.—MAXIMUM ERP (WATTS) FOR BASE TRANSMITTERS (HAAT More Than 152 METERS)

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)					
	152 (500)	305 (1000)	457 (1500)	610 (2000)	762 (2500)	914 (3000)
261 (162) .....	1000	501	282	170	110	71
241 (150) .....	400	209	110	60	36	23
225 (140) .....	225	102	50	28	16	10
209 (130) .....	100	48	21	11	7	5
193 (120) .....	50	19	9	5	3	2

See § 22.659(b)(3). This table is for antenna heights of more than 152 meters (500 feet) above average terrain. For intermediate values of height and/or distance, use linear interpolation to obtain the maximum permitted ERP.

TABLE E-12.—MAXIMUM ERP (WATTS) FOR BASE TRANSMITTERS

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)								
	30 (100)	46 (150)	61 (200)	76 (250)	91 (300)	107 (350)	122 (400)	137 (450)	152 (500)
108 (67) .....	1000	1000	1000	1000	1000	1000	1000	1000	1000
106 (66) .....	1000	1000	1000	1000	1000	1000	1000	1000	750
105 (65) .....	1000	1000	1000	1000	1000	1000	825	650	600
103 (64) .....	1000	1000	1000	1000	1000	775	625	500	400
101 (63) .....	1000	1000	1000	1000	440	400	350	320	300
100 (62) .....	1000	1000	1000	525	375	250	200	150	125
98 (61) .....	1000	700	450	250	200	125	100	75	50
97 (60) .....	1000	425	225	125	100	75	50	.....	.....

See § 22.659(c)(2). This table applies to base transmitters in the New York-Northeastern New Jersey urban areas. This table is for antenna heights of 152 meters (500 feet) or less above average terrain. For antenna heights between those in the table, use the next higher antenna height. For distances between those in the table, use the next lower distance.

## Subpart F—Rural Radiotelephone Service

### § 22.701 Scope.

The rules in this subpart govern the licensing and operation of stations and systems in the Rural Radiotelephone Service. The licensing and operation of these stations and systems is also subject to rules elsewhere in this part that apply generally to the Public Mobile Services. In case of conflict, however, the rules in this subpart govern.

### § 22.702 Eligibility.

Existing and proposed communications common carriers are eligible to hold authorizations to operate conventional central office, interoffice and rural stations in the Rural Radiotelephone Service. Only local exchange carriers that have been state certified to provide basic exchange telephone service (or others having state approval to provide such service) in the pertinent area are eligible to hold authorizations for Basic Exchange Telephone Radio Systems (BETRS). Subscribers are also eligible to hold authorizations to operate rural subscriber stations in the Rural Radiotelephone Service.

### § 22.703 Separate rural subscriber station authorization not required.

A separate authorization is not required for rural subscriber stations for which the effective radiated power does not exceed 60 Watts and for which FAA notification of construction or alteration of the antenna structure is not required (see criteria in § 17.7 of this chapter). Authority to operate such rural subscriber stations is conferred by the authorization of the central office or base station from which they receive service.

### § 22.705 Rural radiotelephone system configuration.

Stations in the Rural Radiotelephone Service are authorized to communicate as follows:

(a) Rural subscriber stations are authorized to communicate with and through the central office station(s) with which they are associated. However, where the establishment of a central office station in this service is

not feasible, rural subscriber stations may be authorized to communicate with and through a base station in the Paging and Radiotelephone Service.

(b) Central office stations may communicate only with rural subscriber stations.

(c) Interoffice stations may communicate only with other interoffice stations.

### § 22.709 Rural radiotelephone service application requirements.

In addition to information required by subparts B and D of this part, applications for authorization to operate a station in the Rural Radiotelephone Service must contain the applicable supplementary information described in this section.

(a) *Interoffice stations.* Applications for authority to operate a new interoffice station or to add transmitters or points of communications to an existing interoffice station must contain an exhibit demonstrating that the requested facilities would be used only for interconnecting central office stations and explaining why the use of alternative existing radio or wire facilities is not feasible.

(b) *Technical information required.* For each transmitter in the Rural Radiotelephone Service, the following information is required by FCC Form 600 Schedule B:

(1) Location description; city; county; state; geographical coordinates correct to  $\pm 1$  second, the datum used (NAD 27 or NAD 83), site elevation above mean sea level, proximity to adjacent market boundaries and international borders;

(2) Antenna manufacturer, model number and type, antenna height to tip above ground level, the height of the center of radiation of the antenna above the average terrain, the height of the antenna center of radiation above the average elevation of the terrain along each of the 8 cardinal radials, antenna gain in the maximum lobe, the beamwidth of the maximum lobe of the antenna, a polar plot of the horizontal gain pattern of the antenna, the electric field polarization of the wave emitted by the antenna when installed as proposed;

(3) The center frequency of each channel requested, the maximum effective radiated power, the effective radiated power in each of the cardinal radial directions, any non-standard emission types to be used, including bandwidth and modulation type, the transmitter classification (e.g. central office), and the locations and call signs, if any, of any fixed points of communication.

(c) *No landline facilities.* Each application for a central office station must contain an exhibit showing that it is impracticable to provide the required communication service by means of landline facilities.

(d) *Interference exhibit.* Applications for central office, interoffice and relay stations must include an exhibit identifying co-channel facilities and demonstrating, in accordance with §22.715 that the proposed station, if authorized, would not cause interference to the service of those co-channel facilities. This exhibit must:

(1) For UHF channels, identify each protected transmitter located within 108 kilometers (67 miles) of the proposed transmitter in directions in which the distance to the interfering contour is 76.4 kilometers (47.5 miles) or less, and within 178 kilometers (111 miles) of the proposed transmitter in directions in which the distance to the interfering contour exceeds 76.4 kilometers (47.5 miles); and identify each protected Basic Exchange Telephone Radio System central office transmitter in the rural Radiotelephone Service within 231 kilometers (144 miles).

(2) For VHF channels, identify each protected transmitter located within 135 kilometers (84 miles) of the proposed transmitter in directions in which the distance to the interfering contour is 93.3 kilometers (58 miles) or less, and within 178 kilometers (111 miles) of the proposed transmitter in directions in which the distance to the interfering contour exceeds 93.3 kilometers (58 miles).

(3) For each protected transmitter identified, show the results of distance calculations indicating that there would be no overlap of service and interfering contours, or alternatively, indicate that the licensee of or applicant for the protected transmitter and/

or the applicant, as required, have agreed in writing to accept any interference resulting from operation of the proposed transmitter.

(e) *Blocking probability.* Applications for authority to operate basic exchange telephone radio systems (BETRS) that request more than two channel pairs must include an exhibit containing calculations showing that the number of channels requested is the minimum necessary to achieve the required grade of service (in terms of blocking probability), and that there will be adequate spectrum available in the area to meet realistic estimates of current and future demand for paging, two-way mobile and rural radiotelephone services (see §22.719(c)). Applications for authority to operate new conventional rural radiotelephone systems that request more than two channel pairs must include a statement explaining why BETRS technology is not being proposed.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

**§22.711 Provision of information to applicants.**

Licenses in the Rural Radio Service must, upon request by a *bona-fide* prospective applicant, provide to such applicant the information required by §22.709 regarding the portion of the licensee's operations that potentially could affect, or be affected by, the prospective applicant's proposed station, if such information is not already on file with the FCC. This information must be provided to the *bona-fide* prospective applicant no later than 30 days after receipt of the information request.

[59 FR 59954, Nov. 21, 1994]

**§22.713 Construction period for rural radiotelephone stations.**

The construction period for stations in the Rural Radiotelephone Service is 12 months.

**§22.715 Technical channel assignment criteria for rural radiotelephone stations.**

Channels are assigned in the Rural Radiotelephone Service using the procedures in §22.567.

**§ 22.717 Procedure for mutually exclusive applications in the Rural Radiotelephone Service.**

Mutually exclusive applications in the Rural Radiotelephone Service, including those that are mutually exclusive with applications in the Paging and Radiotelephone Service, are processed in accordance with § 22.131 and with this section.

(a) Applications in the Rural Radiotelephone Service may be mutually exclusive with applications in the Paging and Radiotelephone Service if they seek authorization to operate facilities on the same channel in the same area, or the technical proposals are otherwise in conflict. See § 22.567.

(b) A modification application in either service filed on the earliest filing date may cause all later-filed mutually exclusive applications of any type in either service to be “cut off” (excluded from a same-day filing group) and dismissed, pursuant to § 22.131(c)(3)(ii) and § 22.131(c)(4).

(c) Competitive bidding will not be used as a selection procedure for any filing group that contains one or more applications for facilities in the Rural Radio Service. If a settlement between the applicants cannot be reached in a reasonable time, the applications may be designated for comparative consideration in a hearing. See § 22.131(c)(4)(ii).

[59 FR 59956, Nov. 21, 1994]

**§ 22.719 Additional channel policy for rural radiotelephone stations.**

The rules in this section govern the processing of applications for central office stations that request a rural radiotelephone channel pair when the applicant has applied for or been granted an authorization for other rural radiotelephone channel pairs in the same area. The general policy of the FCC is to promote effective use of the spectrum by encouraging the use of spectrum-efficient technologies (i.e. BETRS) and by assigning the minimum number of channels necessary to provide service.

(a) *Transmitters in same area.* Any central office station transmitter on any channel pair listed in § 22.725 is considered to be in the same area as another central office station trans-

mitter on any other channel pair listed in § 22.725 if the transmitting antennas are located within 10 kilometers (6.2 miles) of each other.

(b) *Initial channel pairs.* The FCC does not assign more than two channel pairs for new central office stations, unless there are more than eight rural subscriber stations to be served. Stations are considered to be new if there are no authorized transmitters on any channel listed in § 22.725 controlled by the applicant in the same geographic area.

(c) *Additional channel pairs.* Applications for central office station transmitters to be located in the same area as an authorized central office station controlled by the applicant, but to operate on a different channel pair(s) are considered as requests for additional channel pair(s) for the authorized central office station. The FCC may grant applications for additional channel pairs provided that the need for each additional channel pair (after the first two) is established and fully justified in terms of achieving the required grade of service (blocking probability), and the applicant demonstrates that there will still be adequate spectrum available in the area to meet realistic estimates of current and future demand for paging, two-way mobile and rural radiotelephone services. In the case of conventional rural radiotelephone central office stations, an explanation must be provided as to why BETRS technology is not being used instead of additional channel pairs.

CONVENTIONAL RURAL RADIOTELEPHONE STATIONS

**§ 22.725 Channels for conventional rural radiotelephone stations.**

The following channels are allocated for paired assignment to transmitters that provide conventional rural radiotelephone service. These channels may be assigned for use by central office or rural subscriber stations as indicated, and interoffice stations. These channels may be assigned also for use by relay stations in systems where it would be impractical to provide rural radiotelephone service without the use of relay stations. All channels have a bandwidth of 20 kHz and are designated

by their center frequencies in Mega-Hertz.

Central office	Rural subscriber	Central office	Rural subscriber
<b>VHF Channels</b>			
152.03 .....	158.49	152.57 .....	157.83
152.06 .....	158.52	152.60 .....	157.86
152.09 .....	158.55	152.63 .....	157.89
152.12 .....	158.58	152.66 .....	157.92
152.15 .....	158.61	152.69 .....	157.95
152.18 .....	158.64	152.72 .....	157.98
152.21 .....	158.67	152.75 .....	158.01
152.51 .....	157.77	152.78 .....	158.04
152.54 .....	157.80	152.81 .....	158.07
<b>UHF Channels</b>			
454.025 .....	459.025	454.350 .....	459.350
454.050 .....	459.050	454.375 .....	459.375
454.075 .....	459.075	454.400 .....	459.400
454.100 .....	459.100	454.425 .....	459.425
454.125 .....	459.125	454.450 .....	459.450
454.150 .....	459.150	454.475 .....	459.475
454.175 .....	459.175	454.500 .....	459.500
454.200 .....	459.200	454.525 .....	459.525
454.225 .....	459.225	454.550 .....	459.550
454.250 .....	459.250	454.575 .....	459.575
454.275 .....	459.275	454.600 .....	459.600
454.300 .....	459.300	454.625 .....	459.625
454.325 .....	459.325	454.650 .....	459.650

(a) The channels listed in this section are also allocated for assignment in the Paging and Radiotelephone Service.

(b) In Puerto Rico and the Virgin Islands, channels in the 154.04–154.46 MHz and 161.40–161.85 MHz frequency ranges may be assigned to transmitters providing rural radiotelephone service; channels in these ranges are also allocated for assignment in the International Fixed Public and Aeronautical Fixed radio services.

(c) In Alaska, channels 42.40, 44.10, 44.20 and 45.90 MHz are allocated for assignment to transmitters providing rural radiotelephone service using meteor burst propagation modes, subject to the provisions of § 22.729.

[59 FR 59507, Nov. 17, 1994; 60 FR 9891, Feb. 22, 1995]

**§ 22.727 Power limits for conventional rural radiotelephone transmitters.**

The transmitting power of transmitters operating on the channels listed in § 22.725 must not exceed the limits in this section.

(a) *Maximum ERP.* The effective radiated power (ERP) of central office and rural subscriber station transmitters must not exceed the applicable limits in this paragraph under any circumstances.

Frequency range (MHz)	Maximum ERP (watts)
152–153 .....	1400
157–159 .....	150
454–455 .....	3500
459–460 .....	150

(b) *Basic power limit.* Except as provided in paragraph (d) of this section, the ERP of central office station transmitters must not exceed 500 Watts.

(c) *Height-power limits.* Except as provided in paragraph (d) of this section, the ERP of central office station transmitters must not exceed the amount that would result in an average distance to the “service contour” of 41.6 kilometers (26 miles) for VHF channels or 30.7 kilometers (19 miles) for UHF channels. The average distance to the “service contour” is calculated by taking the arithmetic mean of the distances determined using the procedures specified in § 22.567 for the eight cardinal radial directions, excluding cardinal radial directions for which 90% or more of the distance so calculated is over water.

(d) *Encompassed interfering contour areas.* Central office station transmitters are exempt from the basic power and height-power limits of this section if the area within their interfering contours is totally encompassed by the interfering contours of operating co-channel central office station transmitters controlled by the same licensee. For the purpose of this paragraph, operating transmitters are authorized transmitters that are providing service to subscribers.

(e) *Adjacent channel protection.* The ERP of central office station transmitters must not exceed 500 Watts if they transmit on channel 454.025 MHz and are located less than 7 kilometers (4.3 miles) from any Private Radio Services station receiving on adjacent channel 454.000 MHz.

(f) *Meteor burst stations.* The transmitter output power for stations using meteor burst propagation modes must not exceed 2000 Watts for central office

stations and 500 Watts for rural subscriber stations.

**§ 22.729 Meteor burst propagation modes.**

The rules in this section govern stations in this service that use meteor burst propagation modes to provide rural radiotelephone service in Alaska.

(a) *Channel assignments.* The channels 42.40 and 44.10 MHz may be assigned to central office stations and rural subscriber stations, respectively, on a primary basis. The channels 44.20 and 45.90 MHz may be assigned to central office and rural subscriber stations, respectively, on a secondary basis to Private Radio services stations using meteor burst propagation modes.

(b) *Transmitting power.* The transmitter output power must not exceed 2000 Watts for central office stations and 500 Watts for rural subscriber stations.

(c) *Station locations.* Co-channel central office stations of different licensees must be at least 241 kilometers (150 miles) apart. A rural subscriber station and a central office station of different licensees must be at least 241 kilometers (150 miles) apart if the rural subscriber stations of the different licensees operate on the same channel. The FCC may waive the requirements of this paragraph if the affected users agree to a cooperative sharing arrangement.

(d) *Emission type.* Only type F1D emission is authorized.

(e) *Bandwidth.* The authorized bandwidth is 20 kHz.

(f) *Station identification.* Station identification is required only for the central office station.

(g) *Interference.* Stations authorized under the provisions of this section must not cause harmful interference to the service of stations in other radio services.

(h) *Developmental authorization.* Meteor burst communications systems may be authorized under developmental authorizations pursuant to § 22.419.

**§ 22.731 Emission limitations.**

Upon application for multichannel operation, the FCC may authorize emission bandwidths wider than those specified in § 22.357, provided that spectrum utilization is equal to or better

than that achieved by single channel operation.

**§ 22.733 Priority of service.**

Within the Rural Radiotelephone Service, the channels listed in § 22.725 are intended primarily for use in rendition of public message service between rural subscriber and central office stations and to provide radio trunking facilities between central offices. The channels may also be used, however, for the rendition of private leased-line communication service provided that such usage would not reduce or impair the extent or quality of communication service that would be available, in the absence of private leased-line service, to the general public receiving or subsequently requesting public message service from a central office.

**§ 22.737 Temporary fixed stations.**

The FCC may, upon proper application therefor, authorize the construction and operation of temporary fixed stations. Temporary fixed stations are to be used as rural subscriber, inter-office, or central office stations when those stations are unavailable or when service from those stations is disrupted by storms or emergencies.

(a) *Six month limitation.* If it is necessary for a temporary fixed station to remain at the same location for more than six months, the licensee of that station must apply for authorization to operate the station at the specific location at least 30 days before the end of the six month period.

(b) *International communications.* Communications between the United States and Canada or Mexico must not be carried using a temporary fixed station without prior authorization from the FCC. Licensees desiring to carry such communications should apply sufficiently in advance to allow for the time necessary to coordinate with Canada or Mexico.

BASIC EXCHANGE TELEPHONE RADIO SYSTEMS

**§ 22.757 Channels for basic exchange telephone radio systems.**

The channels listed in § 22.725 are also allocated for paired assignment to

transmitters in basic exchange telephone radio systems. In addition, the following channels are allocated for paired assignment to transmitters in basic exchange telephone radio systems. All channels have a bandwidth of 20 kHz and are designed by their center frequencies in MegaHertz.

UHF CHANNELS—SHARED WITH PRIVATE RADIO SERVICES

Rural subscriber	Central office	Rural subscriber	Central office
816.2375	861.2375	816.1125	861.1125
817.2375	862.2375	817.1125	862.1125
818.2375	863.2375	818.1125	863.1125
819.2375	864.2375	819.1125	864.1125
820.2375	865.2375	820.1125	865.1125
816.2125	861.2125	816.0875	861.0875
817.2125	862.2125	817.0875	862.0875
818.2125	863.2125	818.0875	863.0875
819.2125	864.2125	819.0875	864.0875
820.2125	865.2125	820.0875	865.0875
816.1875	861.1875	816.0625	861.0625
817.1875	862.1875	817.0625	862.0625
818.1875	863.1875	818.0625	863.0625
819.1875	864.1875	819.0625	864.0625
820.1875	865.1875	820.0625	865.0625
816.1625	861.1625	816.0375	861.0375
817.1625	862.1625	817.0375	862.0375
818.1625	863.1625	818.0375	863.0375
819.1625	864.1625	819.0375	864.0375
820.1625	865.1625	820.0375	865.0375
816.1375	861.1375	816.0125	861.0125
817.1375	862.1375	817.0125	862.0125
818.1375	863.1375	818.0125	863.0125
819.1375	864.1375	819.0125	864.0125
820.1375	865.1375	820.0125	865.0125

(a) Channels are assigned in groups, as listed in this section.

(b) Channel groups in the 816–865 Mhz frequency range are not assigned to Rural Radio Service stations located:

(1) Within 161 kilometers (100 miles) of the borders of the largest 54 MSAs (see §22.909).

(2) North of Line A or East of Line C; or,

(3) Within 110 kilometers (68 miles) of the Mexican border.

(c) Channel groups in the 816–865 MHz frequency range are not assigned to central office stations located within 113 kilometers (70 miles) of another station authorized to operate on the same channels or on channels with center frequencies offset by 12.5 kHz.

(d) Technical parameters governing the use of these channels are contained in subpart S of part 90 of this chapter.

(e) The Common Carrier Bureau coordinates the availability of channels

in the 816–865 MHz frequency range with the Private Radio Bureau.

[59 FR 59507, Nov. 17, 1994; 60 FR 9891, Feb. 22, 1995]

§ 22.759 Power limit for BETRS.

The effective radiated power of central office and rural subscriber station transmitters used in basic exchange telephone radio systems must not exceed the limits in this section.

(a) *Maximum ERP.* The effective radiated power (ERP) of central office and rural subscriber station transmitters in BETRS must not exceed the applicable limits in this paragraph under any circumstances.

Frequency range (MHz)	Maximum ERP (watts)
152–153	1400
157–159	150
454–455	3500
459–460	150

(b) *Height-power limit.* The ERP of central office stations in BETRS must not exceed the amount calculated as follows:

$$ERP_w = 557,418 + h_m^2$$

where  $ERP_w$  is the effective radiated power in Watts

$h_m$  is the average (eight cardinal radial) antenna height above average terrain in meters

Subpart G—Air-ground Radiotelephone Service

§ 22.801 Scope.

The rules in this subpart govern the licensing and operation of public air-ground radiotelephone stations and systems. The licensing and operation of these stations and systems is also subject to rules elsewhere in this part that apply generally to the Public Mobile services. In case of conflict, however, the rules in this subpart govern.

§ 22.803 Air-ground application requirements.

In addition to information required by Subparts B and D of this part, applications for authorization to operate an air-ground station or system in the Air-ground Radiotelephone Service

§ 22.805

must contain the applicable supplementary information described in this section.

(a) *Administrative information.* The following information is required by FCC Form 600, Schedule B or C (as applicable).

(1) The number of transmitter sites for which authorization is requested.

(2) The call sign(s) of other facilities in the same area that are ultimately controlled by the real party in interest to the application.

(b) *Technical information.* The following information is required by FCC Form 600, Schedule B.

(1) Location description, city; county; state; geographical coordinates correct to ±1 second, the datum used (NAD 27 or NAD 28), site elevation above mean sea level, proximity to adjacent market boundaries and international borders;

(2) Antenna manufacturer, model number and type, antenna height to tip above ground level, antenna gain in the maximum lobe, the electric field polarization of the wave emitted by the antenna when installed as proposed;

(3) The center frequency of each channel requested, the maximum effective radiated power, any non-standard emission types to be used, including bandwidth and modulation type and the transmitter classification (e.g. ground or signaling).

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

GENERAL AVIATION AIR-GROUND STATIONS

**§22.805 Channels for general aviation air-ground service.**

The following channels are allocated for the provision of radiotelephone service to airborne mobile subscribers in general aviation aircraft. These channels have a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz.

SIGNALLING CHANNEL PAIR	
Ground	Airborne mobile
454.675	459.675

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COMMUNICATION CHANNEL PAIRS

Ground	Airborne mobile
454.700	459.700
454.725	459.725
454.750	459.750
454.775	459.775
454.800	459.800
454.825	459.825
454.850	459.850
454.875	459.875
454.900	459.900
454.925	459.925
454.950	459.950
454.975	459.975

(a) Channel 454.675 MHz is assigned to each and every ground station, to be used only for automatically alerting airborne mobile stations of incoming calls.

(b) All airborne mobile channels are assigned for use by each and every airborne mobile station.

**§22.809 Transmitting power limits.**

The transmitting power of ground and airborne mobile transmitters operating on the channels listed in §22.805 must not exceed the limits in this section.

(a) *Ground station transmitters.* The effective radiated power of ground stations must not exceed 100 Watts and must not be less than 50 Watts, except as provided in §22.811.

(b) *Airborne mobile transmitters.* The transmitter power output of airborne mobile transmitters must not exceed 25 Watts and must not be less than 4 Watts.

**§22.811 Idle tone.**

Whenever a ground station transmitter authorized to transmit on any of the communications channels listed in §22.805 is available for service but is not providing service, a modulated signal must be continuously transmitted on the communication channel assigned to that transmitter. While this modulated signal is transmitted, the transmitter power must be between 10 and 20 dB lower than the normal transmitting power.

**§22.813 Technical channel pair assignment criteria.**

The rules in this section establish technical assignment criteria for the channel pairs listed in §22.805. These



criteria are intended to provide substantial service volumes over areas that have significant local and regional general aviation activity, while maintaining the continuous nationwide in-route coverage of the original geographical layout.

(a) *Distance separation for co-channel ground stations.* The FCC may grant an application requesting assignment of a communication channel pair to a proposed ground transmitter only if the proposed antenna location is at least 800 kilometers (497 miles) from the antenna location of the nearest co-channel ground transmitter in the United States, its territories and possessions; and 1000 kilometers (621 miles) from the antenna location of the nearest co-channel ground transmitter in Canada.

(b) *Dispersion.* The FCC may grant an application requesting assignment of a communication channel pair to a proposed ground transmitter only if there are no more than five different communication channel pairs already assigned to ground transmitters with antenna locations within a 320 kilometer (199 mile) radius of the proposed antenna location.

**§22.815 Construction period for general aviation ground stations.**

The construction period (see §22.142) for general aviation ground stations is 12 months.

**§22.817 Additional channel policies.**

The rules in this section govern the processing of applications for authority to operate a ground station transmitter on any ground station communication channel listed in §22.805 when the applicant has applied or been granted an authorization for other ground station communication channels in the same area. The general policy of the FCC is to assign one ground station communication channel in an area to a carrier per application cycle, up to a maximum of six ground station communication channels per area. That is, a carrier must apply for one ground station communication channel, receive the authorization, construct the station, and notify the FCC of commencement of service before applying for an additional ground station communication channel in that area.

(a) *Air-ground transmitters in same area.* Any transmitter on any of the ground station channels listed in §22.805 is considered to be in the same area as another transmitter on any ground station channel listed in §22.805 if it is located less than 350 kilometers (217 miles) from that transmitter.

(b) *Initial channel.* The FCC will not assign more than one ground station communication channel for new ground stations. Ground stations are considered to be new if there are no authorized ground station transmitters on any channel listed in §22.805 controlled by the applicant in the same area.

(c) *Additional channel.* Applications for ground transmitters to be located in the same area as an authorized ground station controlled by the applicant, but to operate on a different ground station communication channel, are considered as requesting an additional channel for the authorized station.

(d) *Amendment of pending application.* If the FCC receives and accepts for filing an application for a ground station transmitter to be located in the same area as a ground station transmitter proposed in a pending application previously filed by the applicant, but on a different ground station communication channel, the subsequent application is treated as a major amendment to change the technical proposal of the prior application. The filing date of any application so amended is the date the FCC received the subsequent application.

(e) *Dismissal of premature applications for additional channel.* If the FCC receives an application requesting an additional ground station communication channel for an authorized ground station prior to receiving notification that the station is providing service to subscribers on the authorized channel(s), the FCC may dismiss that application without prejudice.

(f) *Dismissal of applications for seventh channel.* If the FCC receives an application requesting an additional ground station communication channel for an authorized ground station which would, if granted, result in that station being assigned more than six ground station communication channels in the

same area, the FCC may dismiss that application without prejudice.

COMMERCIAL AVIATION AIR-GROUND SYSTEMS

**§ 22.819 AGRAS compatibility requirement.**

Except as provided in paragraph (a) of this section, stations transmitting on the channels listed in § 22.805 must operate in compliance with the technical and operational requirements contained in the document, “Technical Reference, Air-ground Radiotelephone Automated Service (AGRAS), System Operation and Equipment Characteristics”, dated April 12, 1985.

(a) Until January 1, 1996, stations may continue to operate in compliance with the previous standard adopted in Docket 16073.

(b) Copies of the document referenced in this section may be obtained from the FCC’s copying contractor.

**§ 22.821 Authorization for airborne mobile stations.**

An authorization separate from any ground station authorization is required for each airborne mobile station that operates on the channels listed in § 22.805. The operator of the airborne mobile station must apply for the authorization (FCC Form 409). The application must contain an affirmative representation that the applicant has made definite arrangements with a wireline common carrier for service and billing.

**§ 22.857 Channel plan for commercial aviation air-ground systems.**

The 849–851 and 894–896 MHz frequency ranges are allocated for block assignment to nationwide air-ground systems providing radiotelephone service to passengers aboard commercial aircraft. These frequency ranges may also be used to provide service to persons in general aviation or other aircraft. Ground stations transmit on channels in the 849–851 MHz range. Airborne mobile stations transmit on channels in the 894–896 MHz range. Systems using these channels must conform to the channel plan described in this section.

(a) *Channel blocks.* The spectrum allocated for commercial aviation air-ground systems is divided into ten channel blocks, numbered 1 through 10. All ground stations in each geographical area must use the same channel block for communication with airborne mobile stations in flight, in accordance with § 22.859.

(1) Each channel block is subdivided into 6 control channels labeled P-1 through P-6, and 29 communications channels labeled C-1 through C-29.

(2) The authorized channel bandwidths are as follows:

(i) Each control channel has a bandwidth of 3.2 kHz.

(ii) Each communications channel has a bandwidth of 6 kHz.

(b) The center frequencies (in Mega-Hertz) of the communications and control channels are listed in Tables G-1 and G-2 of this section.

TABLE G-1.—GROUND STATION CHANNELS

	Channel block									
	10	9	8	7	6	5	4	3	2	1
C-1	849.0055	849.2055	849.4055	849.6055	849.8055	850.0055	850.2055	850.4055	850.6055	850.8055
C-2	849.0115	849.2115	849.4115	849.6115	849.8115	850.0115	850.2115	850.4115	850.6115	850.8115
C-3	849.0175	849.2175	849.4175	849.6175	849.8175	850.0175	850.2175	850.4175	850.6175	850.8175
C-4	849.0235	849.2235	849.4235	849.6235	849.8235	850.0235	850.2235	850.4235	850.6235	850.8235
C-5	849.0295	849.2295	849.4295	849.6295	849.8295	850.0295	850.2295	850.4295	850.6295	850.8295
C-6	849.0355	849.2355	849.4355	849.6355	849.8355	850.0355	850.2355	850.4355	850.6355	850.8355
C-7	849.0415	849.2415	849.4415	849.6415	849.8415	850.0415	850.2415	850.4415	850.6415	850.8415
C-8	849.0475	849.2475	849.4475	849.6475	849.8475	850.0475	850.2475	850.4475	850.6475	850.8475
C-9	849.0535	849.2535	849.4535	849.6535	849.8535	850.0535	850.2535	850.4535	850.6535	850.8535
C-10	849.0595	849.2595	849.4595	849.6595	849.8595	850.0595	850.2595	850.4595	850.6595	850.8595
C-11	849.0655	849.2655	849.4655	849.6655	849.8655	850.0655	850.2655	850.4655	850.6655	850.8655
C-12	849.0715	849.2715	849.4715	849.6715	849.8715	850.0715	850.2715	850.4715	850.6715	850.8715
C-13	849.0775	849.2775	849.4775	849.6775	849.8775	850.0775	850.2775	850.4775	850.6775	850.8775
C-14	849.0835	849.2835	849.4835	849.6835	849.8835	850.0835	850.2835	850.4835	850.6835	850.8835

TABLE G-1.—GROUND STATION CHANNELS—Continued

	Channel block									
	10	9	8	7	6	5	4	3	2	1
C-15	849.0895	849.2895	849.4895	849.6895	849.8895	850.0895	850.2895	850.4895	850.6895	850.8895
C-16	849.0955	849.2955	849.4955	849.6955	849.8955	850.0955	850.2955	850.4955	850.6955	850.8955
C-17	849.1015	849.3015	849.5015	849.7015	849.9015	850.1015	850.3015	850.5015	850.7015	850.9015
C-18	849.1075	849.3075	849.5075	849.7075	849.9075	850.1075	850.3075	850.5075	850.7075	850.9075
C-19	849.1135	849.3135	849.5135	849.7135	849.9135	850.1135	850.3135	850.5135	850.7135	850.9135
C-20	849.1195	849.3195	849.5195	849.7195	849.9195	850.1195	850.3195	850.5195	850.7195	850.9195
C-21	849.1255	849.3255	849.5255	849.7255	849.9255	850.1255	850.3255	850.5255	850.7255	850.9255
C-22	849.1315	849.3315	849.5315	849.7315	849.9315	850.1315	850.3315	850.5315	850.7315	850.9315
C-23	849.1375	849.3375	849.5375	849.7375	849.9375	850.1375	850.3375	850.5375	850.7375	850.9375
C-24	849.1435	849.3435	849.5435	849.7435	849.9435	850.1435	850.3435	850.5435	850.7435	850.9435
C-25	849.1495	849.3495	849.5495	849.7495	849.9495	850.1495	850.3495	850.5495	850.7495	850.9495
C-26	849.1555	849.3555	849.5555	849.7555	849.9555	850.1555	850.3555	850.5555	850.7555	850.9555
C-27	849.1615	849.3615	849.5615	849.7615	849.9615	850.1615	850.3615	850.5615	850.7615	850.9615
C-28	849.1675	849.3675	849.5675	849.7675	849.9675	850.1675	850.3675	850.5675	850.7675	850.9675
C-29	849.1735	849.3735	849.5735	849.7735	849.9735	850.1735	850.3735	850.5735	850.7735	850.9735
P-6	849.1813	849.3813	849.5813	849.7813	849.9813	850.1813	850.3813	850.5813	850.7813	850.9813
P-5	849.1845	849.3845	849.5845	849.7845	849.9845	850.1845	850.3845	850.5845	850.7845	850.9845
P-4	849.1877	849.3877	849.5877	849.7877	849.9877	850.1877	850.3877	850.5877	850.7877	850.9877
P-3	849.1909	849.3909	849.5909	849.7909	849.9909	850.1909	850.3909	850.5909	850.7909	850.9909
P-2	849.1941	849.3941	849.5941	849.7941	849.9941	850.1941	850.3941	850.5941	850.7941	850.9941
P-1	849.1973	849.3973	849.5973	849.7973	849.9973	850.1973	850.3973	850.5973	850.7973	850.9973

TABLE G-2.—AIRBORNE MOBILE STATION CHANNELS

	Channel block									
	10	9	8	7	6	5	4	3	2	1
C-1	894.0055	894.2055	894.4055	894.6055	894.8055	895.0055	895.2055	895.4055	895.6055	895.8055
C-2	894.0115	894.2115	894.4115	894.6115	894.8115	895.0115	895.2115	895.4115	895.6115	895.8115
C-3	894.0175	894.2175	894.4175	894.6175	894.8175	895.0175	895.2175	895.4175	895.6175	895.8175
C-4	894.0235	894.2235	894.4235	894.6235	894.8235	895.0235	895.2235	895.4235	895.6235	895.8235
C-5	894.0295	894.2295	894.4295	894.6295	894.8295	895.0295	895.2295	895.4295	895.6295	895.8295
C-6	894.0355	894.2355	894.4355	894.6355	894.8355	895.0355	895.2355	895.4355	895.6355	895.8355
C-7	894.0415	894.2415	894.4415	894.6415	894.8415	895.0415	895.2415	895.4415	895.6415	895.8415
C-8	894.0475	894.2475	894.4475	894.6475	894.8475	895.0475	895.2475	895.4475	895.6475	895.8475
C-9	894.0535	894.2535	894.4535	894.6535	894.8535	895.0535	895.2535	895.4535	895.6535	895.8535
C-10	894.0595	894.2595	894.4595	894.6595	894.8595	895.0595	895.2595	895.4595	895.6595	895.8595
C-11	894.0655	894.2655	894.4655	894.6655	894.8655	895.0655	895.2655	895.4655	895.6655	895.8655
C-12	894.0715	894.2715	894.4715	894.6715	894.8715	895.0715	895.2715	895.4715	895.6715	895.8715
C-13	894.0775	894.2775	894.4775	894.6775	894.8775	895.0775	895.2775	895.4775	895.6775	895.8775
C-14	894.0835	894.2835	894.4835	894.6835	894.8835	895.0835	895.2835	895.4835	895.6835	895.8835
C-15	894.0895	894.2895	894.4895	894.6895	894.8895	895.0895	895.2895	895.4895	895.6895	895.8895
C-16	894.0955	894.2955	894.4955	894.6955	894.8955	895.0955	895.2955	895.4955	895.6955	895.8955
C-17	894.1015	894.3015	894.5015	894.7015	894.9015	895.1015	895.3015	895.5015	895.7015	895.9015
C-18	894.1075	894.3075	894.5075	894.7075	894.9075	895.1075	895.3075	895.5075	895.7075	895.9075
C-19	894.1135	894.3135	894.5135	894.7135	894.9135	895.1135	895.3135	895.5135	895.7135	895.9135
C-20	894.1195	894.3195	894.5195	894.7195	894.9195	895.1195	895.3195	895.5195	895.7195	895.9195
C-21	894.1255	894.3255	894.5255	894.7255	894.9255	895.1255	895.3255	895.5255	895.7255	895.9255
C-22	894.1315	894.3315	894.5315	894.7315	894.9315	895.1315	895.3315	895.5315	895.7315	895.9315
C-23	894.1375	894.3375	894.5375	894.7375	894.9375	895.1375	895.3375	895.5375	895.7375	895.9375
C-24	894.1435	894.3435	894.5435	894.7435	894.9435	895.1435	895.3435	895.5435	895.7435	895.9435
C-25	894.1495	894.3495	894.5495	894.7495	894.9495	895.1495	895.3495	895.5495	895.7495	895.9495
C-26	894.1555	894.3555	894.5555	894.7555	894.9555	895.1555	895.3555	895.5555	895.7555	895.9555
C-27	894.1615	894.3615	894.5615	894.7615	894.9615	895.1615	895.3615	895.5615	895.7615	895.9615
C-28	894.1675	894.3675	894.5675	894.7675	894.9675	895.1675	895.3675	895.5675	895.7675	895.9675
C-29	894.1735	894.3735	894.5735	894.7735	894.9735	895.1735	895.3735	895.5735	895.7735	895.9735
P-6	894.1813	894.3813	894.5813	894.7813	894.9813	895.1813	895.3813	895.5813	895.7813	895.9813
P-5	894.1845	894.3845	894.5845	894.7845	894.9845	895.1845	895.3845	895.5845	895.7845	895.9845
P-4	894.1877	894.3877	894.5877	894.7877	894.9877	895.1877	895.3877	895.5877	895.7877	895.9877
P-3	894.1909	894.3909	894.5909	894.7909	894.9909	895.1909	895.3909	895.5909	895.7909	895.9909
P-2	894.1941	894.3941	894.5941	894.7941	894.9941	895.1941	895.3941	895.5941	895.7941	895.9941
P-1	894.1973	894.3973	894.5973	894.7973	894.9973	895.1973	895.3973	895.5973	895.7973	895.9973

**§ 22.859 Geographical channel block layout.**

Except as provided in paragraphs (a) and (b) of this section, ground station locations must be within 1.61 kilometers (one mile) of the locations list-

ed in this paragraph. The channel block allotted for each location must be used to provide service to airborne mobile stations in flight and may be used to provide service to airborne mobile stations on ground.

Location	N. latitude	W. longitude	Chan- nel block
<b>Alaska:</b>			
Anchorage .....	61°11'06"	149°54'42"	8
Cordova .....	60°33'00"	145°43'00"	5
Ketchikan .....	55°21'20"	131°42'33"	5
Juneau .....	58°21'18"	134°34'30"	4
Sitka .....	57°03'30"	135°22'01"	7
Yakutat .....	59°30'30"	142°30'00"	8
Alabama: Birmingham .....	33°23'24"	86°39'59"	2
<b>Arizona:</b>			
Phoenix .....	33°35'39"	112°05'12"	4
Winslow .....	35°01'17"	110°43'02"	6
Arkansas: Pine Bluff .....	34°10'56"	91°56'18"	8
<b>California:</b>			
Blythe .....	33°36'39"	114°42'24"	10
Eureka .....	40°42'59"	124°12'09"	8
Los Angeles .....	33°56'45"	118°23'03"	4
Oakland .....	37°51'12"	122°12'30"	1
San Francisco .....	37°41'15"	122°26'01"	6
Visalia .....	36°19'36"	119°23'22"	7
<b>Colorado:</b>			
Colorado Springs .....	38°44'39"	104°51'46"	8
Denver .....	39°46'45"	104°50'49"	1
Hayden .....	40°29'04"	107°13'08"	6
<b>Florida:</b>			
Miami .....	25°48'27"	80°16'30"	4
Orlando .....	28°26'53"	81°22'00"	2
Tallahassee .....	30°24'02"	84°21'18"	7
<b>Georgia:</b>			
Atlanta .....	33°39'05"	84°25'54"	5
St. Simon Island .....	31°09'22"	81°23'14"	6
Hawaii: Mauna Kapu .....	21°24'24"	158°06'02"	5
<b>Idaho:</b>			
Blackfoot .....	43°11'34"	112°20'57"	8
Caldwell .....	43°38'45"	116°38'44"	10
<b>Illinois:</b>			
Chicago .....	41°46'49"	87°45'20"	3
Kewanee .....	41°12'05"	89°57'33"	5
Schiller Park .....	41°57'18"	87°52'57"	2
Indiana: Fort Wayne .....	40°59'16"	85°11'31"	7
Iowa: Des Moines .....	41°31'58"	93°38'54"	1
<b>Kansas:</b>			
Garden City .....	37°59'35"	100°54'04"	3
Wichita .....	37°37'24"	97°27'15"	7
Kentucky: Fairdale .....	38°04'48"	85°47'33"	6
<b>Louisiana:</b>			
Kenner .....	30°00'44"	90°13'30"	3
Shreveport .....	32°27'09"	93°49'38"	5
Massachusetts: Boston .....	42°23'15"	71°01'03"	7
<b>Michigan:</b>			
Bellville .....	42°12'17"	83°29'09"	8
Flint .....	42°58'21"	83°44'22"	9
Sault Saint Marie .....	46°28'45"	84°21'31"	6
Minnesota: Bloomington .....	44°51'30"	93°13'19"	9
Mississippi: Meridian .....	32°19'10"	88°41'33"	9
<b>Missouri:</b>			
Kansas City .....	30°18'37"	94°41'07"	6
St Louis .....	38°42'45"	90°19'19"	4
Springfield .....	37°14'28"	93°22'54"	9
<b>Montana:</b>			
Lewistown .....	47°02'56"	109°27'27"	5
Miles City .....	46°25'30"	105°52'30"	8
Missoula .....	47°01'05"	114°00'41"	3
<b>Nebraska:</b>			
Grand Island .....	40°58'00"	98°19'11"	2

Location	N. latitude	W. longitude	Chan- nel block
Ogallala .....	41°07'11"	101°45'37"	4
Nevada:			
Las Vegas .....	36°05'35"	115°10'25"	1
Reno .....	39°25'13"	119°55'52"	3
Tonopah .....	38°03'43"	117°13'24"	9
Winnemucca .....	41°00'39"	117°45'58"	4
New Mexico:			
Alamogordo .....	32°54'46"	105°56'41"	8
Albuquerque .....	35°03'05"	106°37'13"	10
Aztec .....	36°48'42"	107°53'48"	9
Clayton .....	36°27'29"	103°11'16"	5
New Jersey: Woodbury .....	39°50'01"	75°09'21"	3
New York:			
E. Elmhurst .....	40°46'21"	73°52'42"	1
Schuyler .....	43°09'09"	75°07'50"	2
Staten Island .....	40°36'05"	74°06'35"	9
North Carolina:			
Greensboro .....	36°05'54"	70°56'42"	9
Wilmington .....	34°16'10"	77°54'24"	3
North Dakota: Dickinson .....	46°51'05"	102°47'35"	7
Ohio: Pataskala .....	40°04'38"	82°41'57"	1
Oklahoma:			
Warner .....	35°29'31"	95°18'25"	4
Woodward .....	36°24'42"	99°28'50"	9
Oregon:			
Albany .....	44°38'24"	123°03'36"	5
Klamath Falls .....	42°06'30"	121°38'00"	2
Pendleton .....	45°35'45"	118°31'02"	7
Pennsylvania:			
Coraopolis .....	40°30'33"	80°13'27"	4
New Cumberland .....	40°11'30"	76°52'02"	8
South Carolina: Charleston .....	32°54'10"	80°01'20"	4
South Dakota:			
Aberdeen .....	45°27'21"	98°25'26"	6
Rapid City .....	44°02'36"	103°03'36"	5
Tennessee:			
Elizabethton .....	36°26'04"	82°08'06"	7
Memphis .....	35°01'44"	89°56'15"	10
Nashville .....	36°08'44"	86°41'31"	3
Texas:			
Austin .....	30°16'37"	97°49'34"	2
Bedford .....	32°50'19"	97°08'03"	1
Houston .....	29°54'37"	95°24'39"	9
Lubbock .....	33°37'06"	101°52'14"	7
Monahans .....	31°34'58"	102°54'18"	6
Utah:			
Abajo Peak .....	37°50'21"	109°27'42"	7
Delta .....	39°23'15"	112°30'44"	2
Escalante .....	37°45'19"	111°52'27"	5
Green River .....	38°57'54"	110°13'40"	3
Salt Lake City .....	40°39'11"	112°12'06"	1
Virginia: Arlington .....	38°52'55"	77°06'18"	6
Washington:			
Seattle .....	47°26'08"	122°17'35"	4
Cheney .....	47°33'14"	117°43'35"	1
West Virginia: Charleston .....	38°19'47"	81°39'36"	2
Wisconsin: Stevens Point .....	44°33'06"	89°25'27"	8
Wyoming: Riverton .....	43°03'37"	108°27'23"	9

(a) Carriers authorized to construct and operate air-ground radiotelephone systems on the channels listed in §22.857 may also construct and operate low power ground stations designed to provide service to airborne mobile stations on the ground, provided that no interference is caused to service pro-

vided by ground stations located in accordance with the geographical channel block layout or with paragraph (b) of this section. The antenna location of each such low power ground station may be anywhere that is at least 483 kilometers (300 miles) from all antenna locations of ground stations using the

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same channel block(s) in accordance with the geographical channel block layout or with paragraph (b) of this section.

(b) Ground station locations may be more than 1.61 kilometers (one mile) from all of the locations listed in this section, provided that they are at least 885 kilometers (550 miles) from all antenna locations of ground stations using the same channel block(s) in accordance with the geographical channel block layout or with this paragraph.

**§ 22.861 Emission limitations.**

Any appropriate emission type may be used to provide air-ground radio-telephone service on the channels listed in § 22.857, provided that the emission limitations of this section are met.

(a) *Emission mask.* The emission mask described in this paragraph applies instead of those in § 22.359. The power of any emission in each of the adjacent channels must be at least 30 dB below the power of the total emission. The power of any emission in any of the channels other than the one being used and the adjacent channels must be at least 50 dB below the power of the total emission.

(b) *Airborne mobile transmitters.* The power of any emission in each of the adjacent channels must not exceed -130 dBm at any ground station receiver, assuming a 0 dBi receive antenna. The power of any emission in any of the channels other than the one being used and the adjacent channels must not exceed -148 dBm at any ground station receiver, assuming a 0 dBi receive antenna.

(c) *Ground station transmitters.* The effective radiated power (ERP) of any emission outside of the frequency ranges set forth in § 22.857 must not exceed -10 dBm. The ERP of any emission in each of the adjacent channels must not exceed +10 dBm. The ERP of any emission in any of the channels other than the one being used and the adjacent channels must not exceed -5 dBm.

(d) If an emission on any frequency outside of the authorized bandwidth causes harmful interference, the FCC may require greater attenuation of

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that emission than required in paragraph (a) of this section.

**§ 22.863 Transmitter frequency tolerance.**

Ground station transmitter frequencies must be maintained within 0.1 parts per million (ppm) of the channel reference or center frequencies. Doppler shift correction must be used to ensure that the frequencies of the signals of airborne mobile stations received at ground stations remain within 0.2 ppm of the channel reference or center frequencies.

**§ 22.865 Automatic channel selection procedures.**

Operation of stations using the channels listed in § 22.857 must be in accordance with the procedures in this section.

(a) A communications channel is not available for use by a ground station if it is already in use by another ground station at the same location. Ground station equipment must automatically determine whether channels are in use by other ground stations at the same location, and may employ radio frequency signal monitoring to do so. For example, a communications channel may be determined to be in use if the received signal power on that channel at the ground station exceeds -115 dBm, which, assuming a 0 dB gain 895 MHz receive antenna, corresponds to a field strength of approximately 19 dBµV/m. Ground stations may employ an alternative method of determining whether a communications channel is in use provided that such procedure is at least as reliable as radio frequency signal monitoring.

(b) Data indicating which communications channels are available for use are transmitted by ground stations on the assigned control channels.

(c) A call is originated when an airborne mobile station selects a communications channel based on the received data from ground stations and other factors, and transmits an identification code (which identifies the specific ground station from which service is requested) on the selected communications channel. The ground station from which service has been requested may

then obtain any necessary billing information and complete the call.

(d) A ground station may not transmit on a communications channel unless it has received the proper identification code. After a ground station has begun to transmit on a communications channel, that channel is not available to ground stations other than the one from which service has been requested until the call is terminated.

(e) A call is terminated by the ground station when either a hang-up signal is transmitted by the airborne mobile station, or the signal from the airborne mobile station on the communications channel is lost for a period of 15 continuous seconds. The hang-up signal is the on-off keying (50% duty cycle) of an unmodulated carrier over a period of one second with pulse duration of 5 milliseconds. However, if all carriers authorized to operate air-ground systems using the channels listed in §22.857 agree that an alternative hang-up signal and/or procedure would be more efficient or beneficial, such alternative hang-up signal and/or procedure may be used. The carriers must jointly give prior notification to the FCC if an alternative hang-up signal and/or procedure is used.

**§22.867 Effective radiated power limits.**

The effective radiated power (ERP) of ground and airborne stations operating on the channels listed in §22.857 must not exceed the limits in this section.

(a) The ERP of airborne mobile station transmitters must not exceed 30 Watts.

(b) The ERP of ground station transmitters must not exceed 100 Watts.

(c) The ERP of low power ground station transmitters operating pursuant to paragraph (a) of §22.859 must not exceed 1 Watt.

**§22.869 Assignment of control channels.**

The FCC selects and assigns exclusively one control channel to each commercial aviation air-ground licensee.

**§22.871 Control channel transition period.**

The rules in this section provide for a period of transition during which the experimental air-ground system operating on the channels listed in §22.857 will be discontinued and replaced by a system operating in full compliance with the rules in this subpart. The experimental system may continue to exclusively use a 3.2 kHz control channel contained within the bandwidth of communications channel C-2 of each channel block until September 9, 1996. After that date communications channel C-2 will be available for use by all carriers authorized to operate an air-ground system on the channels listed in §22.857.

**§22.873 Construction period for commercial aviation air-ground systems.**

Construction of a new commercial aviation air-ground system is considered to be completed for the purpose of this section and §22.142 when the number of ground stations specified in this section are constructed and operational.

(a) *Stage I.* At least 25 ground stations must be constructed and operational within 3 years. Licensees must notify the FCC (FCC Form 489) as soon as this requirement is met. Service to subscribers may commence as soon as the notification is mailed. If service to subscribers is not commenced at that time, the notification must contain a statement to this effect.

(b) *Stage II.* At least 50 ground stations must be constructed and operational within 5 years. Nationwide service to subscribers must commence within 5 years. Licensees must notify the FCC (FCC Form 489) as soon as these requirements are met.

**§22.875 Commercial aviation air-ground system application requirements.**

Existing and prospective common carriers may file applications for authority to construct and operate a new nationwide air-ground system on the channels listed in §22.857 only during window filing periods that may be announced by the FCC in Public Notices.

In addition to the requirements elsewhere in this part, such applications must contain the following exhibits:

(a) *Written agreement.* A signed agreement between the applicant and at least one airline or airline organization, authorizing the applicant to provide air-ground service on its aircraft.

(b) *Financial qualifications.* At the time of filing its application an applicant must demonstrate that it has either a firm financial commitment or available financial resources necessary to construct 50 ground stations and operate for one year after initiation of nationwide air-ground service its proposed air-ground system.

(1) The demonstration of commitment must include and be sufficient to cover the realistic and prudent estimated costs of construction of 50 ground stations, operation and other initial expenses for one year after initiation of nationwide air-ground service. The estimated costs, operation costs and other initial expenses must be itemized. The estimated costs must include the anticipated costs of construction of each ground station.

(2) The firm financial commitment required above must be obtained from a state or federally chartered bank or savings and loan association, or the financial affiliate or subsidiary of an equipment supplier, and must contain a statement that the lender:

(i) Has examined the financial condition of the applicant including audited financial statements, and has determined that the applicant is credit worthy;

(ii) That the lender is committed to providing a sum certain to the particular applicant;

(iii) That the lender's willingness to enter into the commitment is based solely on its relationship with the applicant; and

(iv) That the commitment is not in any way guaranteed by any entity other than the applicant.

(3) Applicants intending to rely on personal or internal resources must submit:

(i) Audited financial statements certified within one year of the date of the application, indicating the availability of sufficient net liquid assets to con-

struct and operate the proposed air-ground system for one year.

(A) The auditors must be certified public accountants.

(B) Net liquid assets is considered to be the excess of current assets (readily converted to cash) over current liabilities. In order to demonstrate ready convertibility into cash, the identity, liquidity and value of listed assets must be demonstrated. Non-liquid assets can be relied on if the marketability of those assets is documented.

(ii) An audited balance sheet, current within 60 days of filing, which clearly shows the continued availability of sufficient net liquid assets to construct and operate the proposed air-ground system for one year after nationwide service begins.

(c) *Service Plan.* A service plan containing:

(1) A map or other description of the planned geographic coverage area, including air space over the continental United States, Alaska, Hawaii and other United States territories.

(2) A schedule for construction of 50 ground stations and provision of nationwide service to subscribers within 5 years from the grant of the initial authorization.

(3) A description of how the system will interconnect with the landline telephone network and be integrated with other air-ground systems, including a statement as to whether the system will be interconnected with international air-ground systems.

(d) *Technical Exhibit.* A technical description of the proposed system demonstrating compliance with all applicable technical requirements and describing how the proposed system would operate, if authorized. This exhibit must provide the following information:

(1) The number of ground stations to be used, their locations, and the type and quantity of equipment proposed for the system;

(2) A complete description of the procedures and data protocols to be used on the control channel;

(3) The modulation types to be used and their spectral characteristics;

(4) The effective radiated power and transmitter peak envelope power for all transmitters at each ground station



location, and the effective radiated power of the airborne mobile stations;

(5) Antenna information as follows:

(i) For airborne mobile stations, the antenna type(s) to be used;

(ii) For ground stations, vertical and horizontal radiation patterns, antenna heights above ground level, antenna support structure heights above ground level, ground elevation above mean sea level and any relevant information (e.g. FAA approval) that may be helpful in determining whether ground station antennas require marking and lighting;

(6) Analytical data, including calculations, of potential interference within and without the spectrum for the air-ground system;

(7) A statement in compliance with the National Environmental Policy Act of 1969. See §§ 1.1301 through 1.1319 of this chapter.

### Subpart H—Cellular Radiotelephone Service

#### § 22.900 Scope.

The rules in this subpart govern the licensing and operation of cellular radiotelephone systems. Licensing and operation of these systems are also subject to rules elsewhere in this part that apply generally to the Public Mobile Services. In case of conflict, however, the rules in this subpart govern.

#### § 22.901 Cellular service requirements and limitations.

Cellular system licensees must provide cellular mobile radiotelephone service upon request to all cellular subscribers in good standing, including roamers, while such subscribers are located within any portion of the authorized cellular geographic service area (see § 22.911) where facilities have been constructed and mobile service to subscribers has commenced. A cellular system licensee may refuse or terminate service, however, subject to any applicable state or local requirements for timely notification to any subscriber who operates a cellular telephone in an airborne aircraft in violation of § 22.925 or otherwise fails to cooperate with the licensee in exercising operational control over mobile stations pursuant to § 22.927.

(a) *Service area information.* Licensees must inform prospective subscribers of the area in which reliable service can be expected.

(b) *Lack of capacity.* If a licensee refuses a request for cellular service because of a lack of system capacity, it must report that fact to the FCC in writing, explaining how it plans to increase capacity.

(c) *Dispatch service.* Cellular systems may provide dispatch service.

(d) *Alternative technologies and co-primary services.* Licensees of cellular systems may use alternative cellular technologies and/or provide fixed services on a co-primary basis with their mobile offerings, including personal communications services (as defined in Part 24 of this chapter) on the spectrum within their assigned channel block. Cellular carriers that provide mobile services must make such service available to subscribers whose mobile equipment conforms to the cellular system compatibility specification (see § 22.933).

(1) Licensees must perform or obtain an engineering analysis to ensure that interference to the service of other cellular systems will not result from the implementation of co-primary fixed services or alternative cellular technologies.

(2) Alternative technology and co-primary fixed services are exempt from the channeling requirements of § 22.905, the modulation requirements of § 22.915, the wave polarization requirements of § 22.367, the compatibility specification in § 22.933 and the emission limitations of §§ 22.357 and 22.917, except for emission limitations that apply to emissions outside the assigned channel block.

[59 FR 59507, Nov. 17, 1994; 59 FR 64856, Dec. 16, 1994, as amended at 60 FR 15495, Mar. 24, 1995; 61 FR 38403, July 24, 1996; 61 FR 45356, Aug. 29, 1996]

EFFECTIVE DATE NOTE: At 61 FR 45356, Aug. 29, 1996, § 22.901 was amended by revising the introductory text and paragraph (d), effective Oct. 28, 1996. For the convenience of the user the superseded text is set forth as follows:

#### § 22.901 Cellular service requirements and limitations.

Cellular system licensees must provide cellular mobile radiotelephone service upon request to all cellular subscribers in good

standing, including roamers, while such subscribers are located within any portion of the authorized cellular geographic service area (see §22.911) where facilities have been constructed and service to subscribers has commenced. A cellular system licensee may refuse or terminate service, however, subject to any applicable state or local requirements for timely notification, to any subscriber who operates a cellular telephone in an airborne aircraft in violation of §22.925 or otherwise fails to cooperate with the licensee in exercising operational control over mobile stations pursuant to §22.927.

\* \* \* \* \*

(d) *Alternative technologies and auxiliary services.* Licensees of cellular systems may use alternative cellular technologies and/or provide auxiliary common carrier services, including personal communications services (as defined in part 24 of this chapter) on the spectrum within their assigned channel block, provided that cellular service is available to subscribers whose mobile equipment conforms to the cellular system compatibility specification (see §22.933).

(1) Licensees must perform or obtain an engineering analysis to ensure that interference to the service of other cellular systems will not result from the implementation of auxiliary services or alternative cellular technologies.

(2) Alternative technology and auxiliary service operations are exempt from the channeling requirements of §22.905, the modulation requirements of §22.915, the wave polarization requirements of §22.367, the compatibility specification in §22.933 and the emission limitations of §§22.357 and 22.917, except for emission limitations that apply to emissions outside the assigned channel block.

**§22.903 Conditions applicable to former Bell Operating Companies.**

Ameritech Corporation, Bell Atlantic Corporation, BellSouth Corporation, NYNEX Corporation, Pacific Telesis Group, Southwestern Bell Corporation, U.S. West, Inc., their successors in interest and affiliated entities (BOCs) may engage in the provision of cellular service only in accordance with the conditions in this section, unless otherwise authorized by the FCC. BOCs may, subject to other provisions of law, have a controlling or lesser interest in or be under common control with separate corporations that provide cellular service only under the following conditions:

(a) *Access to landline facilities:* BOCs must not sell, lease or otherwise make

available to the separate corporation any transmission facilities that are used in any way for the provision of its landline telephone services, except on a compensatory, arm's-length basis. Separate corporations must not own any facilities for the provision of landline telephone service. Access to landline exchange and transmission facilities for the provision of cellular service must be obtained by separate corporations on the same terms and conditions as those facilities are made available to other entities.

(b) *Independence.* Separate corporations must operate independently in the provision of cellular service. Each separate corporation must—

(1) Maintain its own books of account;

(2) Have separate officers;

(3) Employ separate operating, marketing, installation and maintenance personnel; and,

(4) Utilize separate computer and transmission facilities in the provision of cellular services.

(c) *Research or development.* Any research or development performed by BOCs for separate corporations, either separately or jointly, must be on a compensatory basis.

(d) *Transactions.* All transactions between the separate corporation and the BOC or its affiliates that involve the transfer, either direct or by accounting or other record entries, of money, personnel, resources, other assets or any things of value, shall be reduced to writing. A copy of any contract, agreement or other arrangement entered between such entities with regard to interconnection with landline network exchange and transmission facilities must be filed with the FCC within thirty days after the contract, agreement, or other arrangement is made. A copy of all other contracts, agreements or arrangements between such entities shall be kept available by the separate corporation for inspection upon reasonable request by the FCC. The provision shall not apply to any transaction governed by the provision of an effective state or federal tariff.

(e) *Promotion.* BOCs must not engage in the sale or promotion of cellular

service on behalf of the separate corporation. However, this does not prohibit joint advertising or promotional efforts by the landline carrier and its cellular affiliate.

(f) *Proprietary information.* BOCs must not provide to any such separate corporation any customer proprietary information, unless such information is publicly available on the same terms and conditions.

(g) *Provision of other Public Mobile services.* Separate corporations may include, as part of their operations, the provision of other Public Mobile services.

**§22.905 Channels for cellular service.**

The following channels are allocated for block assignment in the Cellular Radiotelephone Service. All channels have a bandwidth of 40 kHz and are designed by their center frequencies in MegaHertz.

Base	Mobile	Base	Mobile
CHANNEL BLOCK A			
416 communication channel pairs			
869.040 .....	824.040	890.010 .....	845.010
869.070 .....	824.070	890.040 .....	845.040
879.990 .....	834.990	891.480 .....	846.480
21 control channel pairs			
	834.390 .....	879.390	
	834.420 .....	879.420	
	834.990 .....	879.990	
CHANNEL BLOCK B			
416 communication channel pairs			
880.020 .....	835.020	891.510 .....	846.510
880.050 .....	835.050	981.540 .....	846.540
889.980 .....	844.980	893.970 .....	848.970
21 control channel pairs			
	835.020 .....	880.020	
	835.050 .....	880.050	
	835.920 .....	880.620	

(a) Each channel block is assigned exclusively to one licensee for use in that licensee's cellular geographic service area (see §22.911).

(b) Licensees may use any channel pair from the assigned channel block at any of their transmitter locations, sub-

ject to the prior coordination requirements of §22.907.

[59 FR 59507, Nov. 17, 1994; 60 FR 9891, Feb. 22, 1995]

**§22.907 Coordination of channel usage.**

Licensees in the Cellular Radiotelephone Service must coordinate, with the appropriate parties, channel usage at each transmitter location within 121 kilometers (75 miles) of any transmitter locations authorized to other licensees or proposed by tentative selectees or other applicants, except those with mutually exclusive applications.

(a) Licensees must cooperate and make reasonable efforts to resolve technical problems that may inhibit effective and efficient use of the cellular radio spectrum; however, licensees are not obligated to suggest extensive changes to or redesign other licensees' cellular systems. Licensees must make reasonable efforts to avoid blocking the growth of other cellular systems that are likely to need additional capacity in the future.

(b) If technical problems are addressed by an agreement or operating arrangement between the licensees that would result in a reduction of quality or capacity of either system, the licensees must notify the FCC by letter.

**§22.909 Cellular markets.**

Cellular markets are standard geographic areas used by the FCC for administrative convenience in the licensing of cellular systems. Cellular markets comprise Metropolitan Statistical Areas (MSAs) and Rural Service Areas (RSAs). All cellular markets and the counties they comprise are listed in Public Notice Report No. CL-92-40 "Common Carrier Public Mobile Services Information, Cellular MSA/RSA Markets and Counties", dated January 24, 1992, DA 92-109, 7 FCC Rcd 742 (1992).

(a) *MSAs.* Metropolitan Statistical Areas are 306 areas, including New England County Metropolitan Areas and the Gulf of Mexico Service Area (water area of the Gulf of Mexico, border is the coastline), defined by the Office of Management and Budget, as modified by the FCC.

(b) *RSAs*. Rural Service Areas are 428 areas, other than MSAs, established by the FCC.

**§22.911 Cellular geographic service area.**

The Cellular Geographic Service Area (CGSA) of a cellular system is the geographic area considered by the FCC to be served by the cellular system. The CGSA is the area within which cellular systems are entitled to protection and within which adverse effects for the purpose of determining whether a petitioner has standing are recognized.

(a) *CGSA determination*. The CGSA is the composite of the service areas of all of the cells in the system, excluding any area outside the cellular market boundary, except as provided in paragraph (c) of this section, and excluding any area within the CGSA of another cellular system. The service area of a cell is the area within its service area boundary (SAB). The distance to the SAB is calculated as a function of effective radiated power (ERP) and antenna center of radiation height above average terrain (HAAT), height above sea level (HASL) or height above mean sea level (HAMSL).

(1) Except as provided in paragraphs (a)(2) and (b) of this section, the distance from a cell transmitting antenna to its SAB along each cardinal radial is calculated as follows:

$$d = 2.531 \times h^{0.34} \times p^{0.17}$$

where:

d is the radial distance in kilometers

h is the radial antenna HAAT in meters

p is the radial ERP in Watts

(2) For the cellular systems authorized to serve the Gulf of Mexico MSA, the distance from a cell transmitting antenna to its SAB along each cardinal radial is calculated as follows:

$$d = 6.895 \times h^{0.30} \times p^{0.15}$$

where:

d is the radial distance in kilometers

h is the radial antenna HAAT in meters

p is the radial ERP in Watts

(3) The value used for h in the formula in paragraph (a)(2) of this section must not be less than 8 meters (26 feet) HASL (or HAMSL, as appropriate for the support structure). The value used

for h in the formula in paragraph (a)(1) of this section must not be less than 30 meters (98 feet) HAAT, except that for unserved area applications proposing a cell with an ERP not exceeding 10 Watts, the value for h used in the formula in paragraph (a)(1) of this section to determine the service area boundary for that cell may be less than 30 meters (98 feet) HAAT, but not less than 3 meters (10 feet) HAAT.

(4) The value used for p in the formulas in paragraphs (a)(1) and (a)(2) of this section must not be less than 0.1 Watt or 27 dB less than (1/500 of) the maximum ERP in any direction, whichever is more.

(5) Whenever use of the formula in paragraph (a)(1) of this section pursuant to the exception contained in paragraph (a)(3) of this section results in a calculated distance that is less than 5.4 kilometers (3.4 miles), the radial distance to the service area boundary is deemed to be 5.4 kilometers (3.4 miles).

(6) The distance from a cell transmitting antenna to the SAB along any radial other than the eight cardinal radials is calculated by linear interpolation of distance as a function of angle.

NOTE to paragraph (a) of §22.911: On May 13, 1994, the United States Court of Appeals for the District of Columbia Circuit instructed the FCC to vacate the provisions of old §22.903(a), now §22.911(a), insofar as they apply to cellular systems licensed to serve the Gulf of Mexico MSA (GMSA), pending reconsideration of an issue remanded to the FCC in that decision. See *Petroleum Communications, Inc. v. Federal Communications Commission*, No. 92-1670 and *RVC Services, Inc., D/B/A Coastal Communications Company v. Federal Communications Commission*, No. 93-1016, \_\_\_ F.2d \_\_\_, \_\_\_ (D.C. Cir. 1994). Accordingly, notwithstanding the provisions of §22.911(a), until further notice, the authorized CGSAs of the cellular systems licensed to serve the GMSA are those which were authorized prior to January 11, 1993.

(b) *Alternative CGSA determination*. If a carrier believes that the method prescribed in paragraph (a) of this section produces a CGSA that departs significantly (±20% in the service area of any cell) from the geographical area where reliable cellular service is actually provided, the carrier may submit, as an

exhibit to an application for modification of the CGSA (FCC Form 600), a depiction of what the carrier believes the CGSA should be. Such submissions must be accompanied by one or more supporting propagation studies using methods appropriate for the 800–900 MHz frequency range, including all supporting data and calculations, and/or by extensive field strength measurement data. For the purpose of such submissions, cellular service is considered to be provided in all areas, including “dead spots”, between the transmitter location and the locus of points where the predicted or measured median field strength finally drops to 32 dB $\mu$ V/m (i.e. does not exceed 32 dB $\mu$ V/m further out). If, after consideration of such submissions, the FCC finds that adjustment to a CGSA is warranted, the FCC may grant the application.

(1) The alternative CGSA determination must define the CGSA in terms of distances from cell sites to cell SABs along the eight cardinal radials, with other points along the SAB determined in accordance with paragraph (a)(6) of this section. The distances used for the cardinal radials must be representative of the coverage within the 45° sectors, as depicted by the alternative CGSA determination.

(2) If an uncalibrated predictive model is used to depict the CGSA, the alternative CGSA determination must identify factors (e.g. terrain roughness or features) that could plausibly account for the difference between actual coverage and that defined by the formula in paragraph (a)(1) of this section. If actual measurements or a measurement-calibrated predictive model are used to depict the CGSA, and this fact is disclosed in the alternative CGSA determination, it is not necessary to offer an explanation of the difference between actual coverage and that defined by the formula in paragraph (a)(1) of this section. If the formula in paragraph (a)(1) of this section is clearly inapplicable for the cell(s) in question (e.g. for microcells), this should be disclosed in the alternative CGSA determination.

(3) The provision for alternative CGSA determinations was made in recognition that the formula in paragraph (a)(1) of this section is a general model

that provides a reasonable approximation of coverage in most land areas, but may substantially under-predict or over-predict coverage in specific areas with unusual terrain roughness or features, and may be inapplicable for certain purposes, e.g. cells with a radial distance to the SAB less than 8 kilometers (5 miles). In such cases, alternative methods that utilize more specific models are appropriate. Accordingly, the FCC does not consider use of the formula in paragraph (a)(1) of this section with parameters outside of the limits in paragraphs (a)(3), (a)(4) and (a)(5) of this section or with data for radials other than the cardinal radials to be a valid alternative method for determining the CGSA of a cellular system.

(c) *CGSA extension areas.* SAB extensions (areas outside of the cellular market boundary, but within the service area as calculated using the methods of paragraph (a) of this section) are part of the CGSA only under the following circumstances:

(1) During the five year build-out period of the system in the cellular market containing the extension, the licensees of systems on the same channel block in adjacent cellular markets may agree that the portion of the service area of one system that extends into unserved areas in the other system's cellular market is part of the CGSA of the former system.

(2) At the end of the five year build-out period of the system in the cellular market containing the extension, the portion of the service area that extends into unserved areas in another cellular market becomes part of the CGSA, provided that the licensee of the system so extended files a system information update in accordance with § 22.947(c).

(3) For original systems in MSAs, extensions of the CGSA authorized by the FCC are part of the CGSA to the extent authorized.

(d) *Protection afforded.* Within the CGSA determined in accordance with this section, cellular systems are entitled to protection from co-channel and first-adjacent channel interference and from capture of subscriber traffic by adjacent systems on the same channel block.

(1) Licensees must cooperate in resolving co-channel and first-adjacent channel interference by changing channels used at specific cells or by other technical means.

(2) Protection from capture of subscriber traffic is applied and limited in accordance with the following:

(i) Subscriber traffic is captured if an SAB of one cellular system overlaps the CGSA of another operating cellular system. Therefore, cellular licensees must not begin to operate any facility that would cause an SAB to overlap the existing CGSA of another cellular system on the same channel block, without first obtaining the written consent of the licensee of that system. However, cellular licensees may continue to operate existing facilities that produce an SAB overlapping a subsequently-authorized portion of the CGSA of another cellular system on the same channel block until the licensee of that system requests that the SAB be removed from its CGSA. Such request may be made directly to the licensee of the overlapping system or to the FCC. In the event such request is made, the licensee of the overlapping system must reduce the transmitting power or antenna height (or both) at the pertinent cell site as necessary to remove the SAB from the CGSA of the other system, unless a written consent from the licensee of the other system allowing the SAB to remain is obtained. Cellular licensees may enter into contracts with the licensees of other cellular systems on the same channel block to allow SABs to overlap CGSAs.

(ii) Cellular licensees are at most entitled to have a CGSA free of SABs from other cellular systems on the same channel block.

(e) *Unserved areas.* Unserved areas are areas outside of all existing CGSAs (on either of the channel blocks), to which the Communications Act of 1934, as amended, is applicable.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

**§22.912 Service area boundary extensions.**

This section contains rules governing service area boundary (SAB) extensions. SAB extensions are areas outside

of the cellular market boundary, but within the service area as calculated using the methods of §22.911(a). Cellular systems must be designed to comply with the rules in this section. Applications proposing systems that would not comply with the rules in this section are defective. Service within SAB extensions is not protected from interference or capture under §22.911(d) unless and until the area within the SAB extension becomes a part of the cellular geographic service area (CGSA) in accordance with §22.911(c).

(a) *De minimis extensions.* Except as restricted in paragraph (d) of this section, SABs may extend into adjacent cellular markets if such extensions are *de minimis*, are demonstrably unavoidable for technical reasons of sound engineering design, and do not extend into the CGSA of any other licensee's cellular system on the same channel block (unless the licensee of such other system consents to the extension) or into any adjacent cellular market on a channel block for which the five year build-out period has expired.

(b) *Contract extensions.* Except as restricted in paragraph (d) of this section, licensees of cellular systems on the same channel block in adjacent cellular markets may, at any time, enter into contracts with applicants or other licensees to allow SAB extensions into their CGSA only (not into unserved areas). Except as restricted in paragraph (d) of this section, licensees of the first authorized cellular systems on the same channel block in adjacent cellular markets may agree to allow SAB extensions into their CGSA and/or unserved areas in their cellular markets during the five year build-out period of the market into which the SAB extends.

(c) *Same applicant/licensee.* Except as restricted in paragraph (d) of this section, licensees of cellular systems that are also an applicant or licensee on the same channel block in adjacent cellular markets may, at any time, allow or propose SAB extensions from their adjacent market system into their CGSA only (not into unserved areas). Except as restricted in paragraph (d) of this section, licensees of the first authorized cellular systems that are also an applicant or licensee on the same

channel block in adjacent cellular markets may allow or propose SAB extensions from their adjacent market system into their CGSA and/or unserved areas in their cellular markets during the five year build-out period of the market into which the SAB extends.

(d) *Unserved area systems.* Phase I initial cellular applications must not propose SAB extensions. Phase I sole major modification applications and Phase II applications may propose SAB extensions, subject to the conditions in this section.

**§22.913 Effective radiated power limits.**

The effective radiated power (ERP) of transmitters in the Cellular Radiotelephone Service must not exceed the limits in this section.

(a) *Maximum ERP.* The effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 Watts. The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

(b) *Height-power limit.* The ERP of base transmitters must not exceed the amount that would result in an average distance to the service area boundary of 79.1 kilometers (49 miles) for cellular systems authorized to serve the Gulf of Mexico MSA and 40.2 kilometers (25 miles) for all other cellular systems. The average distance to the service area boundary is calculated by taking the arithmetic mean of the distances determined using the procedures specified in §22.911 for the eight cardinal radial directions.

(c) *Coordination exemption.* Licensees need not comply with the height-power limit in paragraph (b) of this section if the proposed operation is coordinated with the licensees of all affected cellular systems on the same channel block within 121 kilometers (75 miles) and concurrence is obtained.

**§22.915 Modulation requirements.**

Cellular systems must be capable of providing service using the types of modulation described in the cellular system compatibility specification.

(a) *Non-voice modulating signals.* Modulating signals other than voice signals, such as data signals, may be transmitted, provided the resulting

modulated emission exhibits spectral characteristics not exceeding those resulting from voice modulation.

(b) *Modulation levels.* The levels of the modulating signals must be set to the values specified in this paragraph, and must be maintained within  $\pm 10\%$  of those values.

(1) The instantaneous frequency deviation resulting from the main modulating signal must be  $\pm 12$  kHz.

(2) The instantaneous frequency deviation resulting from the supervisory audio tones must be  $\pm 2$  kHz.

(3) The instantaneous frequency deviation resulting from the signaling tone must be  $\pm 8$  kHz.

(4) The instantaneous frequency deviation resulting from wideband data signals must be  $\pm 8$  kHz.

(c) *Deviation limitation circuitry.* Cellular transmitters must be equipped with circuitry that automatically prevents modulation levels for voice transmissions from exceeding the limits specified in this section.

(d) *Audio filter characteristics.* Except as provided in §22.917, radiotelephony signals applied to the modulator from the modulation limiter must be attenuated as a function of frequency as specified in this paragraph.

(1) For mobile stations, these signals must be attenuated, relative to the level at 1 kHz, as follows:

(i) In the frequency ranges of 3.0 to 5.9 kHz and 6.1 to 15.0 kHz, signals must be attenuated by at least  $40 \log (f+3)$  dB, where  $f$  is the frequency of the signal in kHz.

(ii) In the frequency range of 5.9 to 6.1 kHz, signals must be attenuated at least 35 dB.

(iii) In the frequency range above 15 kHz, signals must be attenuated at least 28 dB.

(2) For base stations, these signals shall be attenuated, relative to the level at 1 kHz, as follows:

(i) In the frequency range of 3 to 15 kHz, signals must be attenuated by at least  $40 \log (f+3)$  dB, where  $f$  is the frequency of the signal in kHz.

(ii) In the frequency range above 15 kHz, signals must be attenuated by at least 28 dB.

(3) Filtering is not required for the supervisory audio tones, signaling tones or wideband data signals.

**§ 22.917 Emission limitations for cellular.**

The rules in this section govern the spectral characteristics of emissions in the Cellular Radiotelephone Service.

(a) *Analog radiotelephony emissions.* F3E emissions must be used only on the communication channels.

(b) *F3E/F3D emission mask for use with audio filter.* For F3E and F3D emissions, except as provided in paragraph (c) of this section, the mean power of emissions must be attenuated below the mean power of the unmodulated carrier wave (P) as follows:

(1) On any frequency removed from the carrier frequency by more than 20 kHz but not more than 45 kHz:  
at least 26 dB;

(2) On any frequency removed from the carrier frequency by more than 45 kHz, up to the first multiple of the carrier frequency:  
at least 60 dB or  $43 + 10 \log P$  dB, whichever is the lesser attenuation.

(c) *Alternative F3E/F3D emission mask.* For F3E and F3D emissions, transmitters may comply with the emission limitations in this paragraph in lieu of compliance with paragraph (b) of this section and the audio filter requirement of § 22.915.

(1) The mean power of any emission removed from the carrier frequency by a displacement frequency ( $f_d$  in kHz) must be attenuated below the mean power of the unmodulated carrier (P) as follows:

(i) On any frequency removed from the carrier frequency by more than 12 kHz but not more than 20 kHz:  
at least  $117 \log (f_d+12)$  dB;

(ii) On any frequency removed from the carrier frequency by more than 20 kHz, up to the first multiple of the carrier frequency:  
at least  $100 \log (f_d+11)$  dB or 60 dB or  $43 + 10 \log P$  dB, whichever is the lesser attenuation;

(2) For mobile stations, modulating signals other than the supervisory audio tone in the frequency range of 5.9 to 6.1 kHz must be attenuated, relative to the level at 1 kHz, at least 35 dB.

(d) *F1D emission mask.* For F1D emissions, the mean power of emissions must be attenuated below the mean

power of the unmodulated carrier (P) as follows:

(1) On any frequency removed from the carrier frequency by more than 20 kHz but not more than 45 kHz:

at least 26 dB;

(2) On any frequency removed from the carrier frequency by more than 45 kHz but not more than 90 kHz:

at least 45 dB;

(3) On any frequency removed from the carrier frequency by more than 90 kHz, up to the first multiple of the carrier frequency:

at least 60 dB or  $43+10 \log P$  dB, whichever is the lesser attenuation.

(e) *Out of band emissions.* The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency twice or more than twice the fundamental frequency by:

at least  $43+10 \log P$  dB.

(f) *Mobile emissions in base frequency range.* The mean power of any emissions appearing in the base station frequency range from cellular mobile transmitters operated must be attenuated to a level not to exceed  $-80$  dBm at the transmit antenna connector.

(g) *Interference from spurious emissions.* If any emission from a transmitter operating in this service results in interference to users of another radio service, the FCC may require a greater attenuation of that emission than specified in this section.

(h) *Measurement procedure.* The following spectrum analyzer bandwidth settings should be used for measurement of spurious emissions:

(1) When operating in the radiotelephony mode or the supervisory audio tone mode:

(i) For any emission not more than 45 kHz removed from the carrier frequency: 300 Hz;

(ii) For any emission more than 45 kHz removed from the carrier frequency: 30 kHz.

(2) When operating in the wideband data mode or the signaling tone mode:

(i) For any emission not more than 60 kHz removed from the carrier frequency: 300 Hz;

(ii) For any emission more than 60 kHz removed from the carrier frequency: 30 kHz.



**§ 22.919 Electronic serial numbers.**

The Electronic Serial Number (ESN) is a 32 bit binary number that uniquely identifies a cellular mobile transmitter to any cellular system.

(a) Each mobile transmitter in service must have a unique ESN.

(b) The ESN host component must be permanently attached to a main circuit board of the mobile transmitter and the integrity of the unit's operating software must not be alterable. The ESN must be isolated from fraudulent contact and tampering. If the ESN host component does not contain other information, that component must not be removable, and its electrical connections must not be accessible. If the ESN host component contains other information, the ESN must be encoded using one or more of the following techniques:

- (1) Multiplication or division by a polynomial;
- (2) Cyclic coding;
- (3) The spreading of ESN bits over various non-sequential memory locations.

(c) The ESN must be factory set and must not be alterable, transferable, removable or otherwise able to be manipulated. Cellular mobile equipment must be designed such that any attempt to remove, tamper with, or change the ESN chip, its logic system, or firmware originally programmed by the manufacturer will render the mobile transmitter inoperative.

**§ 22.923 Cellular system configuration.**

Mobile stations communicate with and through base transmitters only. Base transmitters communicate with mobile stations directly or through cellular repeaters. Auxiliary test stations may communicate with base or mobile stations for the purpose of testing equipment.

**§ 22.925 Prohibition on airborne operation of cellular telephones.**

Cellular telephones installed in or carried aboard airplanes, balloons or any other type of aircraft must not be operated while such aircraft are airborne (not touching the ground). When any aircraft leaves the ground, all cellular telephones on board that aircraft must be turned off. The following no-

tice must be posted on or near each cellular telephone installed in any aircraft:

"The use of cellular telephones while this aircraft is airborne is prohibited by FCC rules, and the violation of this rule could result in suspension of service and/or a fine. The use of cellular telephones while this aircraft is on the ground is subject to FAA regulations."

**§ 22.927 Responsibility for mobile stations.**

Mobile stations that are subscribers in good standing to a cellular system, when receiving service from that cellular system, are considered to be operating under the authorization of that cellular system. Cellular system licensees are responsible for exercising effective operational control over mobile stations receiving service through their cellular systems. Mobile stations that are subscribers in good standing to a cellular system, while receiving service from a different cellular system, are considered to be operating under the authorization of such different system. The licensee of such different system is responsible, during such temporary period, for exercising effective operational control over such mobile stations as if they were subscribers to it.

**§ 22.929 Application requirements for the Cellular Radiotelephone Service.**

In addition to information required by subparts B and D of this part, applications for authorization in the Cellular Radiotelephone Service must contain the applicable supplementary information described in this section. Initial applications for new cellular systems must also comply with § 22.953.

(a) *Administrative information.* The following information is required either by FCC Form 600, Schedule C, or as an exhibit.

- (1) The number of transmitter sites for which authorization is requested;
- (2) The call sign(s) of other facilities in the same area that are ultimately controlled by the real party in interest to the application;
- (3) If the application involves a service area boundary (SAB) extension (see § 22.912), a statement as to whether the

five year build-out period for the system on the relevant channel block in the market into which the SAB extends has elapsed, and whether the SAB extends into any unserved area in that market.

(b) *Technical information.* The following information is required by FCC Form 600, Schedule C.

(1) Location description; city; county; state; geographical coordinates correct to  $\pm 1$  second, the datum used (NAD 27 and NAD 83), site elevation above mean sea level, proximity to adjacent market boundaries and international borders;

(2) Antenna manufacturer, model number and type, antenna height to tip above ground level, the height of the center of radiation of the antenna above the average terrain, the height of the antenna center of radiation above the average elevation of the terrain along each of the 8 cardinal radials, antenna gain in the maximum lobe, the beamwidth of the maximum lobe of the antenna, a polar plot of the horizontal gain pattern of the antenna, the electric field polarization of the wave emitted by the antenna when installed as proposed;

(3) The channel block requested, the maximum effective radiated power, the effective radiated power in each of the cardinal radial directions.

(c) *Maps.* If the application proposes a change in the CGSA, it must include full size and reduced maps, and supporting engineering, as described in § 22.953(a)(5)(i) through (iii).

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

**§ 22.933 Cellular system compatibility specification.**

Except as provided in § 22.901(d), equipment used in the Cellular Radiotelephone Service must be designed in compliance with the technical specifications for compatibility of mobile and base stations in the Cellular Radiotelephone Service contained in "Cellular System Mobile Station-Land Station Compatibility Specification" (April 1981 Ed.), Office of Engineering and Technology Bulletin No. 53. This bulletin is contained in Appendix D to the *Report and Order* in CC Docket No. 79-318, and was published in the FED-

ERAL REGISTER of May 21, 1981. Copies may be obtained from the FCC's copying contractor. Special operational features that have been developed by joint industry consensus through the Telecommunications Industry Association (TIA) and established as a TIA standard may be activated at the option of the cellular licensee, provided that the compatibility of equipment within the Cellular Radiotelephone Service as specified in OET Bulletin No. 53 is not adversely affected.

**§ 22.935 Procedures for comparative renewal proceedings.**

The procedures in this section apply to comparative renewal proceedings in the Cellular Radiotelephone Service.

(a) If one or more applications competing with an application for renewal of a cellular authorization are filed, the renewal applicant must file with the FCC an original and four copies of its renewal expectancy showing. This filing must be submitted no later than 60 days after the date of the Public Notice listing as acceptable for filing the renewal application and the competing applications.

(b) Interested parties may file petitions to deny any of the mutually exclusive applications. Any such petitions to deny must be filed no later than 30 days after the date that the renewal applicant submitted its renewal expectancy showing. Applicants may file replies to any petitions to deny applications that are filed. Any such replies must be filed no later than 15 days after the date that the petition(s) to deny was filed. No further pleadings will be accepted.

(c) In most instances, the renewal application and any competing applications will be designated for a two-step procedure. An Administrative Law Judge (Presiding Judge) will conduct a threshold hearing (step one), in which both the licensee and the competing applicants will be parties, to determine whether the renewal applicant deserves a renewal expectancy. If the order designating the applications for hearing specifies any basic qualifying issues against the licensee, those issues will be tried in this threshold hearing. If the Presiding Judge determines that the renewal applicant is basically

qualified and due a renewal expectancy, the competing applicants will be found ineligible for further consideration and their applications will be denied. If the Presiding Judge determines that the renewal applicant does not merit a renewal expectancy but is otherwise qualified, then all of the applications will be considered in a comparative hearing (step two).

(d) Any competing applicant may request a waiver of the threshold hearing (step one), if such applicant demonstrates that its proposal so far exceeds the service already being provided that there would be no purpose in making a threshold determination as to whether the renewal applicant deserved a renewal expectancy vis-a-vis such a competing applicant. Any such waiver request must be filed at the time the requestor's application is filed. Petitions opposing such waiver requests may be filed. Any such petitions must be filed no later than 30 days after the date that the renewal applicant submitted its renewal expectancy showing. Replies to any petitions opposing such waiver requests may be filed. Any such replies must be filed no later than 15 days after the date that the petition(s) were filed. No further pleadings will be accepted. Any waiver request submitted pursuant to this paragraph will be acted upon prior to designating the applications for hearing. If a request to waive the threshold hearing (step one) is granted, the renewal expectancy issue will be designated as part of the comparative hearing (step two), and will remain the most important comparative factor in deciding the case, as provided in §22.940(a).

(e) If the Presiding Judge issues a ruling in the threshold (step one) that denies the licensee a renewal expectancy, all of the applicants involved in the proceeding will be allowed to file direct cases no later than 90 days after the release date of the Presiding Judge's ruling. Rebuttal cases must be filed no later than 30 days after the date that the direct cases were filed.

(f) The Presiding Judge shall use the expedited hearing procedures delineated in this paragraph in both threshold (step one) and comparative (step

two) hearings conducted in comparative cellular renewal proceedings.

(1) The Presiding Judge will schedule a first hearing session as soon as practicable after the date for filing rebuttal evidence. This first session will be an evidentiary admission session at which each applicant will identify and offer its previously circulated direct and rebuttal exhibits, and each party will have an opportunity to lodge objections.

(2) After accepting the exhibits into evidence, the Presiding Judge will entertain motions to cross-examine and rule whether any sponsoring witness needs to be produced for cross-examination.

Determination of what, if any, cross-examination is necessary is within the sound judicial discretion of the Presiding Judge, the prevailing standard being whether the person requesting cross-examination has persuasively demonstrated that written evidence is ineffectual to develop proof. If cross-examination is necessary, the Presiding Judge will specify a date for the appearance of all witnesses. In addition, if the designation order points out an area where additional underlying data is needed, the Presiding Judge will have the authority to permit the limited use of discovery procedures. Finally, the Presiding Judge may find that certain additional testimony or cross-examination is needed to provide a complete record for the FCC. If so, the Presiding Judge may schedule a further session.

(3) After the hearing record is closed, the Presiding Judge may request Proposed Findings of Fact and Conclusions of Law to be filed no later than 30 days after the final hearing session. Replies are not permitted except in unusual cases and then only with respect to the specific issues named by the Presiding Judge.

(4) The Presiding Judge will then issue an Initial Decision, preferably within 60 days of receipt of the last pleadings. If mutually exclusive applications are before the Presiding Judge, the Presiding Judge will determine which applicant is best qualified. The Presiding Judge may also rank the applicants in order of merit if there are more than two.

(5) Parties will have 30 days in which to file exceptions to the Initial Decision. The Common Carrier Bureau has authority to determine, at the time of designation for hearing, that such exceptions will be taken directly to the FCC rather than to the Review Board.

**§22.936 Dismissal of applications in cellular renewal proceedings.**

Any applicant that has filed an application in the Cellular Radiotelephone Service that is mutually exclusive with an application for renewal of a cellular authorization (competing application), and seeks to resolve the mutual exclusivity by requesting dismissal of its application, must obtain the approval of the FCC.

(a) If a competing applicant seeks to dismiss its application prior to the Initial Decision stage of the hearing on its application, it must submit to the FCC a request for approval of the dismissal of its application, a copy of any written agreement related to the withdrawal or dismissal, and an affidavit setting forth:

(1) A certification that neither the petitioner nor its principals has received or will receive any money or other consideration in excess of legitimate and prudent expenses in exchange for the withdrawal or dismissal of the application, except that this provision does not apply to dismissal or withdrawal of applications pursuant to *bona fide* merger agreements;

(2) The exact nature and amount of any consideration received or promised;

(3) An itemized accounting of the expenses for which it seeks reimbursement; and

(4) The terms of any oral agreement related to the withdrawal or dismissal of the application.

(b) In addition, within 5 days of the filing date of the applicant or petitioner's request for approval, each remaining party to any written or oral agreement must submit an affidavit setting forth:

(1) A certification that neither the applicant nor its principals has paid or will pay money or other consideration in excess of the legitimate and prudent expenses of the petitioner in exchange

for withdrawing or dismissing the application; and

(2) The terms of any oral agreement relating to the withdrawal or dismissal of the application.

(c) For the purposes of this section:

(1) Affidavits filed pursuant to this section must be executed by the filing party, if an individual, a partner having personal knowledge of the facts, if a partnership, or an officer having personal knowledge of the facts, if a corporation or association.

(2) Applications are deemed to be pending before the FCC from the time the application is filed with the FCC until such time as an order of the FCC granting, denying or dismissing the application is no longer subject to reconsideration by the FCC or to review by any court.

(3) "Legitimate and prudent expenses" are those expenses reasonably incurred by a party in preparing to file, filing, prosecuting and/or settling its application for which reimbursement is sought.

(4) "Other consideration" consists of financial concessions, including, but not limited to, the transfer of assets or the provision of tangible pecuniary benefit, as well as non-financial concessions that confer any type of benefit on the recipient.

**§22.937 Demonstration of financial qualifications.**

Except as provided in paragraphs (g) and (h) of this section, each applicant for a new cellular system must demonstrate that it has, at the time the application is filed, either a separate market-specific firm financial commitment or available financial resources sufficient to construct and operate for one year the proposed cellular system. Each application of reassignment of license or consent to transfer of control must demonstrate the financial ability of the proposed assignee or transferee to acquire and operate the facilities.

(a) *Estimated costs.* The demonstration required by this section must include a realistic and prudent estimate of the costs of construction, operating and other initial expenses for one year.

(b) *Source of financing.* The firm financial commitment must be obtained from a state or federally chartered

bank or savings and loan association, another recognized financial institution, or the financial arm of a capital equipment supplier. The firm financial commitment may be contingent upon the applicant's obtaining an authorization.

(c) *Lender's statement.* The firm financial commitment must contain a statement that:

(1) The lender has examined the financial condition of the applicant, including audited financial statements if applicable, and has determined that the applicant is creditworthy;

(2) The lender has examined the financial viability of each proposal for which the applicant intends to use the commitment;

(3) The lender is committed to providing a sum certain to the particular applicant;

(4) The lender's willingness to enter into the commitment is based solely on its relationship with the applicant; and,

(5) The commitment is not in any way guaranteed by any entity other than the applicant.

(d) *Showings of financial resources.* Applicants relying upon personal or internal financial resources must submit the following:

(1) Audited financial statements, certified within one year of the date of the cellular application, that show the availability of sufficient net current assets to construct and operate for one year the proposed cellular system;

(2) A balance sheet current within 60 days of the date of filing that shows the continued availability of sufficient net current assets to construct and operate for one year the proposed cellular system; and,

(3) A certification by the applicant or an officer of the applicant organization attesting to the validity of the unaudited balance sheet.

(e) *Parent corporation financing.* Applicants relying upon financing obtained from parent corporations must submit the showings listed in paragraph (d) of this section as the information pertains to the parent corporation.

(f) *Notice upon default.* In addition to the disclosures required by paragraph (c) of this section, any loan or other

credit arrangement providing for a chattel mortgage or secured interest in any proposed cellular system must include a provision for a minimum of ten (10) days prior written notification to the licensee, and to the FCC, before any such equipment may be repossessed under default provision of the agreement.

(g) *Competing applications in cellular renewal proceedings.* Initial cellular applications that are competing against a cellular renewal application are subject to the rules in this paragraph instead of the rules in paragraphs (a) through (f) of this section.

(1) Any applicant filing a competing application against a cellular renewal application must demonstrate, at the time it files its application, that it has either:

(i) A firm financial commitment, an irrevocable letter of credit or performance bond in the amount of its realistic and prudent estimated costs of construction and any other expenses to be incurred during the first year of operating its proposed system (the irrevocable letter of credit or performance bond must be from the type of financial institution described in paragraph (g)(3) of this section); or,

(ii) Available resources, as defined in paragraph (g)(4) of this section, necessary to construct and operate its proposed cellular system for one year.

(2) The firm financial commitment may be contingent on the applicant obtaining an authorization. The applicant must also list all of its realistic and prudent estimated costs of construction and any other expenses to be incurred during the first year of operating its proposed system.

(3) The firm financial commitment required above shall be obtained from a state or federally chartered bank or savings and loan association, another recognized financial institution, or the financial arm of a capital equipment supplier; shall specify the terms of the loan or other form of credit arrangement, including the amount to be borrowed, the interest to be paid, the amount of the commitment fee and the fact that it has been paid, the terms of repayment and any collateral required; and shall contain a statement:

(i) That the lender has examined the financial conditions of the applicant, including audited financial statements where applicable, and has determined that the applicant is creditworthy;

(ii) That the lender has examined the financial viability of the proposal for which the applicant intends to use the commitment;

(iii) That the lender is committed to providing a sum certain to the particular applicant;

(iv) That the lender's willingness to enter into the commitment is based solely on its relationship with the applicant; and,

(v) That the commitment is not in any way guaranteed by an entity other than the applicant.

(4) Applicants intended to rely on personal or internal resources must submit:

(i) Audited financial statements certified within one year of the date of the cellular application, indicating the availability of sufficient net current assets to construct and operate the proposed cellular system for one year;

(ii) A balance sheet current within 60 days of the date of filing its application that clearly shows the continued availability of sufficient net current assets to construct and operate the proposed cellular system for one year; and,

(iii) A certification by the applicant or an officer of the applicant organization attesting to the validity of the unaudited balance sheet.

(5) Applicant intending to rely upon financing obtained through a parent corporation must submit the information required by paragraph (g)(4) of this section, as the information pertains to the parent corporation.

(6) As an alternative to relying upon a firm financial commitment, an irrevocable letter of credit, or a performance bond from a financial institution as described in paragraph (g)(3) of this section, an applicant may state that it has placed in an escrow account sufficient cash to meet its construction and first-year operating expenses. Such a statement must specify the amount of cash, the escrow account number and the financial institution where the escrow account is located.

(7) Any competing application filed against the renewal application of an

incumbent cellular licensee that does not demonstrate, at the time it is initially filed, that the competing applicant has sufficient funds to construct and operate for one year its proposed cellular system will be dismissed.

(h) *Exemptions.* Any licensee applying for an unserved area adjacent to its existing cellular system, to integrate such area into the existing system, is exempt from the financial demonstration requirements of this section. In addition, modification applications and *pro forma* assignment and transfer of control applications are exempt from the financial demonstration requirements of this section.

**§22.939 Site availability requirements for applications competing with cellular renewal applications.**

In addition to the other requirements set forth in this part for initial cellular applications, any application competing against a cellular renewal application must contain, when initially filed, appropriate documentation demonstrating that its proposed antenna site(s) will be available. Competing applications that do not include such documentation will be dismissed. If the competing applicant does not own a particular site, it must, at a minimum demonstrate that the site is available to it by providing a letter from the owner of the proposed antenna site expressing the owner's intent to sell or lease the proposed site to the applicant. If any proposed antenna site is under U.S. Government control, the applicant must submit written confirmation of the site's availability from the appropriate Government agency. Applicants which file competing applications against incumbent cellular licensees may not rely on the assumption that an incumbent licensee's antenna sites are available for their use.

**§22.940 Criteria for comparative cellular renewal proceedings.**

This section sets forth criteria to be used in comparative cellular renewal proceedings. The ultimate issue in comparative renewal proceedings will be to determine, in light of the evidence adduced in the proceeding, what disposition of the applications would

best serve the public interest, convenience and necessity.

(a) *Renewal expectancies.* The most important comparative factor to be considered in a comparative cellular renewal proceeding is a major preference, commonly referred to as a "renewal expectancy."

(1) The cellular renewal applicant involved in a comparative renewal proceeding will receive a renewal expectancy, if its past record for the relevant license period demonstrates that:

(i) The renewal applicant has provided "substantial" service during its past license term. "Substantial" service is defined as service which is sound, favorable, and substantially above a level of mediocre service which just might minimally warrant renewal; and

(ii) The renewal applicant has substantially complied with applicable FCC rules, policies and the Communications Act of 1934, as amended.

(2) In order to establish its right to a renewal expectancy, a cellular renewal applicant involved in a comparative renewal proceeding must submit a showing explaining why it should receive a renewal expectancy. At a minimum, this showing must include:

(i) A description of its current service in terms of geographic coverage and population served, as well as the system's ability to accommodate the needs of roamers;

(ii) An explanation of its record of expansion, including a timetable of the construction of new cell sites to meet changes in demand for cellular service;

(iii) A description of its investments in its cellular system; and

(iv) Copies of all FCC orders finding the licensee to have violated the Communications Act or any FCC rule or policy; and a list of any pending proceedings that relate to any matter described in this paragraph.

(3) In making its showing of entitlement to a renewal expectancy, a renewal applicant may claim credit for any system modification applications that were pending on the date it filed its renewal application. Such credit will not be allowed if the modification application is dismissed or denied.

(b) *Additional comparative issues.* The following additional comparative issues will be included in comparative

cellular renewal proceedings, if a full comparative hearing is conducted pursuant to §22.935(c).

(1) To determine on a comparative basis the geographic areas and population that each applicant proposes to serve; to determine and compare the relative demand for the services proposed in said areas; and to determine and compare the ability of each applicant's cellular system to accommodate the anticipated demand for both local and roamer service;

(2) To determine on a comparative basis each applicant's proposal for expanding its system capacity in a coordinated manner in order to meet anticipated increasing demand for *both* local and roamer service;

(3) To determine on a comparative basis the nature and extent of the service proposed by each applicant, including each applicant's proposed rates, charges, maintenance, personnel, practices, classifications, regulations and facilities (including switching capabilities); and

(4) To determine on a comparative basis each applicant's past performance in the cellular industry or another business of comparable type and size.

(c) *Additional showings for competing applications.* With respect to evidence introduced pursuant to paragraph (b)(3) of this section, any applicant filing a competing application against a cellular renewal application (competing applicant) who claims a preference for offering any service not currently offered by the incumbent licensee must demonstrate that there is demand for that new service and also present a business plan showing that the competing applicant can operate the system economically. Any competing applicant who proposes to replace analog technology with digital technology will receive no credit for its proposal unless it submits a business plan showing how it will operate its system economically and how it will provide more comprehensive service than does the incumbent licensee with existing and implemented cellular technology.

**§ 22.941 System identification numbers.**

System identification numbers (SIDs) are 15 bit binary numbers assigned to cellular systems. SIDs are transmitted by the cellular systems so that cellular mobile stations can determine whether the system through which they are communicating is a system to which they subscribe, or whether they are considered by the system to be roamers.

(a) The FCC assigns one SID to each cellular system on its initial authorization. Cellular systems may transmit only their assigned SID(s) and/or the SIDs assigned to other cellular systems. A cellular system may transmit the SID assigned to another cellular system only if the licensee of that system concurs with such use of its assigned SID.

(b) Licensees must notify the FCC (FCC Form 489) if their cellular systems transmit SIDs assigned to other cellular systems. The notification must indicate the concurrence of the licensee(s) of such other systems with this use of their assigned SID(s). The notification must be mailed or delivered to the filing place (see § 22.106) no later than 15 days after the system begins transmitting the SID(s).

(c) Licensees may request that an additional (previously unassigned) SID be assigned to their system by filing an application for minor modification of station (FCC Form 600).

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

**§ 22.942 Limitations on interests in licensees for both channel blocks in an area.**

No person may have a direct or indirect ownership interest in licensees for both channel blocks in overlapping cellular geographic service areas (CGSAs), unless such interests pose no substantial threat to competition. A licensee, a person that owns a controlling interest in a licensee, or a person that actually controls a licensee for one channel block in a CGSA must not have any direct or indirect ownership interest in the licensee, a person that owns a controlling interest in a licensee, or a person that actually controls a licensee

for the other channel block in an overlapping CGSA.

(a) A direct or indirect ownership interest of 5% or less in both systems is automatically excluded from the general rule prohibiting multiple ownership interests. Interests of less than 5% are considered and are not excluded from the general rule prohibiting multiple ownership interests in cases of persons or entities that own a small percentage of the licensee but nonetheless actually control the licensee, a person that owns a controlling interest in the licensee, or a person that actually controls the licensee.

(b) Divestiture of interests as a result of a transfer of control or assignment of authorization must occur prior to consummating the transfer or assignment.

**§ 22.943 Limitations on assignments and transfers of cellular authorizations.**

The following limitations apply to applications for consent to transfer of control or assignment of authorizations in the Cellular Radiotelephone Service.

(a) *Trafficking.* Applications for consent to transfer of control or assignment of authorization in the Cellular Radiotelephone Service are subject to the provisions of § 22.139, except for:

(1) Applications reflecting the trading of an ownership interest in an authorized but unconstructed cellular system in one market for a commensurate interest in a cellular system in another market; and,

(2) Applications for consent to transfer of control or assignment of a cellular authorization obtained by random selection, after commencement of service.

(b) *Unserved area systems.* Except as otherwise provided in paragraph (b)(2) of this section, the FCC does not accept applications for consent to transfer of control or assignment of the authorization of a cellular system licensed to serve an unserved area until the system has provided service to subscribers for at least one year.

(1) Licensees must not enter into any agreement (e.g. option agreement or management contract) to transfer control of the licensee of the system until



the system has provided service to subscribers for one year.

(2) The FCC may accept that grant applications for consent to transfer of control or for assignment of authorization if the transfer or assignment is *pro forma* and does not involve a change in ownership.

(c) *Systems authorized as result of comparative renewal proceeding.* Except as otherwise provided in paragraphs (c)(1), (c)(2) and (c)(3) of this section, the FCC does not accept applications for consent to transfer of control or for assignment of the authorization of a cellular system that has been acquired by the current licensee for the first time as a result of a comparative renewal proceeding until the system has provided service to subscribers for at least three years.

(1) The FCC may accept and grant applications for consent to transfer of control or for assignment of the authorization of a cellular system that is to be transferred as a part of a *bona fide* sale of an on-going business to which the cellular operation is incidental.

(2) The FCC may accept and grant applications for consent to transfer of control or for assignment of the authorization of a cellular system that is to be transferred as a result of the death of the licensee.

(3) The FCC may accept and grant applications for consent to transfer of control or for assignment of authorization if the transfer or assignment is *pro forma* and does not involve a change in ownership.

**§22.944 Transfers of interests in applications.**

This section governs transfers of interest in applicants having a pending application for a new cellular system. For the purposes of this section, “interest in an application” means interest in the applicant.

(a) Except as provided in paragraph (b) of this section, the transfer of any interest in any application for initial authorization to operate a cellular system is prohibited. For the purposes of this section, transfer of interest means the sale, assignment, placement of equity or convertible debt, grant of an option or future share or participation

in the applicant or any interest thereof.

(b) The following types of transfers of interest in cellular applications are permitted:

(1) Transfers that are necessary to raise capital, including the placement of debt or equity, to finance a *bona fide* business need of the applicant or an affiliated company, not related to the cellular application or financing of the cellular system proposed therein;

(2) Transfers that are part of a *bona fide* sale of an ongoing business to which the cellular applications are merely adjunct or incidental;

(3) Transfers required by a court-ordered decree granting a divorce or enforcing a spousal separation agreement;

(4) Transfers necessitated by the death of the applicant;

(5) Transfers involving the routine trading of shares in a publicly traded corporation that do not constitute a transfer of control of the applicant;

(6) Transfers resulting from *pro forma* transfers of control of the applicant, not involving changes in ownership;

(7) Transfers involving only the transfer of interest by one existing partner in a partnership applicant to another existing partner in that same partnership, or between existing shareholders in a closely-held corporation, which does not effect a transfer of control of the applicant;

(8) Transfers resulting from the alienation or exercise of stock warrants or stock options that existed prior to the filing of the application.

**§22.945 Interests in multiple applications.**

This section governs interests in applicants with mutually exclusive applications for a new cellular system. For the purposes of this section, “interest in an application” means interest in the applicant.

(a) *General.* Except as otherwise provided in this section, parties must not have any interest, direct or indirect, in more than one application for authority to operate a new cellular system in the same cellular market.

(b) *Abutting CGSAs.* Licensees of existing systems whose cellular geographic service area (CGSA) abuts a

proposed CGSA may each file one application that is mutually exclusive with the applications of other such licensees, even though they share common owners, provided that such licensees do not thereby acquire a simultaneous interest in applications for both channel blocks in any geographical area.

(c) *Publicly traded corporate applicants.* Parties must not have any interest, direct or indirect, in more than one mutually exclusive initial application for which the applicant is a publicly traded corporation, except that ownership interests of less than 5% are not considered. Ownership and other interests in applicants are attributed to their holder and deemed cognizable as set forth below.

(1) *Passive investors.* Investment companies, as defined in 15 U.S.C. 80a-3, insurance companies and banks holding stock through their trust departments in trust accounts are deemed to have a cognizable interest in a publicly traded cellular applicant only if they hold 10% or more of the stock of the applicant. This provision applies only if an applicant in which such parties hold an interest certifies in its application that no such party has exerted or attempted to exert any influence or control over the officers of the applicant.

(2) *Multiplier.* Attribution of ownership interests in a publicly traded cellular applicant that are held indirectly by any party through one or more intervening corporations will be determined by successive multiplication of the ownership percentages for each link in the vertical ownership chain and application of the relevant attribution benchmark to the resulting product, except that wherever the ownership percentage for any link in the chain exceeds 50 percent, it is not included in the multiplication.

**§ 22.946 Service commencement and construction periods for cellular systems.**

This section specifies the service commencement and construction periods and related requirements for cellular systems.

(a) *Commencement of service.* New cellular systems must be at least partially constructed and begin providing

cellular service to subscribers within the service commencement periods specified in Table H-1 of this section. Service commencement periods begin on the date of grant of the initial authorization, and are not extended by the grant of subsequent authorizations for the cellular system (such as for major modifications).

TABLE H-1.—COMMENCEMENT OF SERVICE

Type of cellular system	Required to commence service within
The first system authorized on each channel block in markets 1–90.	36 months.
The first system authorized on each channel block in all other markets and any subsequent systems authorized pursuant to contracts in partitioned markets.	18 months.
All other systems .....	12 months.

(1) To satisfy the requirement of paragraph (a) of this section, a cellular system must be interconnected with the public switched telephone network (PSTN) and must be providing service to mobile stations operated by its subscribers and roamers. A cellular system is not considered to be providing service to subscribers if mobile stations can not make telephone calls to landline telephones and receive telephone calls from landline telephones through the PSTN, or if the system intentionally serves only roamer stations.

(2) The licensee must notify the FCC (FCC Form 489) no later than 15 days after the requirements of paragraph (a) of this section are met.

(b) *Construction period for specific facilities.* The construction period applicable to specific new or modified cellular facilities for which an authorization has been granted is one year from the date the authorization is granted. Failure to comply with this requirement results in termination of the authorization for the specific new or modified facility, pursuant to § 22.144(b).

**§ 22.947 Five year build-out period.**

The licensee of the first cellular system authorized on each channel block in each cellular market is afforded a five year period, beginning on the date the initial authorization for the system

is granted, during which it may expand the system within that market.

(a) *Exclusive right to expand within market.* Except as provided in paragraph (b) of this section, the FCC does not accept applications for authority to operate a new cellular system in any unserved area in a market on a channel block during the five year build-out period.

(b) *Partitioned markets.* During the five year build-out period, the licensee of the first cellular system on each channel block in each market may enter into contracts with eligible parties, allowing such parties to apply (FCC Form 600) for a new cellular system on that channel block within the market. The FCC may grant such applications if they are in compliance with the rules in this part. Markets with two or more authorized cellular systems on the same channel block during the five year build-out period are referred to (with respect to the affected channel block) as "partitioned markets".

(1) Partitioning contracts must define the CGSA of the subsequent cellular system in accordance with § 22.911, including any expansion rights ceded. If not exercised, any such expansion rights terminate at the end of the five year build-out period.

(2) The five year build-out period begins on the date the initial authorization for the first cellular system is granted, and is not extended or affected in any way by the initial authorization of any subsequent cellular systems pursuant to paragraph (b) of this section.

(c) *System information update.* Sixty days before the end of the five year build-out period, the licensee of each cellular system authorized on each channel block in each cellular market must file, in triplicate, a system information update (SIU), comprising a full size map, a reduced map, and an exhibit showing technical data relevant to determination of the system's CGSA. Separate maps must be submitted for each market into which the CGSA extends, showing the extension area in the adjacent market. Maps showing extension areas must be labeled (i.e. marked with the market number and channel block) for the market into which the CGSA extends.

SIUs must accurately depict the relevant cell locations and coverage of the system at the end of the five year build-out period. SIUs must be filed at the Mobile Services Division, Common Carrier Bureau, Federal Communications Commission, Washington, DC 20554. If any changes to the system occur after the filing of the SIU, but before the end of the five year build-out period, the licensee must file, in triplicate, additional maps and/or data as necessary to insure that the cell locations and coverage of the system as of the end of the five year build-out period are accurately depicted.

(1) The scale of the full-size map must be 1:500,000, regardless of whether any different scale is used for the reduced map. The map must have a legend, a distance scale and correctly labeled latitude and longitude lines. The map must be clear and legible. The map must accurately show the cell sites (transmitting antenna locations) which determine the CGSA, the entire CGSA, any extension of the composite service area boundary beyond the CGSA (see § 22.911) and the relevant portions of the cellular market boundary. The date on which the map depictions are accurate must appear on the map.

(2) The reduced map must be a proportional reduction, to 8½×11 inches, of the full-size map required in paragraph (c)(1) of this section, unless it proves to be impractical to depict the entire market by reducing the full-size map. In such instance, an 8½×11 inch map of a different scale may be substituted, provided that the required features of the full-size map are clearly depicted and labeled.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

#### **§ 22.949 Unserved area licensing process.**

This section sets forth the process for licensing unserved areas in cellular markets on channel blocks for which the five year build-out period has expired. This process has two phases: Phase I and Phase II.

(a) *Phase I.* Phase I is a one-time process that provides an opportunity for eligible parties to file competing applications for authority to operate a new cellular system in or to expand an

existing cellular system into unserved areas (Phase I initial applications) as soon as these areas become available. In addition, each licensee whose Phase I initial application is granted is afforded one opportunity during the Phase I process to file an application proposing major modifications to the cellular system authorized by that grant (a Phase I major modification application), without being subject to competing applications.

(1) Phase I initial applications must be filed on the 31st day after the expiration of the five year build-out period of the authorized system(s) on the channel block requested in the market containing the unserved area.

(i) Each Phase I application must request authorization for one and only one cellular geographic service area (CGSA) in one and only one cellular market.

(ii) Applicants must not file more than one Phase I initial application for any cellular market.

(iii) Phase I initial applications must not propose any *de minimis* or contract service area boundary (SAB) extensions.

(2) Only one Phase I initial application is granted on each channel block in each market. Consequently, whenever two or more acceptable Phase I initial applications are timely filed in the same market on the same channel block, such Phase I initial applications are mutually exclusive, regardless of any other considerations such as the technical proposals. In order to determine which of such mutually exclusive Phase I initial applications to grant, the Commission administers competitive bidding procedures in accordance with subpart Q of part 1 of this chapter. After such procedures, the application of the winning bidder may be granted and the applications excluded by that grant may be dismissed without prejudice.

NOTE: Notwithstanding the provisions of § 22.949(a)(2), mutually exclusive Phase I initial applications that were filed between March 10, 1993 and July 25, 1993, inclusive, are to be included in a random selection process, following which the selected application may be granted and the applications excluded by that grant may be dismissed without prejudice.

(3) Phase I major modification applications (applications filed during Phase I that propose major modifications to cellular systems authorized by the grant of Phase I initial applications) must be filed no later than 90 days after the grant of the Phase I initial application. Each Phase I licensee may file only one Phase I major modification application. The FCC will not accept any competing applications in response to a Phase I major modification application. Phase I licensees may not sell to a third party any rights to apply for unserved area.

(i) Phase I major modification applications may propose *de minimis* or contract SAB extensions; provided that a contract SAB extension into an adjacent market may be proposed only if, at the time the Phase I major modification application is filed, the licensee in the adjacent market (on the requested channel block) has the right to enter into such a contract (see § 22.912(c)).

(ii) Phase I major modification application may propose a CGSA that is not contiguous with the authorized or proposed CGSA, provided that the non-contiguous CGSA meets the minimum coverage requirement of § 22.951.

(4) Phase I licensees may also file applications for or notifications of minor modifications to its system. However, such minor modifications may not reduce the size of the CGSA below the minimum coverage requirement of § 22.951.

(b) *Phase II.* Phase II is an on-going filing process that allows eligible parties to apply for any unserved areas that may remain in a market after the Phase I process is complete.

(1) If a Phase I initial application is granted for a market and channel block, Phase II applications (applications for authority to operate a cellular system in any remaining unserved area) for that market and channel block may be filed on or after the 121st day after the Phase I application was granted. If no Phase I initial applications are granted for a market and channel block, Phase II applications for that market and channel block may be filed on or after the 31st day after the FCC dismissed the last pending Phase I application. If no

Phase I initial applications are received for a market and channel block, Phase II applications for that market and channel block may be filed on or after the 32nd day after the expiration of the relevant five-year build-out period.

(2) There is no limit to the number of Phase II applications that may be granted on each channel block in each market. Consequently, Phase II applications are mutually exclusive only if the proposed CGSAs would overlap. Mutually exclusive applications are processed using the general procedures in § 22.131.

(3) Phase II applications may propose a CGSA covering more than one cellular market. Each Phase II application must request authorization for one and only one CGSA. Phase II applications may propose *de minimis* and contract SAB extensions.

(c) *Settlements among mutually exclusive applicants.* Settlements among some, but not all, applicants with mutually exclusive applications for unserved areas (partial settlements) are prohibited. Settlements among all applicants with mutually exclusive applications (full settlements) are allowed and must be filed no later than fifteen (15) business days before the competitive bidding procedure is scheduled to take place.

(d) *Limitations on amendments.* Notwithstanding the provisions of § 22.122, Phase I applications are subject to the following additional limitations in regard to the filing of amendments.

(1) The Commission will not accept amendments (of any type) to mutually exclusive Phase I applications prior to the conclusion of the competitive bidding process.

(2) The FCC will not accept major amendments to Phase I applications.

(3) Minor amendments required by § 1.65 of this chapter must be filed no later than thirty (30) days after public notice announcing the results of the competitive bidding process.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59956, Nov. 21, 1994]

**§ 22.951 Minimum coverage requirement.**

Applications for authority to operate a new cellular system in an unserved

area, other than those filed by the licensee of an existing system that abuts the unserved area, must propose a contiguous cellular geographical service area (CGSA) of at least 130 square kilometers (50 square miles). Area within contract SAB extensions counts toward the minimum coverage requirement. However, area within *de minimis* SAB extensions does not count toward the minimum coverage requirement. Applications for authority to operate a new cellular system in an unserved area, other than those filed by the licensee of an existing system that abuts the unserved area, must not propose coverage of water areas only (or water areas and uninhabited islands or reefs only), except for unserved areas in the Gulf of Mexico MSA.

**§ 22.953 Content and form of applications.**

Applications for authority to operate a cellular system in an unserved area must comply with the specifications in this section.

(a) *New systems.* Forms, pages and exhibits must be prepared exactly as described and assembled in the order listed in this section.

(1) *Application cover.* The paper original of each application must be enclosed in a stiff cover fastened securely along the left edge, without exposed sharp edges.

(2) *Transmittal sheet.* The first page after the front cover of the application must be the transmittal sheet.

(i) Copies of the required transmittal sheet may be obtained by contacting the Consumer Assistance Office, Federal Communications Commission, 1919 M Street NW, Washington, DC 20554.

(ii) On the transmittal sheet, the following information is required: the name of the applicant, the channel block, and the market number or numbers and the market name or names in which the proposed CGSA is located. This information on the transmittal sheet must match exactly the information on the jacket of the microfiche and the cover of the application.

(iii) The transmittal sheet also contains a certification. Applicants must certify to the following:

I hereby certify that this application for an authorization in the Cellular Radiotelephone Service is complete in every respect and contains all of the information required by FCC Form 600 and the Federal Communications Commission's rules governing this service. I acknowledge that, if upon examination by the FCC, this certification is found to be incorrect, the FCC will dismiss this application without further consideration.

I certify that I am the real party-in-interest in this application and there are no agreements or understandings other than those, if any, disclosed in this application, which provide that someone other than the applicant has a direct or indirect interest in the application. I also certify that the applicant intends to construct and operate the station as proposed and that there are no agreements or understandings that are inconsistent with that intent.

I declare, under penalty of perjury, that I am the authorized representative of the above-named applicant in the matter of this application, that I have read the foregoing certification, and that the matter and things therein stated are true and correct.

(iv) The certification must be signed and dated in accordance with the requirements of §1.743 of this chapter. The certification must be signed in ink. Mechanical reproductions of the signature must not be used. The name of and position held by the person signing must be typed or clearly and legibly printed beneath the signature.

(3) *Table of contents.* The table of contents must list all of the exhibits to the application.

(4) *FCC Form 401.* All information required for cellular applications on FCC Form 401 must be supplied.

(5) *Exhibits.* The following exhibits must be set off by tabs and numbered as follows:

(i) Exhibit I—full-size map. The scale of the full-size map must be 1:500,000, regardless of whether any different scale is used for the reduced map required in Exhibit II. The map must have a legend, a distance scale and correctly labeled latitude and longitude lines. The map must be clear and legible. The map must accurately show the cell sites (transmitting antenna locations), the entire CGSA, any extension of the composite service area boundary beyond the CGSA (see §22.911) and the relevant portions of the cellular market boundary.

(ii) Exhibit II—reduced map. This map must be a proportional reduction, to 8½ × 11 inches, of the full-size map required for Exhibit I, unless it proves to be impractical to depict the entire cellular market by reducing the full-size map. In such instance, an 8½ × 11 inch map of a different scale may be substituted, provided that the required features of the full-size map are clearly depicted and labeled.

(iii) Exhibit III—engineering. This exhibit must contain the data and methodology used to calculate the CGSA and service area boundary.

(iv) Exhibit IV—channel plan. This exhibit must show which specific channels (or groups) are to be used at each cell site. Any necessary table for converting channel numbers to center frequencies must be provided.

(v) Exhibit V—ownership information. This exhibit must contain the information required by §22.108. Additionally, individual applicants must disclose, in this exhibit, all interests (including those less than 5%) in publicly traded corporation(s) that have applications which are mutually exclusive with the individual's application.

(vi) Exhibit VI—service proposal. This exhibit must describe the services proposed for subscribers and roamers, including the proposed method for handling complaints.

(vii) Exhibit VII—cellular design. This exhibit must show that the proposed system design complies with cellular system design concepts, and must describe the method proposed to expand the system in a coordinated fashion as necessary to address changing demand for cellular service.

(viii) Exhibit VIII—blocking level. This exhibit must disclose the blocking probability or other criteria to be used to determine whether it is necessary to take measures to increase system capacity to maintain service quality.

(ix) Exhibit IX—start-up expenses. This exhibit must disclose in detail the projected cost of construction and other initial expenses of the proposed system, and how the applicant intends to meet these expenses and the costs of operation for the first year.

(x) Exhibit X—interconnection arrangements. This exhibit is required for applicants that provide public

landline message telephone service in any portion of the proposed CGSA. This exhibit must describe exactly how the proposed system would interconnect with the landline network. The description must be of sufficient detail to enable a competitor to connect with the landline system in exactly the same manner, if the competitor so chooses.

(b) *Existing systems.* Applications for changes to existing systems need only contain the form required by paragraph (a)(4) of this section and the exhibits required by paragraphs (a)(5)(i) through (iii) of this section.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994]

**§ 22.955 Canadian condition.**

Pursuant to an agreement between the FCC and the Department of Communications in Canada, authorizations for cellular systems within 72 kilometers (45 miles) of the U.S.-Canadian border must have the following condition attached:

This authorization is subject to the condition that, in the event that cellular systems using the same channel block as granted herein are authorized in adjacent territory in Canada, coordination of any of your transmitter installations which are within 72 kilometers (45 miles) of the U.S.-Canadian border shall be required to eliminate any harmful interference that might otherwise exist and to insure continuance of equal access to the channel block by both countries.

**§ 22.957 Mexican condition.**

Pursuant to an agreement between the United States and Mexico, FCC authorizations for cellular systems within 72 kilometers (45 miles) of the United States-Mexican border must have the following condition attached:

This authorization is subject to the condition that, in the event cellular systems using the same frequencies granted herein are authorized in adjacent territory in Mexico, coordination of your transmitter installations which are within 72 kilometers (45 miles) of the United States-Mexico border shall be required to eliminate any harmful interference that might otherwise exist and to ensure continuance of equal access to the frequencies by both countries. The operator of this system shall not contract with customers in Mexico, and further, users of the system must be advised that operation of a

mobile unit in Mexico is not permitted at this time without the express permission of the Mexican government. The above conditions are subject to modification pending further notice from the FCC.

**§ 22.959 Rules governing processing of applications for initial systems.**

Pending applications for authority to operate the first cellular system on a channel block in an MSA or RSA market continue to be processed under the rules governing the processing of such applications that were in effect when those applications were filed, unless the Commission determines otherwise in a particular case.

**Subpart I—Offshore Radiotelephone Service**

**§ 22.1001 Scope.**

The rules in this subpart govern the licensing and operation of offshore radiotelephone stations. The licensing and operation of these stations and systems is also subject to rules elsewhere in this part that apply generally to the public mobile services. However, in case of conflict, the rules in this subpart govern.

**§ 22.1003 Eligibility.**

Offshore central station licenses may be licensed to communications common carriers. Offshore subscriber stations may be licensed to common carriers or users of the service.

**§ 22.1005 Priority of service.**

Facilities in the Offshore Radiotelephone Service are intended primarily for rendition of public message service between offshore subscriber and central stations. However, they may also be used to render private leased line communication service, provided that such usage does not reduce or impair the extent or quality of communication service which would be available, in the absence of private leased line service, to the general public receiving or subsequently requesting public message service from an offshore central station.

**§ 22.1007 Channels for offshore radio-telephone systems.**

The channels listed in this section are allocated for paired assignment to transmitters located in the specified geographical zones that provide offshore radiotelephone service. All channels have a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz.

(a) *Zone A—Southern Louisiana.* The geographical area in Zone A is bounded as follows:

From longitude W.87°45' on the East to longitude W.94°00' on the West and from the 4.8 kilometer (3 mile) limit along the Gulf of Mexico shoreline on the North to the limit of the Outer Continental Shelf on the South.

(1) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for voice-grade general communications:

Central	Subscriber	Central	Subscriber
488.025	491.025	488.225	491.225
488.050	491.050	488.250	491.250
488.075	491.075	488.275	491.275
488.100	491.100	488.300	491.300
488.125	491.125	488.325	491.325
488.150	491.150	488.350	491.350
488.175	491.175	488.375	491.375
488.200	491.200	488.400	491.400

(2) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for voice-grade general communications and private line service:

Central	Subscriber	Central	Subscriber
488.425	491.425	488.575	491.575
488.450	491.450	488.600	491.600
488.475	491.475	488.625	491.625
488.500	491.500	488.650	491.650
488.525	491.525	488.675	491.675
488.550	491.550	488.700	491.700

(3) These channels may be assigned for use by relay stations in systems where it would be impractical to provide offshore radiotelephone service without the use of relay stations.

Central	Subscriber	Central	Subscriber
488.725	491.725	488.775	491.775
488.750	491.750	488.800	491.800

(4) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for emergency communications involving protection of life and property.

Central	Subscriber	Central	Subscriber
488.825	491.825	488.875	491.875
488.850	491.850	488.900	491.900

(5) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for emergency auto alarm and voice transmission pertaining to emergency conditions only.

Central	Subscriber
488.950	491.950

(6) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for emergency shut-off remote control telemetry, environmental data acquisition and disseminations, or facsimile transmissions.

Central	Subscriber	Central	Subscriber
489.000	492.000	489.200	492.200
489.025	492.025	489.225	492.225
489.050	492.050	489.250	492.250
489.075	492.075	489.275	492.275
489.100	492.100	489.300	492.300
489.125	492.125	489.325	492.325
489.150	492.150	489.350	492.350
489.175	492.175	489.375	492.375

(7) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for private line service:

Central	Subscriber	Central	Subscriber
489.400	492.400	489.725	492.725
489.425	492.425	489.750	492.750
489.450	492.450	489.775	492.775
489.475	492.475	489.800	492.800
489.500	492.500	489.825	492.825
489.525	492.525	489.850	492.850
489.550	492.550	489.875	492.875
489.575	492.575	489.900	492.900
489.600	492.600	489.925	492.925
489.625	492.625	489.950	492.950
489.650	492.650	489.975	492.975
489.675	492.675	490.000	493.000



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Central	Subscriber	Central	Subscriber
489.700	.....	492.700	

(8) *Interstitial channels.* Interstitial channels are those with center frequencies offset by ±12.5 kHz from the listed center frequencies. The FCC may assign interstitial channels to offshore stations in Zone A subject to the following conditions:

(i) Offshore stations transmitting on interstitial channels must be located east of W.92° longitude.

(ii) Operations on interstitial channels are considered to be secondary to operations on channels with the listed center frequencies.

(iii) Offshore stations operating on interstitial channels must be used only for voice grade general communications or to provide for private line service.

NOTE to paragraph (a) of §22.1007: These channels are contained in UHF TV Channel 17.

(b) *Zone B—Southern Louisiana—Texas.* (1) The geographical area in Zone B is bounded as follows:

From longitude W.87°45' on the East to longitude W.95°00' on the West and from the 4.8 kilometer (3 mile) limit along the Gulf of Mexico shoreline on the North to the limit of the Outer Continental Shelf on the South.

(2) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for voice-grade general communications and private line service:

Central	Subscriber	Central	Subscriber
485.025	.....	482.025	.....
485.050	.....	482.050	.....
485.075	.....	482.075	.....
485.100	.....	482.100	.....
485.125	.....	482.125	.....
485.150	.....	482.150	.....
485.175	.....	482.175	.....
485.200	.....	482.200	.....
485.225	.....	482.225	.....
485.250	.....	482.250	.....
485.275	.....	482.275	.....
485.300	.....	482.300	.....
485.325	.....	482.325	.....
485.350	.....	482.350	.....
485.375	.....	482.375	.....
485.400	.....	482.400	.....
485.425	.....	482.425	.....
485.450	.....	482.450	.....
485.475	.....	482.475	.....

Central	Subscriber	Central	Subscriber
485.500	.....	482.500	.....
485.525	.....	482.525	.....
485.550	.....	482.550	.....
485.575	.....	482.575	.....
485.600	.....	482.600	.....
485.625	.....	482.625	.....
485.650	.....	482.650	.....
485.675	.....	482.675	.....
485.700	.....	482.700	.....
485.725	.....	482.725	.....
485.750	.....	482.750	.....
485.775	.....	482.775	.....
485.800	.....	482.800	.....
485.825	.....	482.825	.....
485.850	.....	482.850	.....
485.875	.....	482.875	.....
485.900	.....	482.900	.....
485.925	.....	482.925	.....
485.950	.....	482.950	.....
485.975	.....	482.975	.....
486.000	.....	483.000	.....

NOTE to paragraph (b) of §22.1007: These channels are contained in UHF TV Channel 16.

(c) *Zone C—Southern Texas.* The geographical area in Zone C is bounded as follows:

Longitude W.94°00' on the East, the 4.8 kilometer (3 mile) limit on the North and West, a 282 kilometer (175 mile) radius from the reference point at Linares, N.L., Mexico on the Southwest, latitude N.26°00' on the South, and the limits of the outer continental shelf on the Southeast.

(1) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for emergency auto alarm and voice transmission pertaining to emergency conditions only.

Central	Subscriber
476.950	..... 479.950

(2) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for voice-grade general communications and private line service:

476.025	.....	479.025	
476.050	.....	479.050	
476.075	.....	479.075	
476.100	.....	479.100	
476.125	.....	479.125	
476.150	.....	479.150	
476.175	.....	479.175	
476.200	.....	479.200	

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476.250  
476.275  
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480.850  
480.875  
480.900  
480.925  
480.950  
480.975

[59 FR 59507, Nov. 17, 1994; 60 FR 9891, Feb. 22, 1995]

**§ 22.1009 Transmitter locations.**

The rules in this section establish limitations on the locations from which stations in the Offshore Radiotelephone Service may transmit.

(a) *All stations.* Offshore stations must not transmit from locations outside the boundaries of the appropriate zones specified in § 22.1007. Offshore stations must not transmit from locations within 241 kilometers (150 miles) of any full-service television station that transmits on the TV channel containing the channel on which the offshore station transmits.

(b) *Airborne subscriber stations.* Airborne subscriber stations must not transmit from altitudes exceeding 305 meters (1000 feet) above mean sea level. Airborne mobile stations in Zone A must not transmit from locations within 129 kilometers (80 miles) of Lake Charles, Louisiana. Airborne mobile stations in Zone B must not transmit from locations within 129 kilometers (80 miles) of Lafayette, Louisiana. Airborne mobile stations in Zone C must not transmit from locations within 129 kilometers (80 miles) of Corpus Christi or locations within 129 kilometers (80 miles) of Houston, Texas.

**§ 22.1011 Antenna height limitations.**

The antenna height of offshore stations must not exceed 61 meters (200 feet) above mean sea level. The antenna height of offshore surface mobile stations must not exceed 10 meters (30 feet) above the waterline.

**§ 22.1013 Effective radiated power limitations.**

The effective radiated power (ERP) of transmitters in the Offshore Radiotelephone Service must not exceed the limits in this section.

(a) *Maximum power.* The ERP of transmitters in this service must not exceed 1000 Watts under any circumstances.

(b) *Mobile transmitters.* The ERP of mobile transmitters must not exceed 100 Watts. The ERP of mobile transmitters, when located within 32 kilometers (20 miles) of the 4.8 kilometer (3 mile) limit, must not exceed 25 Watts. The ERP of airborne mobile stations must not exceed 1 Watt.

(c) *Protection for TV Reception.* The ERP limitations in this paragraph are intended to reduce the likelihood that interference to television reception from offshore radiotelephone operations will occur.

(1) *Co-channel protection.* The ERP of offshore stations must not exceed the limits in Table I-1 of this section. The limits depend upon the height above mean sea level of the offshore transmitting antenna and the distance between the antenna location of the offshore transmitter and the antenna location of the main transmitter of the nearest full-service television station that transmits on the TV channel containing the channel on which the offshore station transmits.

(2) *Adjacent channel protection.* The ERP of offshore stations located within 128.8 kilometers (80 miles) of the main transmitter antenna of a full service TV station that transmits on a TV channel adjacent to the TV channel which contains the channel on which the offshore station transmits must not exceed the limits in the Table I-2 of § 22.1015. The limits depend upon the height above mean sea level of the offshore transmitting antenna and the distance between the location of the offshore transmitter and the 4.8 kilometer (3 mile) limit.

TABLE I-1.—MAXIMUM ERP (WATTS)—  
Continued

Distance	30 meters (100 feet)	45 meters (150 feet)	61 meters (200 feet)
266 km (165 mi) .....	95	80	70
258 km (160 mi) .....	65	55	50
249 km (155 mi) .....	50	40	35
241 km (150 mi) .....	35	30	25

**§ 22.1015 Repeater operation.**

Offshore central stations may be used as repeater stations provided that the licensee is able to maintain control of the station, and in particular, to turn the transmitter off, regardless of whether associated subscriber stations are transmitting at the time.

TABLE I-2.—MAXIMUM ERP (WATTS)

Distance from the 4.8 km (3 mi) limit	30 meters (100 feet)	61 meters (200 feet)
6.4 km (4 mi) .....	25	6
8.0 km (5 mi) .....	40	10
9.7 km (6 mi) .....	65	15
11.3 km (7 mi) .....	100	25
12.9 km (8 mi) .....	150	35
14.5 km (9 mi) .....	215	50
16.1 km (10 mi) .....	295	70
17.7 km (11 mi) .....	400	100
19.3 km (12 mi) .....	530	130
20.9 km (13 mi) .....	685	170
22.5 km (14 mi) .....	870	215
24.1 km (15 mi) .....	1000	270
25.7 km (16 mi) .....	1000	415
27.4 km (17 mi) .....	1000	505
29.0 km (18 mi) .....	1000	610
30.6 km (19 mi) .....	1000	730
32.2 km (20 mi) .....	1000	865
33.8 km (21 mi) .....	1000	1000

**§ 22.1025 Permissible communications.**

Offshore central stations must communicate only with subscriber stations (fixed, temporary-fixed, mobile and airborne). Offshore subscriber stations must normally communicate only with and through offshore central stations. Stations in the Offshore Radiotelephone Service may communicate through relay stations authorized in this service.

**§ 22.1031 Temporary fixed stations.**

The FCC may, upon proper application therefor, authorize the construction and operation of temporary fixed stations in the Offshore Radiotelephone service to be used only when the service of permanent fixed stations

TABLE I-1.—MAXIMUM ERP (WATTS)

Distance	30 meters (100 feet)	45 meters (150 feet)	61 meters (200 feet)
338 km (210 mi) .....	1000	1000	1000
330 km (205 mi) .....	1000	900	800
2 km (200 mi) .....	800	710	630
314 km (195 mi) .....	590	520	450
306 km (190 mi) .....	450	400	330
298 km (185 mi) .....	320	280	240
290 km (180 mi) .....	250	210	175
282 km (175 mi) .....	180	150	130
274 km (170 mi) .....	175	110	100

is disrupted by storms or emergencies or is otherwise unavailable.

(a) *Six month limitation.* If it is necessary for a temporary fixed station to remain at the same location for more than six months, the licensee of that station must apply for authorization to operate the station at the specific location at least 30 days before the end of the six month period.

(b) *International communications.* Communications between the United States and Mexico must not be carried using a temporary fixed station without prior authorization from the FCC. Licensees desiring to carry such communications should apply sufficiently in advance to allow for the time necessary to coordinate with Canada or Mexico.

**§ 22.1035 Construction period.**

The construction period (see § 22.142) for offshore stations is 18 months.

**§ 22.1037 Application requirements for offshore stations.**

Applications for new Offshore Radiotelephone Service stations must contain an exhibit showing that:

(a) The applicant has notified all licensees of offshore stations located within 321.8 kilometers (200 miles) of the proposed offshore station, by providing the following data, at least 30 days before filing the application:

- (1) The name, business address, channel coordinator, and telephone number of the applicant;
- (2) The location and geographical coordinates of the proposed station;
- (3) The channel and type of emission;
- (4) The height and type of antenna;
- (5) The bearing of the main lobe of the antenna; and,
- (6) The effective radiated power.

(b) The proposed station will not interfere with the primary ORS channels by compliance with the following separations:

- (1) Co-channel to a distance of 241.4 kilometers (150 miles).
- (2) If interstitial channels are used, adjacent channels ( $\pm 12.5$  kHz) to a distance of 80.5 kilometers (50 miles).
- (3) Third order intermodulation channels ( $\pm 12.5$  kHz) to a distance of 32.2 kilometers (20 miles).

(4) If the proposed transmitting antenna site is located west of longitude W.93°40', and within 32.2 kilometers (20 miles) of the shoreline, and proposed use of the channels listed in § 22.1007(b), no third-order intermodulation interference would be caused to any base or mobile station using the channels between 488 and 494 MHz.

**PART 23—INTERNATIONAL FIXED PUBLIC RADIOCOMMUNICATION SERVICES**

FIXED PUBLIC SERVICES

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- 23.12 Use of radiotelegraph emissions by radiotelephone stations.
- 23.13 Types of emission.
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