

V. Selected FCC  
Auction Rules &  
Partial  
Bibliography



# **Part 24**

## **of the FCC Rules**

### **Unofficial Staff Compilation**

**Commercial Radio Division  
Wireless Telecommunications Bureau**

This is an unofficial staff compilation of Part 24 of the FCC Rules. This provides applicants with a compilation of the Rules until such time as the Government Printing Office publishes a current version in the Code of Federal Regulations (CFR). Applicants need to look to the official version of the Rules contained in Commission Orders and in the Federal Register. The official Rules will govern in the case of conflicts. Relevant Orders adopted to date by the Commission are provided in this Bidder's Information Package under Tab V - C, D & E. Applicants should be aware that relevant rules are also contained in Parts 1 and 20 of the Commission's Rules. Applicants also need to stay apprised of any rule changes that occur subsequent to release of this Bidder's Information Package.

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**Authority:** 47 U.S.C. Sections 154, 301, 302, 303, and 332, unless otherwise noted.  
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## Subpart A – General Information

### § 24.1 Basis and purpose.

This section contains the statutory basis for this part of the rules and provides the purpose for which this part is issued.

(a) *Basis*. The rules for the personal communications services (PCS) in this part are promulgated under the provisions of the Communications Act of 1934, as amended, that vests authority in the Federal Communications Commission to regulate radio transmission and to issue licenses for radio stations.

(b) *Purpose*. This part states the conditions under which portions of the radio spectrum are made available and licensed for PCS.

(c) *Scope*. The rules in this part apply only to stations authorized under this part. Rules in subparts D and E apply only to stations authorized under those subparts.

### § 24.2 Other applicable rule parts.

Other FCC rule parts applicable to licensees in the personal communications services include the following:

(a) *Part 0*. This part describes the Commission's organization and delegations of authority. Part 0 of this chapter also lists available Commission publications, standards and procedures for access to Commission records, and location of Commission Field Offices.

(b) *Part 1*. This part includes rules of practice and procedure for license applications, adjudicatory proceedings, procedures for reconsideration and review of the Commission's actions; provisions concerning violation notices and forfeiture proceedings; and the environmental requirements that, if applicable, must be complied with prior to the initiation of construction.

(c) *Part 2*. This part contains the Table of Frequency Allocations and special requirements in international regulations, recommendations, agreements, and treaties. This part also contains standards and procedures concerning the marketing and importation of radio frequency devices, and for obtaining equipment authorization.

(d) *Part 5*. This part contains rules prescribing the manner in which parts of the radio frequency spectrum may be made available for experimentation.

(e) *Part 15*. This part contains rules setting out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of part 15 devices. Unlicensed PCS devices operate under subpart D of part 15.

(f) *Part 17*. This part contains requirements for construction, marking and lighting of antenna towers.

(g) *Part 20*. This part governs commercial mobile radio services.

(h) *Part 21*. This part contains rules concerning point-to-point microwave service authority

relating to communications common carriers.

(i) *Part 68*. This part contains technical standards for connection of terminal equipment to the telephone network.

(j) *Part 94*. This part contains rules concerning the private microwave service relating to point-to-point communication requirements.

### § 24.3 Permissible communications.

PCS licensees may provide any mobile communications service on their assigned spectrum. Fixed services may be provided only if ancillary to mobile operations. Broadcasting as defined in the Communications Act is prohibited.

### § 24.5 Terms and definitions.

*Assigned Frequency*. The center of the frequency band assigned to a station.

*Authorized Bandwidth*. The maximum width of the band of frequencies permitted to be used by a station. This is normally considered to be the necessary or occupied bandwidth, whichever is greater.

*Average Terrain*. The average elevation of terrain between 3 and 16 kilometers from the antenna site.

*Base Station*. A land station in the land mobile service.

*Broadband PCS*. PCS services operating in the 1850-1890 MHz, 1930-1970 MHz, 2130-2150 MHz, and 2180-2200 MHz bands.

*Effective Radiated Power (e.r.p.) (in a given direction)*. The product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction.

*Equivalent Isotropically Radiated Power (e.i.r.p.)*. The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

*Fixed Service*. A radio communication service between specified fixed points.

*Fixed Station*. A station in the fixed service.

*Land Mobile Service*. A mobile service between base stations and land mobile stations, or between land mobile stations.

*Land Mobile Station*. A mobile station in the land mobile service capable of surface movement within the geographic limits of a country or continent.

*Land Station*. A station in the mobile service not intended to be used while in motion.

*Mobile Service*. A radio communication service between mobile and land stations, or between mobile stations.

*Mobile Station*. A station in the mobile service intended to be used while in motion or during halts at unspecified points.

*Narrowband PCS*. PCS services operating in the 901-902 MHz, 930-931 MHz, and 940-941 MHz bands.

*National Geodetic Reference System (NGRS)*: The name given to all geodetic control data contained in the National Geodetic Survey (NGS) data base. (Source: National Geodetic

Survey, U.S. Department of Commerce)

*Personal Communications Services (PCS)*. Radio communications that encompass mobile and ancillary fixed communication that provide services to individuals and businesses and can be integrated with a variety of competing networks.

## **Subpart B – Applications and Licenses**

### **GENERAL FILING REQUIREMENTS**

#### **§ 24.10 Scope.**

This subpart contains some of the procedures and requirements for filing applications for licenses in the personal communications services. One also should consult Subparts F and G of this part. Other Commission rule parts of importance that may be referred to with respect to licensing and operation of radio services governed under this part include 47 CFR parts 0, 1, 2, 5, 15, 17 and 20.

#### **§ 24.11 Initial authorization.**

(a) An applicant must file an application for an initial authorization in each market and frequency block desired.

(b) Blanket licenses are granted for each market and frequency block. Applications for individual sites are not required and will not be accepted.

#### **§ 24.12 Eligibility.**

Any entity, other than those precluded by section 310 of the Communications Act of 1934, as amended, 47 U.S.C. § 310, or §§ 24.202(c) or 24.204, is eligible to hold a license under this part.

#### **§ 24.15 License period.**

Licenses for service areas will be granted for ten year terms from the date of original issuance or renewal.

#### **§ 24.16 Criteria for comparative renewal proceedings.**

A renewal applicant involved in a comparative renewal proceeding shall receive a preference, commonly referred to as a renewal expectancy, which is the most important comparative factor to be considered in the proceeding, if its past record for the relevant license period demonstrates that the renewal applicant:

(a) 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 might just minimally warrant renewal; and

(b) Has substantially complied with applicable Commission rules, policies and the Communications Act.

### **Subpart C – Technical Standards**

#### **§ 24.50 Scope.**

This subpart sets forth the technical requirements for use of the spectrum and equipment in the personal communications services.

#### **§ 24.51 Equipment authorization.**

(a) Each transmitter utilized for operation under this part and each transmitter marketed, as set forth in § 2.803 of this chapter, must be of a type that has been authorized by the Commission under its type acceptance procedure for use under this part.

(b) The Commission periodically publishes a list of type accepted equipment, entitled "Radio Equipment List, Equipment Accepted for Licensing." Copies of this list are available for public reference at the Commission's offices in Washington, D.C., at each of its field offices, and may be ordered from its copy contractor.

(c) Any manufacturer of radio transmitting equipment to be used in these services may request equipment authorization following the procedures set forth in subpart J of part 2 of this chapter. Equipment authorization for an individual transmitter may be requested by an applicant for a station authorization by following the procedures set forth in part 2 of this chapter. Such equipment if approved or accepted will not normally be included in the Commission's Radio Equipment List but will be individually enumerated on the station authorization.

(d) Applicants for type acceptance of transmitters that operate in these services must determine that the equipment complies with IEEE C95.1-1991, "IEEE Standards for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz" as measured using methods specified in IEEE C95.3-1991, "Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave." The applicant for type acceptance is required to submit a statement affirming that the equipment complies with these standards as measured by an approved method and to maintain a record showing the basis for the statement of compliance with IEEE C.95.1-1991.

## **§ 24.52 RF hazards.**

- (a) Licensees and manufacturers are required to ensure that their facilities and equipment comply with IEEE C95.1-1991 (ANSI/IEEE C95.1-1992), "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz." Measurement methods are specified in IEEE C95.3-1991, "Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave." Copies of these standards are available from IEEE Standards Board, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331. Telephone: 1-800-678-4333. The limits for both "controlled" and "uncontrolled" environments, as defined by IEEE C95.1-1991, will apply to all PCS base and mobile stations, as appropriate. The application for equipment authorization must contain a statement confirming compliance with IEEE C95.1-1991. Technical information showing the basis for this statement must be submitted to the Commission upon request.
- (b) PCS hand-held devices whose maximum radiated power is 100 milliwatts or less are not required to be evaluated for compliance with ANSI/IEEE SAR (specific absorption rate) requirements, as long as a 2.5 cm separation distance is maintained between the radiating structure and the body of the user. (The ANSI/IEEE standard uses the term "radiated power," meaning input power to the antenna.)
- (c) For further information on the Commission's environmental rules see §§ 1.1301 through 1.1319 of this chapter.

## **§ 24.53 Calculation of height above average terrain (HAAT).**

- (a) HAAT is determined by subtracting average terrain elevation from antenna height above mean sea level.
- (b) Average terrain elevation shall be calculated using elevation data from a 30 arc second or better Digital Elevation Models (DEMs). DEM data is available from United States Geological Survey (USGS). The data file shall be identified. If 30 arc second data is used, the elevation data must be processed for intermediate points using interpolation techniques; otherwise, the nearest point may be used. If DEM data is not available, elevation data from the Defense Mapping Agency's Digital Chart of the World (DCW) may be used.
- (c) Radial average terrain elevation is calculated as the average of the elevation along a straight line path from 3 to 16 kilometers extending radially from the antenna site. At least 50 evenly spaced data points for each radial shall be used in the computation.
- (d) Average terrain elevation is the average of the eight radial average terrain elevations (for the eight cardinal radials).
- (e) The position location of the antenna site shall be determined to an accuracy of no less than  $\pm 5$  meters in both the horizontal (latitude and longitude) and vertical (ground elevation) dimensions with respect to the National Geodetic Reference System.

## **Subpart D – Narrowband PCS**

## **§ 24.100 Scope.**

This subpart sets out the regulations governing the licensing and operations of personal communications services authorized in the 901-902, 930-931, and 940-941 MHz bands (900 MHz band).

## **§ 24.101 Multiple ownership restrictions.**

(a) Narrowband PCS licensees shall not have an ownership interest in more than three of the 26 channels listed in § 24.129 in any geographic area. For purposes of this restriction, a narrowband PCS licensee is: (1) Any institutional investor, as defined in § 24.720(h), with an ownership interest of ten or more percent in a narrowband PCS license; and (2) Any other person or entity with an ownership interest of five or more percent in a narrowband PCS license.

(b) In cases where a party had indirect ownership, through an interest in an intervening entity (or entities) that has ownership in the narrowband license, that indirect ownership shall be attributable if the percentages of ownership at each level, multiplied together, equal five or more percent ownership of the narrowband PCS license, except that if the ownership percentage for an interest in any link in the chain exceeds 50 percent or represents actual control, it shall be treated as if it were a 100 percent interest.

Example: Party X has a non-controlling ownership interest of 25 percent in Company Y, which in turn has a non-controlling ownership interest of 10 percent in Company Z, the narrowband PCS licensee. Party X's effective ownership interest in Company Z is Party X's ownership interest in Company Y (25 percent) times Company Y's ownership interest in Company Z (10 percent). Therefore, Party X's effective ownership interest in Company Z is 2.5 percent, and is not attributable.

(c) Notwithstanding paragraph (b) of this section, the following interests shall not constitute attributable ownership interests for purposes of paragraph (a) of this section:

(1) A limited partnership interest held by an institutional investor (as defined § 24.720(h)) where the limited partner is not materially involved, directly or indirectly, in the management or operation of the PCS holdings of the partnership, and the licensee so certifies. The criteria which would assure adequate insulation for the purposes of this certification require:

- (i) Prohibiting limited partners from acting as employees of the limited partnership if responsibilities relate to the carrier activities of the licensee;
- (ii) Barring the limited partners from serving as independent contractors;
- (iii) Restricting communication among limited partners and the general partner regarding day-to-day activities of the licensee;
- (iv) Empowering the general partner to veto admissions of new general partners;
- (v) Restricting the circumstances in which the limited partners can remove the general partner;

(vi) Prohibiting the limited partners from providing services to the partnership relating to the PCS holdings of the licensee; and

(vii) Stating that the limited partners may not become involved in the management or operation of the licensee. See 47 CFR 73.3555 Note 2(g)(2); Memorandum of Opinion and Order in MM Docket 83-46, FCC 85-252 (released June 24, 1985), as modified on reconsideration in the Memorandum of Opinion and Order in MM Docket No. 83-46, FCC 86-410 (released November 28, 1986).

(2) Institutional investors who held limited partnership interests prior to March 2, 1995 shall be granted one year from that date to amend their limited partnership agreements to comply with the insulation rules and so certify to the Commission. During this transition period, the licensee in which an institutional investor holds an interest shall also certify to the Commission that the institutional investor limited partner(s) are not materially involved, directly or indirectly, in the management or operation of the licensee.

#### **§ 24.102 Service areas.**

Narrowband PCS service areas are nationwide, regional, Major Trading Areas (MTAs) and Basic Trading Areas (BTAs) as defined below. MTAs and BTAs are based on the Rand McNally 1992 Commercial Atlas & Marketing Guide, 123rd Edition, at pages 38-39 ("BTA/MTA Map"). Rand McNally organizes the 50 States and the District of Columbia into 47 MTAs and 487 BTAs. The BTA/MTA Map is available for public inspection at the Office of Engineering and Technology's Technical Information Center, Room 7317, 2025 M Street, NW., Washington, DC.

(a) The nationwide service area consists of the fifty states, the District of Columbia, American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and United States Virgin Islands.

(b) The regional service areas are defined as follows:

(1) Region 1 (Northeast): The Northeast Region consists of the following MTAs: Boston-Providence, Buffalo-Rochester, New York, Philadelphia, and Pittsburgh.

(2) Region 2 (South): The South Region consists of the following MTAs: Atlanta, Charlotte-Greensboro-Greenville-Raleigh, Jacksonville, Knoxville, Louisville-Lexington-Evansville, Nashville, Miami-Fort Lauderdale, Richmond-Norfolk, Tampa-St. Petersburg-Orlando, and Washington-Baltimore; and, Puerto Rico and United States Virgin Islands.

(3) Region 3 (Midwest): The Midwest Region consists of the following MTAs: Chicago, Cincinnati-Dayton, Cleveland, Columbus, Des Moines-Quad Cities, Detroit, Indianapolis, Milwaukee, Minneapolis-St. Paul, and Omaha.

(4) Region 4 (Central): The Central Region consists of the following MTAs: Birmingham, Dallas-Fort Worth, Denver, El Paso-Albuquerque, Houston, Kansas City, Little Rock, Memphis-Jackson, New Orleans-Baton Rouge, Oklahoma City, San Antonio, St. Louis, Tulsa, and Wichita.

(5) Region 5 (West): The West Region consists of the following MTAs: Honolulu, Los Angeles-San Diego, Phoenix, Portland, Salt Lake City, San Francisco-Oakland-San Jose, Seattle (including Alaska), and Spokane-Billings; and, American Samoa, Guam, and the Northern Mariana Islands.

(c) The MTA service areas are based on the Rand McNally 1992 *Commercial Atlas & Marketing Guide*, 123rd Edition, at pages 38-39, with the following exceptions and additions:

- (1) Alaska is separated from the Seattle MTA and is licensed separately.
- (2) Guam and the Northern Mariana Islands are licensed as a single MTA-like area.
- (3) Puerto Rico and the United States Virgin Islands are licensed as a single MTA-like area.

(4) American Samoa is licensed as a single MTA-like area.

(d) The BTA service areas are based on the Rand McNally 1992 *Commercial Atlas & Marketing Guide*, 123rd Edition, at pages 38-39, with the following additions licensed separately as BTA-like areas: American Samoa; Guam; Northern Mariana Islands; Mayagüez/Aguadilla-Ponce, Puerto Rico; San Juan, Puerto Rico; and the United States Virgin Islands. The Mayagüez/Aguadilla-Ponce BTA-like service area consists of the following municipios: Adjuntas, Aguada, Aguadilla, Añasco, Arroyo, Cabo Rojo, Coamo, Guánica, Guayama, Guayanilla, Hormigueros, Isabela, Jayuya, Juana Díaz, Lajas, Las Marías, Maricao, Maunabo, Mayagüez, Moca, Patillas, Peñuelas, Ponce, Quebradillas, Rincón, Sabana Grande, Salinas, San Germán, Santa Isabel, Villalba, and Yauco. The San Juan BTA-like service area consists of all other municipios in Puerto Rico.

#### **§ 24.103 Construction requirements.**

(a) Nationwide narrowband PCS licensees shall construct base stations that provide coverage to a composite area of 750,000 square kilometers or serve 37.5 percent of the U.S. population within five years of initial license grant date; and, shall construct base stations that provide coverage to a composite area of 1,500,000 square kilometers or serve 75 percent of the U.S. population within ten years of initial license grant date.

(b) Regional narrowband PCS licensees shall construct base stations that provide coverage to a composite area of 150,000 square kilometers or serve 37.5 percent of the population of the service area within five years of initial license grant date; and, shall construct base stations that provide coverage to a composite area of 300,000 square kilometers or serve 75 percent of the service area population within ten years of initial license grant date.

(c) MTA narrowband PCS licensees shall construct base stations that provide coverage to a composite area of 75,000 square kilometers or 25 percent of the geographic area, or serve 37.5 percent of the population of the service area within five years of initial license grant date; and, shall construct base stations that provide coverage to a composite area of 150,000 square kilometers or 50 percent of the geographic area, or serve 75 percent of the population of the service area within ten years of initial license grant date.

(d) BTA narrowband PCS licensees shall construct at least one base station and begin providing service in its BTA within one year of initial license grant date.

(e) In demonstrating compliance with the above construction requirements, licensees must base their calculations on signal field strengths that ensure reliable service for the technology utilized.

(1) For the purpose of this section, the service radius of a base station may be calculated



using the following formula:

$$d_{km} = 2.53 \times h_m^{0.34} \times p^{0.17}$$

where  $d_{km}$  is the radial distance in kilometers,  
 $h_m$  is the antenna HAAT of the base station in meters, and  
 $p$  is the e.r.p. of the base station in watts.

(2) Alternatively, licensees may use any service radius contour formula developed or generally used by industry, provided that such formula is based on the technical characteristics of their system.

(f) Upon meeting the five and ten year benchmarks in paragraphs (a), (b) and (c) of this section, licensees shall file a map and other supporting documentation that demonstrates compliance with the geographic area or population coverage requirement. BTA licensees shall file a statement indicating commencement of service. The filing must be received at the Commission on or before expiration of the relevant period.

(g) If the sale of a license is approved, the new licensee is held to the original build-out requirement.

(h) Failure by a licensee to meet the above construction requirements shall result in forfeiture of the license and ineligibility to regain it.

**Note:** Population-based construction requirements contained in this section shall be based on the 1990 census.

## § 24.129 Frequencies.

The following frequencies are available for narrowband PCS. All licenses on channels indicated with an (\*) will be eligible for bidding credits of 25 percent, and all licenses indicated with an (\*\*) will be eligible for bidding credits of 40 percent, as set forth in § 24.309(b) if competitive bidding is used to award such licenses.

(a) Eleven frequencies are available for assignment on a nationwide basis as follows:

(1) Five 50 kHz channels paired with 50 kHz channels:

Channel 1:	940.00-940.05 and 901.00-901.05 MHz;
Channel 2:	940.05-940.10 and 901.05-901.10 MHz;
Channel 3:	940.10-940.15 and 901.10-901.15 MHz;
Channel 4:	940.15-940.20 and 901.15-901.20 MHz; and,
Channel 5:	940.20-940.25 and 901.20-901.25 MHz.*

(2) Three 50 kHz channels paired with 12.5 kHz channels:

Channel 6: 930.40-930.45 and 901.7500-901.7625 MHz;  
 Channel 7: 930.45-930.50 and 901.7625-901.7750 MHz; and,  
 Channel 8: 930.50-930.55 and 901.7750-901.7875 MHz;\*

(3) Three 50 kHz unpaired channels:

Channel 9: 940.75-940.80 MHz;  
 Channel 10: 940.80-940.85 MHz; and,  
 Channel 11: 940.85-940.90 MHz.\*

(b) Six frequencies are available for assignment on a regional basis as follows:

(1) Two 50 kHz channels paired with 50 kHz channels:

Channel 12: 940.25-940.30 and 901.25-901.30 MHz; and,  
 Channel 13: 940.30-940.35 and 901.30-901.35 MHz.\*\*

(2) Four 50 kHz channels paired with 12.5 kHz channels:

Channel 14: 930.55-930.60 and 901.7875-901.8000 MHz;  
 Channel 15: 930.60-930.65 and 901.8000-901.8125 MHz;  
 Channel 16: 930.65-930.70 and 901.8125-901.8250 MHz; and,  
 Channel 17: 930.70-930.75 and 901.8250-901.8375 MHz.\*\*

(c) Seven frequencies are available for assignment on a MTA basis as follows:

(1) Two 50 kHz channels paired with 50 kHz channels:

Channel 18: 940.35-940.40 and 901.35-901.40 MHz; and,  
 Channel 19: 940.40-940.45 and 901.40 -901.45 MHz.\*

(2) Three 50 kHz channels paired with 12.5 kHz channels:

Channel 20: 930.75-930.80 and 901.8375-901.8500 MHz;  
 Channel 21: 930.80-930.85 and 901.8500-901.8625 MHz; and,  
 Channel 22: 930.85-930.90 and 901.8625-901.8750 MHz.\*

(3) Two 50 kHz unpaired channels:

Channel 23: 940.90-940.95 MHz; and,  
 Channel 24: 940.95-941.00 MHz.\*

(d) Two 50 kHz channels paired with 12.5 kHz channels are available for assignment on a BTA basis:

Channel 25: 930.90-930.95 and 901.8750-901.8875 MHz; and,  
 Channel 26: 930.95-931.00 and 901.8875-901.9000 MHz.\*

**Note 1:** Operations in markets or portions of markets which border other countries, such as Canada and Mexico, will be subject to on-going coordination arrangements with neighboring countries.

#### **§ 24.130 Paging response channels.**

(a) The channels listed in paragraphs (b) and (c) of this section are available to licensees of conventional one-way paging base stations licensed pursuant to Part 22 or Part 90 of this chapter as of the application filing deadline for the paging response channels. Eligibility for response channels shall be based on the authorized service area of each existing paging licensee. This service area is defined as the area within a 32.2 kilometer radius of the licensee's base stations or, in the case of "F," "G," "H," or "K" class stations under Sections 22.502(c) and 90.495(b)(1) of this chapter, as the area that is within the service area radius specified in Section 22.504(b)(2) of this chapter. Existing paging licensees are eligible to bid for any response channel in any BTA or MTA which encompasses an authorized base station or which is partly or wholly overlapped by a licensee's service area. These channels shall be used only in paired communications with existing paging channels to provide mobile-to-base station communications. Until two years after the date of initial license grant, eligible paging licensees are limited to a maximum of two response channels within the same geographic area. Licenses for paging response channels are not counted toward the multiple ownership restrictions of Section 24.101.

(b) The following four 12.5 kHz unpaired channels are available for assignment on a MTA basis:

- A: 901.9000-901.9125 MHz;
- B: 901.9125-901.9250 MHz;
- C: 901.9250-901.9375 MHz; and
- D: 901.9375-901.9500 MHz.

(c) The following four 12.5 kHz unpaired channels are available for assignment on a BTA basis:

- E: 901.9500-901.9625 MHz;
- F: 901.9625-901.9750 MHz;
- G: 901.9750-901.9875 MHz; and
- H: 901.9875-902.0000 MHz.

#### **§ 24.131 Authorized bandwidth.**

The authorized bandwidth of narrowband PCS channels will be 10 kHz for 12.5 kHz channels and 45 kHz for 50 kHz channels. For aggregated adjacent channels, a maximum authorized bandwidth of 5 kHz less than the total aggregated channel width is permitted.

**§ 24.132 Power and antenna height limits.**

(a) Stations transmitting in the 901-902 MHz band are limited to 7 watts e.r.p.

(b) Mobile stations transmitting in the 930-931 MHz and 940-941 MHz bands are limited to 7 watts e.r.p.

(c) Base stations transmitting in the 930-931 MHz and 940-941 MHz bands are limited to 3500 watts e.r.p. per authorized channel and are unlimited in antenna height except as provided in paragraph (d) below.

(d) MTA and BTA base stations located between 200 kilometers (124 miles) and 80 kilometers (50 miles) from their licensed service area border are limited to the power levels in following table:

Antenna HAAT in meters (feet) (See § 24.53 for HAAT calculation method)	Effective Radiated Power (e.r.p.) (watts)
183 (600) and below.....	3500
183 (600) to 208 (682).....	3500 to 2584
208 (682) to 236 (775).....	2584 to 1883
236 (775) to 268 (880).....	1883 to 1372
268 (880) to 305 (1000).....	1372 to 1000
305 (1000) to 346 (1137).....	1000 to 729
346 (1137) to 394 (1292).....	729 to 531
394 (1292) to 447 (1468).....	531 to 387
447 (1468) to 508 (1668).....	387 to 282
508 (1668) to 578 (1895).....	282 to 206
578 (1895) to 656 (2154).....	206 to 150
656 (2154) to 746 (2447).....	150 to 109
746 (2447) to 848 (2781).....	109 to 80
848 (2781) to 963 (3160).....	80 to 58
963 (3160) to 1094 (3590).....	58 to 42
1094 (3590) to 1244 (4080).....	42 to 31
1244 (4080) to 1413 (4636).....	31 to 22
Above 1413 (4636).....	16

For heights between the values listed above, linear interpolation shall be used to determine maximum e.r.p.

(e) MTA and BTA base stations located less than 80 kilometers (50 miles) from the licensed service area border must limit their effective radiated power in accordance with the following formula:

$$P_w = 0.0175 \times d_{km}^{6.6666} \times h_m^{-3.1997}$$

$P_w$  is effective radiated power in watts.  
 $d_{km}$  is distance in kilometers.

$h_m$  is antenna HAAT in meters; see § 24.53 for HAAT calculation method.

(f) All power levels specified above are expressed in terms of the maximum power, averaged over a 100 millisecond interval, when measured with instrumentation calibrated in terms of an rms-equivalent voltage with a resolution bandwidth equal to or greater than the authorized bandwidth.

(g) Additionally, PCS stations will be subject to any power limits imposed by international agreements.

### § 24.133 Emission limits.

(a) The power of any emission shall be attenuated below the transmitter power (P), as measured in accordance with

§ 24.132(f), in accordance with the following schedule:

(1) For transmitters authorized a bandwidth greater than 10 kHz:

(i) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of up to and including 40 kHz: at least  $116 \log_{10} ((f_d+10)/6.1)$  decibels or 50 plus  $10 \log_{10} (P)$  decibels or 70 decibels, whichever is the lesser attenuation;

(ii) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of more than 40 kHz: at least  $43 + \log_{10} (P)$  decibels or 80 decibels, whichever is the lesser attenuation.

(2) For transmitters authorized a bandwidth of 10 kHz:

(i) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of up to and including 20 kHz: at least  $116 \times \log_{10} ((f_d+5)/3.05)$  decibels or  $50 + 10 \times \log_{10} (P)$  decibels or 70 decibels, whichever is the lesser attenuation;

(ii) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of more than 20 kHz: at least  $43 + 10 \log_{10} (P)$  decibels or 80 decibels, whichever is the lesser attenuation.

(b) The measurements of emission power can be expressed in peak or average values provided they are expressed in the same parameters as the transmitter power.

(c) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

(d) A minimum spectrum analyzer resolution bandwidth of 300 Hz shall be used when showing compliance with paragraphs (a)(1)(i) & (ii) and (a)(2)(i) & (ii).

### § 24.134 Co-channel separation criteria.

The minimum co-channel separation distance between base stations in different service areas

is 113 kilometers (70 miles). A co-channel separation distance is not required for the base stations of the same licensee or when the affected parties have agreed to other co-channel separation distances.

#### **§ 24.135 Frequency stability.**

(a) The frequency stability of the transmitter shall be maintained within  $\pm 0.0001$  percent ( $\pm 1$  ppm) of the center frequency over a temperature variation of  $-30^{\circ}$  Celsius to  $+50^{\circ}$  Celsius at normal supply voltage, and over a variation in the primary supply voltage of 85 percent to 115 percent of the rated supply voltage at a temperature of  $20^{\circ}$  Celsius.

(b) For battery operated equipment, the equipment tests shall be performed using a new battery without any further requirement to vary supply voltage.

(c) It is acceptable for a transmitter to meet this frequency stability requirement over a narrower temperature range provided the transmitter ceases to function before it exceeds these frequency stability limits.

### **Subpart E – Broadband PCS**

#### **§ 24.200 Scope.**

This subpart sets out the regulations governing the licensing and operations of personal communications services authorized in the 1850-1910 and 1930-1990 MHz bands.

#### **§ 24.202 Service areas.**

Broadband PCS service areas are Major Trading Areas (MTAs) and Basic Trading Areas (BTAs) as defined below. MTAs and BTAs are based on the Rand McNally 1992 *Commercial Atlas & Marketing Guide*, 123rd Edition, at pages 38-39 ("BTA/MTA Map"). Rand McNally organizes the 50 states and the District of Columbia into 47 MTAs and 487 BTAs. The BTA/MTA Map is available for public inspection as the Office of Engineering and Technology's Technical Information Center, room 7317, 2025 M Street, NW., Washington, DC.

(a) The MTA service areas are based on the Rand McNally 1992 *Commercial Atlas & Marketing Guide*, 123rd Edition, at pages 38-39, with the following exceptions and additions:

- (1) Alaska is separated from the Seattle MTA and is licensed separately.
- (2) Guam and the Northern Mariana Islands are licensed as a single MTA-like area.
- (3) Puerto Rico and the United States Virgin Islands are licensed as a single MTA-like area.

(4) American Samoa is licensed as a single MTA-like area.

(b) The BTA service areas are based on the Rand McNally 1992 *Commercial Atlas & Marketing Guide*, 123rd Edition, at pages 38-39, with the following additions licensed separately as BTA-like areas: American Samoa; Guam; Northern Mariana Islands;

Mayagüez/Aguadilla-Ponce, Puerto Rico; San Juan, Puerto Rico; and the United States Virgin Islands. The Mayagüez/Aguadilla-Ponce BTA-like service area consists of the following municipios: Adjuntas, Aguada, Aguadilla, Añasco, Arroyo, Cabo Rojo, Coamo, Guánica, Guayama, Guayanilla, Hormigueros, Isabela, Jayuya, Juana Díaz, Lajas, Las Marias, Mayagüez, Maricao, Maunabo, Moca, Patillas, Peñuelas, Ponce, Quebradillas, Rincón, Sabana Grande, Salinas, San Germán, Santa Isabel, Villalba, and Yauco. The San Juan BTA-like service area consists of all other municipios in Puerto Rico.

#### **§ 24.203 Construction requirements.**

(a) Licensees of 30 MHz blocks must serve with a signal level sufficient to provide adequate service to at least one-third of the population in their licensed area within five years of being licensed and two-thirds of the population in their licensed area within 10 years of being licensed. Licensees may choose to define population using the 1990 census or the 2000 census. Failure by any licensee to meet these requirements will result in forfeiture or non-renewal of the license and the licensee will be ineligible to regain it.

(b) Licensees of 10 MHz blocks must serve with a signal level sufficient to provide adequate service to at least one-quarter of the population in their licensed area within five years of being licensed, or make a showing of substantial service in their licensed area within five years of being licensed. Population is defined as the 1990 population census. Licensees may elect to use the 2000 population census to determine the five-year construction requirement. Failure by any licensee to meet these requirements will result in forfeiture of the license and the licensee will be ineligible to regain it.

(c) Licensees must file maps and other supporting documents showing compliance with the respective construction requirements within the appropriate five- and ten-year benchmarks of the date of their initial licenses.

#### **§ 24.204 Cellular eligibility.**

(a) *10 MHz Limitation.* Until January 1, 2000, no license(s) for broadband PCS in excess of 10 MHz shall be granted to any party (including all parties under common control) if the grant of such license(s) will result in significant overlap of the PCS licensed service area(s) (MTAs or BTAs) and the cellular geographic service area(s) (CGSA) of licensee(s) in the Domestic Public Cellular Radio Telecommunications Service directly or indirectly owned, operated, or controlled by the same party.

(b) *15 MHz Limitation.* After January 1, 2000, no license(s) for broadband PCS in excess of 15 MHz shall be granted to any party (including all parties under common control) if the grant of such license(s) will result in significant overlap of the PCS licensed service area(s) (MTAs or BTAs) and the cellular geographic service area(s) (CGSA) of licensee(s) in the Domestic Public Cellular Radio Telecommunications Service directly or indirectly owned, operated, or controlled by the same party.

(c) *Significant Overlap.* For purposes of Subsections (a) and (b) of this section, significant

overlap of a PCS licensed service area and CGSA(s) occurs when ten or more percent of the population of the PCS service area, as determined by the 1990 census figures for the counties contained therein, is within the CGSA(s).

(d) *Ownership Attribution.* (1) For purposes of paragraphs (a) and (b) of this section, "control" means majority voting equity ownership, any general partnership interest, or any means of actual working control (including negative control) over the operation of the licensee, in whatever manner exercised.

(2) For purposes of applying paragraphs (a) and (b) of this section, and for purposes of § 24.229(c) (40 MHz limit in same geographic area), ownership and other interests in broadband PCS licensees or applicants and cellular licensees will be attributed to their holders pursuant to the following criteria:

(i) Partnership and other ownership interests and any stock interest amounting to 5 percent or more of the equity, or outstanding stock, or outstanding voting stock of a broadband PCS licensee or applicant will be attributable.

(ii) Partnership and other ownership interests and any stock interest amounting to 20 percent or more of the equity, or outstanding stock, or outstanding voting stock of a cellular licensee will be attributable, except that ownership will not be attributed unless the partnership and other ownership interests and any stock interest amount to 40 percent or more of the equity, or outstanding stock, or outstanding voting stock of a cellular licensee if the ownership interest is held by a small business, a rural telephone company, or a business owned by minorities and/or women, as these terms are defined in § 1.2110 of this chapter, or if the ownership interest is held by an entity with a non-controlling equity interest in a broadband PCS licensee or applicant that is a business owned by minorities and/or women.

(iii) Stock interests held in trust shall be attributed to any person who holds or shares the power to vote such stock, to any person who has the sole power to sell such stock, and, in the case of stock held in trust, to any person who has the right to revoke the trust at will or to replace the trustee at will. If the trustee has a familial, personal or extra-trust business relationship to the grantor or the beneficiary, the grantor or beneficiary, as appropriate, will be attributed with the stock interests held in trust.

(iv) Non-voting stock shall be attributed as an interest in the issuing entity if in excess of the amounts set forth above.

(v) Debt and instruments such as warrants, convertible debentures, options or other interests (except non-voting stock) with rights of conversion to voting interests shall not be attributed unless and until conversion is effected, except that this provision does not apply in determining whether an entity is a small business, a rural telephone company, or a business owned by minorities and/or women, as these terms are defined in § 1.2110 of this chapter or other provisions of the Commission's Rules.

(vi) Limited partnership interests shall be attributed to limited partners and shall be calculated according to both the percentage of equity paid in and the percentage of distribution of profits and losses.

(vii) Officers and directors of a broadband PCS licensee or applicant or a cellular licensee shall be considered to have an attributable interest in the entity with which they are so



associated. The officers and directors of an entity that controls a PCS licensee or applicant or a cellular licensee shall be considered to have an attributable interest in the broadband PCS licensee or applicant or a cellular licensee.

(viii) (A) Ownership interests in a cellular licensee or a broadband PCS applicant or licensee 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 if the ownership percentage for an interest in any link in the chain exceeds 50 percent or represents actual control, it shall be treated as if it were a 100 percent interest. [For example, if A owns 10 percent of Company X, which owns 35 percent of, and controls, Company Y, which owns 25 percent of Licensee, then Company X's attributable interest in Licensee would be 25 percent, and A's attributable interest in Licensee would be 2.5 percent ( $0.1 \times 0.25$ ).

(B) Notwithstanding paragraph (d)(2)(viii)(A) of this section, the following interests shall not constitute attributable ownership interests for purposes of § 24.229(c):

(1) A limited partnership interest held by an institutional investor (as defined Section 24.720(h)) where the limited partner is not materially involved, directly or indirectly, in the management or operation of the PCS holdings of the partnership, and the licensee so certifies. The criteria which would assure adequate insulation for the purposes of this certification require:

- (i) Prohibiting limited partners from acting as employees of the limited partnership if responsibilities relate to the carrier activities of the licensee;
- (ii) Barring the limited partners from serving as independent contractors;
- (iii) Restricting communication among limited partners and the general partner regarding day-to-day activities of the licensee;
- (iv) Empowering the general partner to veto admissions of new general partners;
- (v) Restricting the circumstances in which the limited partners can remove the general partner;
- (vi) Prohibiting the limited partners from providing services to the partnership relating to the PCS holdings of the licensee; and

(vii) Stating that the limited partners may not become involved in the management or operation of the licensee. See 47 CFR 73.3555 Note 2(g)(2); Memorandum of Opinion and Order in MM Docket 83-46, FCC 85-252 (released June 24, 1985), as modified on reconsideration in the Memorandum of Opinion and Order in MM Docket No. 83-46, FCC 86-410 (released November 28, 1986).

(2) Institutional investors who held limited partnership interests prior to March 2, 1995 shall be granted one year from that date to amend their limited partnership agreements to comply with the insulation rules and so certify to the Commission. During this transition period, the licensee in which an institutional investor holds an interest shall also certify to the Commission that the institutional investor limited partner(s) are not materially involved, directly or indirectly, in the management or operation of the licensee.

- (ix) Any person who manages the operations of a broadband PCS or cellular license

pursuant to a management agreement shall be considered to have an attributable interest in such licensee, if such person, or its affiliate has authority to make decisions or otherwise engage in practices or activities that determine, or significantly influence, (1) the nature of types of services offered by such licensee; (2) the terms upon which such services are offered; or (3) the prices charged for such services.

(x) Any licensee who enters into a joint marketing arrangement with a broadband PCS or cellular licensee, or its affiliate, shall be considered to have an attributable interest, if such licensee has authority to make decisions or otherwise engage in practices or activities that determine, or significantly influence, (1) the nature of types of services offered by such licensee; (2) the terms upon which such services are offered; or (3) the prices charged for such services.

(e) [Reserved]

(f) *Cellular Divestiture*. Parties holding controlling or attributable ownership interests in cellular licensees may be a party to a broadband PCS application (*i.e.*, have a controlling or attributable interest in a broadband PCS applicant), and such PCS applicant will be eligible for more than one 10 MHz broadband PCS license and/or 30 MHz broadband PCS license(s) pursuant to the divestiture procedures set forth in paragraphs (f)(1) through (3) of this section; Provided, however, that these divestiture procedures shall be available only to: (i) parties with controlling or attributable ownership interests in cellular licenses where the CGSA(s) covers 20 percent or less of the PCS service area population; and (ii) parties with attributable interests solely due to management agreements or joint marketing agreements; and (iii) parties with non-controlling attributable interests in cellular licenses, regardless of the degree to which the CGSA(s) covers the PCS service area population. For purposes of this paragraph, a "non-controlling attributable interest" is one in which the holder has less than a fifty (50) percent voting interest and there is an unaffiliated single holder of fifty (50) percent or greater voting interest.

(1) The broadband PCS applicant shall certify on its short-form auction application, filed in accordance with Section 24.705, that it and all parties to the application will come into compliance with the limitations on common ownership of cellular and broadband PCS interests set forth in this section.

(2) If such an applicant is a successful bidder, it must submit with its long-form application (*see* § 24.707) a signed statement describing its efforts to date and future plans to come into compliance with the limitations on common ownership of cellular and broadband PCS interests set forth in this section.

(3) If such an applicant is otherwise qualified, its application will be granted subject to a condition that the licensee shall come into compliance with the limitations on common ownership of cellular and broadband PCS interests set forth in this section within ninety (90) days of final grant.

(i) Parties holding controlling interests in cellular licensees that conflict with the attribution threshold or service overlap limitations set forth above will be considered to have come into compliance if they have submitted to the Commission an application for assignment of license or transfer of control of the cellular licensee (*see* § 22.39 of this chapter) by which, if

granted, such parties no longer would have an attributable interest in the cellular license. If no such assignment or transfer application is tendered to the Commission within ninety (90) days of final grant, the Commission may consider the short-form certification and the long-form divestiture statement to be material, bad faith misrepresentations and will invoke the condition on the PCS license, cancelling it automatically, retain all monies paid to the Commission, and, based on the facts presented, take any other action it may deem appropriate. Divestiture may be to an interim trustee if a buyer has not been secured in the required time frame, as long as the applicant has no interest in or control of the trustee, and the trustee may dispose of the license as it sees fit.

(ii) Where parties to broadband PCS applications hold less-than-controlling (but still attributable) interests in cellular licensee(s), they shall submit, within ninety days of final grant, a certification that the applicant and all parties to the application have come into compliance with the limitations on common ownership of cellular and broadband PCS interests set forth in this section. The trustee must divest the property within six months from grant of license.

**Note 1:** For purposes of the cellular ownership attribution limit, all ownership interests in cellular operations that serve 10 or more percent of the population of the PCS service area should be included in determining the extent of a PCS applicant's cellular ownership.

**Note 2:** When a party owns an attributable interest in more than one cellular system that overlaps a PCS service area, the total population in the overlap area will apply on a cumulative basis.

*Example 1:* Company A holds a 15 percent non-controlling ownership interest in Cellular Licensee X and a 15 percent non-controlling ownership interest in Cellular Licensee Y. Cellular Licensee X covers 30 percent of the population of the PCS service area and Cellular Licensee Y covers 10 percent of the population of the PCS service area. A broadband PCS applicant in which Company A holds an attributable ownership interest will be eligible for a broadband PCS license or licenses for more than 10 MHz because Company A does not hold attributable ownership interests in cellular operations which together include ten or more percent of the population of the PCS service area.

*Example 2:* (1) Cellular Company A owns a 45 percent non-controlling interest in cellular license 1, and a 22 percent non-controlling interest in both cellular licenses 2 and 3. Cellular license 1 includes 15 percent of the pops in BTA 1. Cellular license 2 covers 7 percent of the pops in BTA 2 and 5 percent of the pops in BTA 3. Cellular license 3 covers 7 percent of the pops in BTA 3. Together Cellular licenses 1, 2 and 3 cover 9 percent of the pops in MTA 1.

(2) If Cellular Company A is not a designated entity, it can purchase 40 MHz of spectrum in BTA 2 or in MTA 1. It can acquire only 10 MHz in BTA 1 or BTA 3 because it is considered to have ownership interests in 15 percent of the pops in BTA 1 and 12 percent of the pops in BTA 3.

(3) If Cellular Company A wants to acquire 40 MHz of spectrum in BTA 3 it can either

agree to divest either cellular license 2 or 3, or it can invest as a non-controlling investor in a PCS license that is held and controlled by a business owned by minorities and/or women.

(4) If Cellular Company A wants to acquire 40 MHz of spectrum in BTA 1 it can agree to divest its interests in cellular license 1. It cannot invest as a non-controlling investor in a business owned by minorities and/or women because its 45 percent ownership of license 1 will be attributed, since it is greater than the 40 percent threshold.

(5) If Cellular Company A is a designated entity, it can acquire 40 MHz of PCS spectrum in every area except BTA 1, where it is considered to have an ownership interest in 25 MHz of spectrum already because it is over the 40 percent threshold.

*Example 3:* (1) Cellular Company A owns a 45 percent non-controlling interest in cellular license 1 that covers 5 percent of the pops in BTA 1. Cellular Company A also owns a 21 percent non-controlling interest in cellular license 2 that covers 9 percent of the pops in BTA 1. If Cellular Company A is not a designated entity, then it can buy only 10 MHz of spectrum, because it is considered to have an ownership interest of 14 percent of the pops in BTA 1. If it wants to buy 30 MHz it would have to certify before the auction that it will divest either cellular license 1 or 2.

(2) If Cellular Company A is a designated entity, then it would be considered to have an ownership interest in only 5 percent of the pops in BTA 1 and would thus be eligible to buy up to 40 MHz in BTA 1.

*Example 4:* Company A holds a 10 percent interest in Cellular Licensee 1. Company B holds a 10 percent interest in Cellular Licensee 1. Cellular Licensee 1 covers more than 10 percent of the population of the PCS service area. Neither Company A nor Company B is a designated entity. A PCS entity with interests held by Company A and Company B is ineligible for a 30 MHz PCS license because the attributable ownership in cellular license 1 is 20 percent.

*Example 5:* Same as Example 4 except that Company A and Company B are designated entities. The PCS entity is eligible for a 30 MHz PCS license because the attributable cellular ownership is less than 40 percent.

## **§ 24.229 Frequencies.**

The frequencies available in the Broadband PCS service are listed in this section in accordance with the frequency allocations table of Section 2.106 of this chapter.

(a) The following frequency blocks are available for assignment on an MTA basis:

Block A: 1850-1865 MHz paired with 1930-1945 MHz; and  
Block B: 1870-1885 MHz paired with 1950-1965 MHz.

(b) The following frequency blocks are available for assignment on a BTA basis:

Block C: 1895-1910 MHz paired with 1975-1990 MHz;  
Block D: 1865-1870 MHz paired with 1945-1950 MHz;

Block E: 1885-1890 MHz paired with 1965-1970 MHz; and  
 Block F: 1890-1895 MHz paired with 1970-1975 MHz.

(c) PCS licenses shall not have an ownership interest in frequency blocks that total more than 40 MHz and serve the same geographic area. For purposes of this section, PCS licensees are:

(1) Any institutional investor, as defined in Section 24.720(h), with an ownership interest of 10 or more percent in a broadband PCS license; and

(2) Any other entities having an ownership interest of 5 or more percent or other attributable ownership interest, as defined in Section 24.204(d), in a PCS license.

*Example 1:* Company A, which is a rural telephone company with no cellular interests, buys a 7 percent stake in a 30 MHz BTA that constitutes 8 percent of the population in MTA 1, which encompasses BTA 1. It is then offered an opportunity to buy 8 percent of the equity in a 30 MHz license in MTA 1. It cannot accept this offer because it would be over the 5 percent threshold on two overlapping PCS licenses. Its status as a rural telephone company has no impact on the 5 percent threshold for PCS licensees.

*Example 2:* (1) Company A has two investors, Company B and Company C. Company B owns 15 percent of Company A. Company C, a rural telephone company, owns 25 percent of Company A. Company B and Company C do not have any interests in each other.

(2) Company B has 100 percent ownership of cellular license 1 that covers 20 percent of the pops in BTA 1 and 6 percent of the pops in MTA 1. Company C owns 25 percent of cellular license 2 that covers 20 percent of the pops in BTA 2 and 6 percent of the pops in MTA 1. Company A has no separate cellular interests. MTA 1 encompasses both BTA 1 and BTA 2.

(3) Company A cannot purchase 30 MHz of spectrum in BTA 1. Such a purchase would put Company B over the aggregation limit of 40 MHz in BTA 1 because it would have over 5 percent ownership of the PCS license in addition to its cellular license.

(4) Company A can, however, purchase 30 MHz in BTA 2 or MTA 1 because Company C is a rural telephone company, and thus Company C's interest in cellular license 2 falls below the 40 percent threshold and is not counted against the spectrum cap. If Company C were not a rural telephone company, then Company A could not acquire 30 MHz in BTA 2 or MTA 1 because its partners in those licenses would be over the spectrum cap.

(5) Company B can also buy 30 MHz in BTA 2 or MTA 1 as long as Company A does not also buy 30 MHz in BTA 2 or MTA 1 because Company B and Company C have no joint ownership.

(6) Company C can also buy 30 MHz in BTA 1 or 2 or MTA 1 as long as Company A does not also buy in the region where Company C buys. If Company A were to buy a 30 MHz MTA 1 license, then Company B and C would be prohibited from acquiring either of the BTAs because they would be over the 5 percent threshold for PCS spectrum in the same region.

(d) After January 1, 2000, licensees that have met the 5-year construction requirement may assign portions of licensed PCS spectrum. In no case may an assignee aggregate more than

40 MHz of PCS/cellular spectrum.

#### **§ 24.232 Power and antenna height limits.**

(a) Base stations are limited to 1640 watts peak equivalent isotropically radiated power (e.i.r.p.) with an antenna height up to 300 meters HAAT. See § 24.53 for HAAT calculation method. Base station antenna heights may exceed 300 meters with a corresponding reduction in power; see Table 1 of this section. In no case may the peak output power of a base station transmitter exceed 100 watts. The service area boundary limit and microwave protection criteria specified in Section 24.236 and Section 24.237 apply.

Table 1. Reduced Power for Base Station Antenna Heights Over 300 Meters

HAAT in meters	Maximum e.i.r.p. (watts)
≤ 300	1,640
≤ 500	1,070
≤1,000	490
≤1,500	270
≤2,000	160

(b) Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

(c) Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, *etc.*, so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

#### **§ 24.235 Frequency stability.**

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

#### **§ 24.236 Field strength limits.**

The predicted or measured median field strength at any location on the border of the PCS service area shall not exceed 47 dBuV/m unless the parties agree to a higher field strength.

#### **§ 24.237 Interference protection.**

(a) All licensees are required to coordinate their frequency usage with co-channel or

adjacent channel incumbent fixed microwave licensees in the 1850-1990 MHz band. Coordination must occur before initiating operations from any base station. Problems that arise during the coordination process are to be resolved by the parties to the coordination. Licensees are required to coordinate with all users possibly affected, as determined by Appendix E of the Memorandum Opinion and Order, GEN Docket No. 90-314, FCC 94-144; TIA Telecommunications Systems Bulletin 10-F, "Interference Criteria for Microwave Systems," May 1994, (TSB10-F); or an alternative method agreed to by the parties.

(b) The results of the coordination process need be reported to the Commission only if the parties fail to agree. Because broadband PCS licensees are required to protect fixed microwave licensees in the 1850-1990 MHz band, the Commission will be involved in the coordination process only upon complaint of interference from a fixed microwave licensee. In such a case, the Commission will resolve the issues.

(c) In all other respects, coordination procedures are to follow the requirements of § 21.100(d) of this chapter to the extent that these requirements are not inconsistent with those specified in this part.

(d) The licensee must perform an engineering analysis to assure that the proposed facilities will not cause interference to existing OFS stations within the coordination distance specified in Table 2 of a magnitude greater than that specified in the criteria set forth in paragraphs (e) and (f) of this section, unless there is prior agreement with the affected OFS licensee. Interference calculations shall be based on the sum of the power received at the terminals of each microwave receiver from all of the applicant's current and proposed PCS operations.

Table 2: Coordination Distances In Kilometers

PCS Base Station Antenna HAAT in Meters

e.i.r.p.

(W)	5	10	20	50	100	150	200	250	300	500	1000	1500	2000
0.1	90	93	99	110	122	131	139	146	152	173	210	239	263
0.5	96	100	105	116	128	137	145	152	158	179	216	245	269
1	99	103	108	119	131	140	148	155	161	182	219	248	272
2	120	122	126	133	142	148	154	159	164	184	222	250	274
5	154	157	161	168	177	183	189	194	198	213	241	263	282
10	180	183	187	194	203	210	215	220	225	240	268	291	310
20	206	209	213	221	229	236	242	247	251	267	296	318	337
50	241	244	248	255	264	271	277	282	287	302	331	354	374
100	267	270	274	282	291	297	303	308	313	329	358	382	401

200	293	296	300	308	317	324	330	335	340	356	386	409
500	328	331	335	343	352	359	365	370	375	391	421	
1000	354	357	361	369	378	385	391	397	402	418		
1200	361	364	368	376	385	392	398	404	409			
1640	372	375	379	388	397	404	410	416	421			

NOTE: If actual value does not match table values, round to the closest higher value on this table. See Section 24.53 for HAAT calculation method.

(e) For microwave paths of 25 kilometers or less, interference determinations shall be based on the C/I criteria set forth in TIA Telecommunications Systems Bulletin 10-F, "Interference Criteria for Microwave Systems," May 1994, (TSB10-F).

(f) For microwave paths longer than 25 kilometers, the interference protection criterion shall be such that the interfering signal will not produce more than 1.0 dB degradation of the practical threshold of the microwave receiver for analog systems, or such that the interfering signal will not cause an increase in the bit error rate (BER) from 10E-6 to 10E-5 for digital systems.

(g) The development of the C/I ratios and interference criteria specified in paragraphs (e) and (f) of the section and the methods employed to compute the interfering power at the microwave receivers shall follow generally acceptable good engineering practices. The procedures described for computing interfering signal levels in Appendix E of the Memorandum Opinion and Order, GEN Docket No. 90-314, FCC 94-144 shall be applied. Alternatively, procedures for determining interfering signal levels and other criteria as may be developed by the Electronics Industries Association (EIA), the Institute of Electrical and Electronics Engineers, Inc. (IEEE), the American National Standards Institute (ANSI) or any other recognized authority will be acceptable to the Commission.

#### **§ 24.238 Emission limits.**

(a) On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log (P)$  dB.

(b) Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

(c) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close the license's frequency block edges, both upper and lower, as the design permits.

(d) The measurements of emission power can be expressed in peak or average values,



provided that they are expressed in the same parameters as the transmission power.

(e) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

## **Subpart F - Competitive Bidding Procedures for Narrowband PCS**

### **§ 24.301 Narrowband PCS subject to competitive bidding.**

Mutually exclusive initial applications to provide narrowband PCS service are subject to competitive bidding procedures. The general competitive bidding procedures found in 47 CFR Part 1, Subpart Q, will apply unless otherwise provided in this part.

### **§ 24.302 Competitive bidding design for narrowband PCS licensing.**

(a) The Commission will employ the following competitive bidding designs when choosing from among mutually exclusive initial applications to provide narrowband PCS service:

- (1) Single round sealed bid auctions (either sequential or simultaneous)
- (2) Sequential oral auctions
- (3) Simultaneous multiple round auctions

(b) The Commission may design and test alternative procedures. The Commission will announce by Public Notice before each auction the competitive bidding design to be employed in a particular auction.

(c) The Commission may use combinatorial bidding, which would allow bidders to submit all or nothing bids on combinations of licenses, in addition to bids on individual licenses. The Commission may require that to be declared the high bid, a combinatorial bid must exceed the sum of the individual bids by a specified amount. Combinatorial bidding may be used with any type of auction design.

(d) The Commission may use single combined auctions, which combine bidding for two or more substitutable licenses and award licenses to the highest bidders until the available licenses are exhausted. This technique may be used in conjunction with any type of auction.

### **§ 24.303 Competitive bidding mechanisms.**

(a) *Sequencing.* The Commission will establish and may vary the sequence in which narrowband PCS licenses will be auctioned.

(b) *Grouping.* In the event the Commission uses either a simultaneous multiple round competitive bidding design or combinatorial bidding, the Commission will determine which licenses will be auctioned simultaneously or in combination.

(c) *Reservation Price.* The Commission may establish a reservation price, either disclosed or undisclosed, below which a license subject to auction will not be awarded.

(d) *Minimum Bid Increments.* The Commission may, by announcement before or during an auction, require minimum bid increments in dollar or percentage terms. The Commission

may also establish by Public Notice a suggested opening bid or a minimum opening bid on each license.

(e) *Stopping Rules.* The Commission may establish stopping rules before or during multiple round auctions in order to terminate an auction within a reasonable time.

(f) *Activity Rules.* The Commission may establish activity rules which require a minimum amount of bidding activity. In the event that the Commission establishes an activity rule in connection with a simultaneous multiple round auction, each bidder will be entitled to request and will be automatically granted one activity rule waiver during each stage of an auction, or one automatic waiver during a specified number of bidding rounds. The Commission may change by Public Notice the number and frequency of such automatic activity rule waivers for a specific auction.

(g) *Bidder Identification During Auctions.* The Commission may choose, on an auction-by-auction basis, to release the identity of the bidders associated with bidder identification numbers. The Commission will announce by Public Notice before each auction whether bidder identities will be revealed.

#### **§ 24.304 Withdrawal, default and disqualification penalties.**

(a) When the Commission conducts a simultaneous multiple round auction pursuant to § 24.302 (a)(3), the Commission will impose penalties on bidders who withdraw high bids during the course of an auction, or who default on payments due after an auction closes or who are disqualified.

(1) *Bid withdrawal prior to close of auction.* A bidder who withdraws a high bid during the course of an auction will be subject to a penalty equal to the difference between the amount bid and the amount of the winning bid the next time the license is offered by the Commission. No withdrawal penalty would be assessed if the subsequent winning bid exceeds the withdrawn bid. This penalty amount will be deducted from any upfront payments or down payments that the withdrawing bidder has deposited with the Commission.

(2) *Default or disqualification after close of auction.* If a high bidder defaults or is disqualified after the close of such an auction, the defaulting bidder will be subject to the penalty in paragraph (1) of this section plus an additional penalty equal to three (3) percent of the subsequent winning bid. If the subsequent winning bid exceeds the defaulting bidder's bid amount, the 3 percent penalty will be calculated based on the defaulting bidder's bid amount. These amounts will be deducted from any upfront payments or down payments that the defaulting or disqualified bidder has deposited with the Commission.

(b) When the Commission conducts single round sealed bid auctions or sequential oral auctions, the Commission may modify the penalties to be paid in the event of bid withdrawal, default or disqualification; provided, however, that such penalties shall not exceed the penalties specified above.

(c) In the case of single round bidding for narrowband PCS licenses:

(1) If a bid is withdrawn before the Commission releases the initial Public Notice announcing the winning bidder(s), no bid withdrawal penalty will be assessed.

(2) If a bid is withdrawn after the Commission releases the initial Public Notice announcing the winning bidder(s), the bid withdrawal penalty will be equal to the difference between the high bid amount and the amount of the next highest valid bid. A bid will be considered valid for this purpose if the bidder has not already been designated the winning bidder on more licenses than it is permitted to be awarded. Losing bidders will only be subject to this bid withdrawal penalty for a period of 30 days after the Commission releases the initial Public Notice announcing the winning bidders.

(d) In the case of oral sequential bidding for narrowband PCS licenses:

(1) If a bid is withdrawn before the Commission has declared the bidding to be closed for the license bid on, no bid withdrawal penalty will be assessed.

(2) If a bid is withdrawn after the Commission has declared the bidding to be closed for the license bid on, the bid withdrawal penalty of § 1.2104(g) and subsections (a)(1) and (2) of this section will apply.

#### **§ 24.305 Bidding application (FCC Form 175 and 175-S Short-Form).**

All applicants for initial provision of narrowband PCS service must submit applications on FCC Forms 175 and 175-S pursuant to the procedures set forth in § 1.2105 of part 1 of this chapter. The Commission will issue a Public Notice announcing the date of a narrowband PCS auction, the licenses which are to be auctioned, and the date on or before which applicants intending to participate in an upcoming narrowband PCS auction must file their applications in order to be eligible for that auction. The Public Notice will also contain information necessary for completion of the application as well as other important information such as the materials which must accompany the Forms, any filing fee that must accompany the application or any upfront payment that will need to be submitted, and the location where the application must be filed.

#### **§ 24.306 Submission of upfront payments and down payments.**

(a) Where the Commission uses simultaneous multiple round auctions or oral sequential auctions bidders will be required to submit an upfront payment pursuant to the procedures set forth in § 1.2106 of this chapter.

(b) Winning bidders in an auction must submit a down payment to the Commission in accordance with the procedures set forth in § 1.2107 (a) and (b) of this chapter.

#### **§ 24.307 Long form applications.**

Winning bidders will be required to submit long form applications on FCC form 401, as modified, within ten (10) business days after being notified that they are the winning bidder. Applications on FCC Form 401 shall be submitted pursuant to the procedures set forth in subpart G of this part and § 1.2107 (c) and (d) of this chapter and any associated Public Notices. Only auction winners will be eligible to file applications on FCC Form 401 for

initial narrowband PCS licenses in the event of mutual exclusivity between applicants filing Form 175. Winning bidders need not complete Schedule B to Form 401.

#### **§ 24.308 License grant, denial, default, and disqualification.**

(a) Unless eligible for installment payments and/or a bidding credit, each winning bidder is required to pay the balance of its winning bid in a lump sum payment within five (5) business days following the award of the license. Grant of the license will be conditioned upon full and timely payment of the winning bid amount.

(b) A bidder who withdraws its bid, defaults on a payment or is disqualified will be subject to the penalties specified in § 1.2109 of this Chapter.

#### **§ 24.309 Designated entities**

(a) Designated entities entitled to preferences in the narrowband PCS service are small businesses and businesses owned by members of minority groups and/or women as defined in §§ 24.320(b) and 24.320(c).

(b) Designated entities will be eligible for certain special narrowband PCS provisions as follows:

(1) Installment payments.

(i) Small businesses, including small businesses owned by members of minority groups and women, will be eligible to pay the full amount of their winning bids on any regional, MTA or BTA license in installments over the term of the license pursuant to the terms set forth in § 1.2110(e) of this chapter.

(ii) Businesses owned by members of minority groups and women that are winning bidders for the regional licenses indicated by an (\*\*) in § 24.129 may pay the full amount of their winning bids (less the applicable bidding credit and down payment) in installments with

(A) Interest imposed based on the rate for ten-year U.S. Treasury obligations applicable on the date the license is granted, plus 2.5 percent;

(B) Interest-only payments for the first two years; and

(C) Principal and interest payments amortized over the remaining eight years of the license.

(2) Bidding Credits. Businesses owned by member of minority groups and women, including small businesses owned by members of minority groups and women, will be eligible for a twenty-five (25) percent bidding credit when bidding on the following licenses:

(i) The nationwide licenses on Channel 5, Channel 8 and Channel 11; (ii) All MTA licenses on Channel 19, Channel 22, Channel 24; and (iii) All BTA licenses on Channel 26. This bidding credit will reduce by 25 percent the bid price that businesses owned by members of minority groups and women will be required to pay to obtain a license. Businesses owned by women and/or minorities, including small businesses owned by women and/or minorities will be eligible for a forty (40) percent bidding credit when bidding on all regional licenses on Channel 13 and Channel 17. In § 24.129, the licenses that will be eligible for 25 percent bidding credits are indicated by an (\*); the licenses that will be eligible for 40 percent bidding

credits are indicated by an (\*\*).

(3) **Tax Certificates.** Any non-controlling initial investor in a business owned by members of minority groups and/or women and who provides "start-up" financing, which allows such business to acquire a narrowband PCS license(s), and any non-controlling investor who purchases an interest in a narrowband PCS license held by a business owned by members of minority groups and/or women with the first year after license issuance, may, upon the sale of such investment or interest, request from the Commission a tax certificate. Any narrowband PCS licensee who assigns or transfers control of its license to a business owned by members of minority groups and/or women may request that the Commission issue the licensee a tax certificate.

(c) *Short-Form Application Certification; Long-Form Application Disclosure.* (1) All applicants for licenses under the designated entity provisions set forth in this section shall certify on their short-form applications (Form 175) that they are eligible for those preferences pursuant to this section.

(2) In addition to the requirements in subpart I, all designated entity applicants that are winning bidders shall, in an exhibit to their long-form applications--

(i) Identify each member of the applicant's control group, regardless of the size of the member's total interest in the applicant, and each member's minority group or gender classification, if applicable;

(ii) Disclose the gross revenues of the applicant and its affiliates, and other persons that hold interests in the applicant and their affiliates (including all members of the applicant's control group); and

(iii) Certify that the personal net worth of the applicant (if an individual), each affiliate and each person that hold an interest in the applicant is less than \$40 million.

(d) *Audits.* Applicants and licensees claiming eligibility under this section shall be subject to random audits by the Commission.

(e) *Definitions.* The terms affiliate, business owned by members of minority groups and women, consortium of small businesses, control group, gross revenues, members of minority groups, passive equity, personal net worth, and small business used in this section are defined in § 24.320.

(f) *Unjust Enrichment.* Designated entities using installment payments, bidding credits or tax certificates to obtain a narrowband PCS license will be subject to the following unjust enrichment provisions:

(1) If a small business paying for a narrowband PCS license in installment payments seeks to transfer a license to a non-small business entity during the term of the license, the remaining principal balance must be repaid as a condition of the license transfer.

(2) If a licensee that utilizes installment financing under this section seeks to make any change in ownership structure that would result in the licensee losing eligibility for installment payments, the licensee shall first seek Commission approval and must make full payment of the remaining unpaid principal and any unpaid interest accrued through the date of the change as a condition of approval. Increases in gross revenues that result from equity investments that are not attributable to the licensee under § 24.320(b)(2)(iv), revenues from

operations, business development or expanded service shall not be considered changes in ownership structure under this paragraph.

(3) Female and minority owned businesses seeking to transfer a license to an entity that is not owned by women or minorities will be required to reimburse the government for the amount of the bidding credit, plus interest at the rate imposed for installment financing at the time the license was awarded, before the transfer will be permitted. The amount of this penalty will be reduced over time as follows: a transfer in the first two years of the license term will result in a forfeiture of 100 percent of the value of the bidding credit; in year three of the license term the penalty will be 75 percent; in year four the penalty will be 50 percent and in year five the penalty will be 25 percent, after which there will be no penalty.

(4) Any business owned by minorities and/or women that obtains a narrowband PCS license through the benefit of tax certificates shall not assign or transfer control of its license within one year of its license grant date. If the assignee of transferee is a business owned by minorities or women, this paragraph shall not apply; Provided, however, that the assignee or transferee shall not assign or transfer control of the license within on year of the grant date of the assignment or transfer.

#### **§ 24.320 Definitions.**

(a) *Scope.* The definitions in this section apply to §§ 24.309-24.315 of this subpart, unless otherwise specified in those sections.

(b) *Small Business; Consortium of Small Businesses.*

(1) A *small business* is an entity that:

(i) Together with its affiliates has average annual gross revenues that are not more than \$40 million for the preceding three calendar years;

(ii) Has no attributable investor or affiliate that has a personal net worth of \$40 million or more;

(iii) Has a control group all of whose members and affiliates are considered in determining whether the entity meets the \$40 million annual gross revenues and personal net worth standards; and

(iv) Such control group holds 50.1 percent of the entity's voting interest, if a corporation, and at least 25 percent of the entity's equity on a fully diluted basis, except that a business owned by members of minority groups and/or women (as defined in paragraph (c) of this section) may also qualify as a small business if a control group that is 100 percent composed of members of minority groups and/or women holds 50.1 percent of the entity's voting interests, if a corporation, and 50.1 percent of the entity's total equity on a fully diluted basis and no single other investor holds more than 49.9 percent of passive equity in the entity.

(2) *Attribution and Aggregation of Gross Revenues and Personal Net Worth.*

(i) Except as specified in paragraphs (b)(1) (iii) and (iv), the gross revenues of the applicant (or licensee) and its affiliates, and other persons that hold interests in the applicant (or licensee) and their affiliates shall be considered on a cumulative basis and aggregated for purposes of determining whether the applicant (or licensee) is a small business.

(ii) The personal net worth of individual applicants (or licensees) and other persons that hold interests in the applicant (or licensee), and their affiliates, if less than \$40 million, shall not be considered for purposes of determining whether the applicant (or licensee) is eligible to bid as a small business.

(iii) Where an applicant (or licensee) is a consortium of small businesses, the gross revenues of each small business shall not be aggregated.

(iv) The gross revenues and personal net worth of a person that holds an interest in the applicant (or licensee) shall not be considered so long as:

(A) Such person holds no more than 25 percent of the applicant's (or licensee's) passive equity and is not a member of the applicant's or control group; and

(B) The applicant has a control group that owns at least 25 percent of the applicant's total equity and, if a corporation, holds at least 50.1 percent of the applicant's voting interests.

(v) The gross revenues, total assets and personal net worth of a person that holds an interest in the applicant shall not be considered so long as:

(A) Such person holds no more than 49.9 percent of the applicant's (or licensee's) passive equity and is not a member of the applicant's control group; and

(B) The applicant has a control group that consists entirely of members of minority groups and/or women and that owns at least 50.1 percent of the applicant's total equity and, if a corporation, at least 50.1 percent of the applicant's voting interests.

(3) A *small business consortium* is a conglomerate organization formed as a joint venture between mutually-independent business firms, each of which individually satisfies the definition of a small business.

**Note to paragraph (b):** Ownership interests shall be calculated on a fully diluted basis; all agreements such as warrants, stock options and convertible debentures will generally be treated as if the rights thereunder already have been fully exercised, except that such agreements may not be used to appear to terminate or divest ownership interests before they actually do so.

(c) *Business Owned by Members of Minority Groups and/or Women.* A business owned by members of minority groups and/or women is an entity:

(1) That has a control group composed 100 percent of members of minority groups and/or women who are United States Citizens, and

(2) Such control group owns and holds 50.1 percent of the voting interests, if a corporation, and

(i) Owns and holds 50.1 percent of the total equity in the entity, provided that all other investors hold passive interests; or

(ii) Holds 25 percent of the total equity in the entity, provided that no single other investor holds more than 25 percent passive equity interests in the entity. In a partnership, all general partners must be members of minority groups and/or women. Ownership interests shall be calculated on a fully diluted basis; all agreements such as warrants, stock options and convertible debentures will generally be treated as if the rights thereunder already have been

fully exercised, except that such agreements may not be used to appear to terminate or divest ownership interests before they actually do so.

(d) *Gross Revenues*. *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 quarterly financial statements for the relevant period.

(e) *Personal Net Worth*. *Personal net worth* shall mean the market value of all assets (real and personal, tangible and intangible) owned by an individual, less all liabilities (including personal guarantees) owed by the individual in his individual capacity or as a joint obligor.

(f) *Members of Minority Groups*. *Members of minority groups* includes individuals of African American, Hispanic-surnamed, American Eskimo, Aleut, American Indian and Asian American extraction.

(g) *Passive Equity*. *Passive equity* shall mean:

(1) For corporations, non-voting stock or stock that includes no more than fifteen percent of the voting equity;

(2) For partnerships, joint ventures and other non-corporate entities, limited partnership interests and similar interests that do not afford the power to exercise control of the entity.

(h) *Control Group*. A *control group* is an entity, or a group of individuals or entities, that possess de jure control and de facto control of an applicant or licensee, and as to which the applicant's or licensee's charters, articles of incorporation, bylaws, agreements and any other relevant documents (and amendments thereto) provide:

(1) That the entity and/or its members own unconditionally at least 50.1 percent of the total voting interests of a corporation;

(2) That the entity and/or its members receive at least 50.1 percent of the annual distribution of any dividends paid on the voting stock of a corporation;

(3) That, in the event of dissolution or liquidation of a corporation, the entity and/or its members are entitled to receive 100 percent of the value of each share of stock in its possession and a percentage of the retained earnings of the concern that is equivalent to the amount of equity held in the corporation; and

(4) That the entity and/or its members have the right to receive dividends, profits and regular and liquidating distributions from the business in proportion to its interest in the total equity of the applicant or licensee.

**Note to paragraph (h):** Voting control does not always assure de facto control, such as, for example, when the voting stock of the control group is widely dispersed (see, e.g., § 24.720(e)(2)(iii)).

(i) *Affiliate*. Determinations regarding whether an individual or entity will be considered an *affiliate* of:

(1) An applicant or

(2) A person holding an attributable interest in an applicant under paragraph (b)(2) will be made pursuant to the general affiliation rules set forth in § 24.710(1).



## **Subpart G – Interim Application, Licensing, and Processing Rules for Narrowband PCS**

### **§ 24.403 Authorization required.**

No person shall use or operate any device for the transmission of energy or communications by radio in the services authorized by this part except as provided in this part.

### **§ 24.404 Eligibility.**

- (a) *General.* Authorizations will be granted upon proper application if:
    - (1) The applicant is qualified under the applicable laws and the regulations, policies and decisions issued under those laws, including § 24.101 and 24.12;
    - (2) There are frequencies available to provide satisfactory service; and
    - (3) The public interest, convenience or necessity would be served by a grant.
  - (b) Alien ownership. A narrowband PCS authorization to provide Commercial Mobile Radio Service may not be granted to or held by:
    - (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 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 Commission finds that the public interest will be served by the refusal or revocation of such license.
- A Narrowband PCS authorization to provide Private Mobile Radio Service may not be granted to or held by a foreign government or a representative thereof.

### **§ 24.405 Formal and informal applications.**

- (a) Except for an authorization under any of the conditions stated in section 308(a) of the Communications Act of 1934 (47 U.S.C. 308(a)), the Commission may grant only upon written application received by it, the following authorization: station licenses; modifications of licenses; renewals of licenses; transfers and assignments of station licenses, or any right thereunder.
- (b) Except as may be otherwise permitted by this part, a separate written application shall be filed for each instrument of authorization requested. Applications may be:
  - (1) "Formal applications" where the Commission has prescribed in this Part a standard form;

or

(2) "Informal applications" (normally in letter form) where the Commission has not prescribed a standard form.

(c) An informal application will be accepted for filing only if:

- (1) A standard form is not prescribed or clearly applicable to the authorization requested;
- (2) It is a document submitted, in duplicate, with a caption which indicates clearly the nature of the request, radio service involved, location of the station, and the application file number (if known); and
- (3) It contains all the technical details and informational showings required by the rules and states clearly and completely the facts involved and authorization desired.

#### **§ 24.406 Filing of Narrowband PCS applications, fees, and numbers of copies.**

(a) As prescribed by §§ 24.305, 24.307, and § 24.409, standard formal application forms applicable to the narrowband PCS may be obtained from either:

- (1) Federal Communications Commission, Washington, DC 20554; or
- (2) By calling the Commission's Forms Distribution Center, (202) 418-3676.

(b) Applications for the initial provision of narrowband PCS service must be filed on FCC Form 175 in accordance with the rules in § 24.305 and Part 1, Subpart Q of this chapter. In the event of mutual exclusivity between applicants filing FCC Form 175, only auction winners will be eligible to file subsequent long form applications on FCC Form 401 for initial narrowband PCS licenses. Mutually exclusive applications filed on Form 175 are subject to competitive bidding under those rules. Narrowband PCS applicants filing Form 401 need not complete Schedule B.

(c) All applications for Narrowband PCS radio station authorizations (other than applications for initial provision of narrowband PCS service filed on FCC Form 175) shall be submitted for filing to: Federal Communications Commission, Washington, DC 20554, Attention: Narrowband PCS Processing Section. Applications requiring fees as set forth at Part 1, Subpart G of this chapter must be filed in accordance with § 0.401(b) of this chapter.

(d) All correspondence or amendments concerning a submitted application shall clearly identify the name of the applicant, applicant identification number or Commission file number (if known) or station call sign of the application involved, and may be sent directly to the Common Carrier Bureau, Narrowband PCS Processing Section.

(e) Except as otherwise specified, all applications, amendments, correspondence, pleadings and forms (including FCC Form 175) shall be submitted on one original paper copy and with three microfiche copies, including exhibits and attachments thereto, and shall be signed as prescribed by § 1.743 of this chapter. Unless otherwise provided by the FCC, filings of five pages or less are exempt from the requirement to submit on microfiche, as well as emergency filings like letters requesting special temporary authority. Those filing any amendments, correspondence, pleadings, and forms must simultaneously submit the original hard copy which must be stamped "original". In addition to the original hard copy, those filing pleadings, including pleadings under § 1.2108 of this chapter shall also submit 2 paper copies

as provided in § 1.51 of this chapter.

(1) Microfiche copies. Each microfiche copy must be a copy of the signed original. Each microfiche copy shall be a 148mm 0A 105mm negative (clear transparent characters appearing on an opaque background) at 240A to 270A reduction for microfiche or microfiche jackets. One of the microfiche sets must be a silver halide camera master or a copy made on silver halide film such as Kodak Direct Duplicatory Film. The microfiche must be placed in paper microfiche envelopes and submitted in a B6 (125 mm 0A 176 mm) or 5 0A 7.5 inch envelope. All applicants must leave Row "A" (the first row for page images) of the first fiche blank for in-house identification purposes.

(2) All applications and all amendments must have the following information printed on the mailing envelope, the microfiche envelope, and on the title area at the top of the microfiche: (i) The name of the applicant; (ii) The type of application (e.g. nationwide, regional, MTA, BTA, response channel); (iii) The month and year of the document; (iv) Name of the document; (v) File number, applicant identification number, and call sign, if assigned; and (vi) The identification number and date of the Public Notice announcing the auction in response to which the application was filed (if applicable). Each microfiche copy of pleadings shall include: (A) The month and year of the document; (B) Name of the document; (C) Name of the filing party; (D) File number, applicant identification number, and call sign, if assigned; (E) The identification number and date of the Public Notice announcing the auction in response to which the application was filed (if applicable). Abbreviations may be used if they are easily understood.

#### **§§ 24.407-8 [Reserved]**

#### **§ 24.409 Standard application forms and permissive changes or minor modifications for the narrowband Personal Communications Service.**

(a) Applications for the initial provision of narrowband PCS service must be filed on FCC Forms 175 and 175-S.

(b) Subsequent application by auction winners or non-mutually exclusive applicants for narrowband PCS radio station(s) under Part 24. FCC Form 401 ("Application for New or Modified Common Carrier Radio Station Under Part 22") shall be submitted by each auction winner for each narrowband PCS license applied for on FCC Form 175. In the event that mutual exclusivity does not exist between applicants filing FCC Form 175, the Commission will so inform the applicant and the applicant will also file FCC Form 401. Blanket licenses are granted for each market frequency block. Applications for individual sites are not needed and will not be accepted. See § 24.11. Narrowband PCS applicants filing Form 401 need not complete Schedule B.

(c) Extensions of time and reinstatement. When a licensee cannot complete construction in accordance with the provisions of § 24.103, a timely application for extension of time (FCC Form 489) must be filed.

(d) License for mobile subscriber station—These stations are considered to be associated

with and covered by the authorization issued to the carrier serving the land mobile station. No additional authorization is required.

#### **§ 24.410 [Reserved]**

#### **§ 24.411 Miscellaneous forms.**

(a) Licensee qualifications. FCC Form 430 ("Common Carrier and Satellite Radio Licensee Qualifications Report") shall be filed by Narrowband Personal Communications Service licensees only as required by Form 490 (Application for Assignment or Transfer of Control Under part 22).

(b) Renewal of station license. Except for renewal of special temporary authorizations, FCC Form 405 ("Application for Renewal of Station License") must be filed in duplicate by the licensee between thirty (30) and sixty (60) days prior to the expiration date of the license sought to be renewed.

#### **§ 24.412 [Reserved]**

#### **§ 24.413 General application requirements.**

(a) Each application (including applications filed on Forms 175 and 401) for a radio station authorization or for consent to assignment or transfer of control in the narrowband PCS shall disclose fully the real party or parties in interest and must include the following information:

(1) A list of its subsidiaries, if any. Subsidiary means any business five per cent or more whose stock, warrants, options or debt securities are owned by the applicant or an officer, director, stockholder or key management personnel of the applicant. This list must include a description of each subsidiary's principal business and a description of each subsidiary's relationship to the applicant.

(2) A list of its affiliates, if any. Affiliates means any business which holds a five per cent or more interest in the applicant, or any business in which a five per cent or more interest is held by another company which holds a five per cent interest in the applicant (e.g. Company A owns 5% of Company B and 5% of Company C; Companies B and C are affiliates).

(3) A list of the names, addresses, citizenship and principal business of any person holding five per cent or more of each class of stock, warrants, options or debt securities together with the amount and percentage held, and the name, address, citizenship and principal place of business of any person on whose account, if other than the holder, such interest is held. If any of these persons are related by blood or marriage, include such relationship in the statement.

(4) In the case of partnerships, the name and address of each partner, each partner's 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. This information must be included in Exhibit V of the application.

(b) Each application for a radio station authorization in the narrowband PCS must:

(1) Submit the information required by the Commission's rules, requests, and application forms;

(2) Be maintained by the applicant substantially accurate and complete in all significant respects in accordance with the provisions of Sec. 1.65 of this chapter; and

(3) Show compliance with and make all special showings that may be applicable.

(c) Where documents, exhibits, or other lengthy showings already on file with the Commission contain information which is required by an application form, the application may specifically refer to such information, if:

(1) The information previously filed is over one A4 (21 cm x 29.7 cm) or 8.5 x 11 inch (21.6 cm x 27.9 cm) page in length, and all information referenced therein is current and accurate in all significant respects under § 1.65 of this chapter; and

(2) The reference states specifically where the previously filed information can actually be found, including mention of:

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

(ii) The title of the proceeding, the docket number, and any legal citations, whenever the reference is to a docketed proceeding. However, questions on an application form which call for specific technical data, or which can be answered by a "yes" or "no" or other short answer shall be answered as appropriate and shall not be cross-referenced to a previous filing.

(d) In addition to the general application requirements of subpart F and §§ 1.2105, 24.413 and 24.415 of this part, applicants shall submit any additional documents, exhibits, or signed written statements of fact:

(1) As may be required by these rules; and

(2) As the Commission, at any time after the filing of an application and during the term of any authorization, may require from any applicant, permittee, or licensee to enable it to determine whether a radio authorization should be granted, denied, or revoked.

(e) Except when the Commission has declared explicitly to the contrary, an informational requirement does not in itself imply the processing treatment of decisional weight to be accorded the response.

(f) All applicants (except applicants filing FCC Form 175) are required to indicate at the time their application is filed whether or not a Commission grant of the application may have a significant environmental impact as defined by 47 CFR 1.1307 of the Commission's rules. If answered affirmatively, the requisite environmental assessment as prescribed in § 1.1311 of this chapter must be filed with the application and Commission environmental review must be completed prior to construction. See § 1.1312 of this chapter. All narrowband PCS licensees are subject to a continuing obligation to determine whether subsequent construction may have a significant environmental impact prior to undertaking such construction and to otherwise comply with §§ 1.1301 through 1.1319 of this chapter. See 47 CFR 1.1312.

#### **§ 24.414 [Reserved]**

#### **§ 24.415 Technical content of applications; maintenance of list of station locations.**

(a) All applications required by this part shall contain all technical information required by the application forms or associated Public Notice(s). Applications other than initial applications for a narrowband PCS license must also comply with all technical requirements of the rules governing the narrowband PCS (see subparts C and D as appropriate). The following paragraphs describe a number of general technical requirements.

(b) Each application (except applications for initial licenses filed on Form 175) for a radio station authorization for narrowband PCS must comply with the provisions of §§ 24.129 through 24.135.

(c)-(i) [Reserved]

(j) The location of the transmitting antenna shall be considered to be the station location. Narrowband PCS licensees must maintain a current list of all station locations, which must describe the transmitting antenna site by its geographical coordinates and also by conventional reference to street number, landmark, or the equivalent. All such coordinates shall be specified in terms of degrees, minutes, and seconds to the nearest second of latitude and longitude.

#### **§ 24.416 Station antenna structures.**

(a) Unless the narrowband PCS licensee has received prior approval from the FCC, no antenna structure, including radiating elements, tower, supports and all appurtenances, may be higher than 61 m (200 feet) above ground level at its site.

(b) Unless the narrowband PCS licensee has received prior approval from the FCC, no antenna structure at an airport or heliport that is available for public use and is listed in the Airport Directory of the current Airman's Information Manual or in either the Alaska or Pacific Airman's Guide and Chart Supplement; or at an airport or heliport under construction that is the subject of a notice or proposal on file with the FAA, and except for military airports, it is clearly indicated that the airport will be available for public use; or at an airport or heliport that is operated by the armed forces of the United States; or at a place near any of these airports or heliports, may be higher than:

(1) 1 m above the airport elevation for each 100 m from the airport runway longer than 1 km within 6.1 km of the antenna structure.

(2) 2 m above the airport elevation for each 100 m from the nearest runway shorter than 1 km within 3.1 km of the antenna structure.

(3) 4 m above the airport elevation for each 100 m from the nearest landing pad within 1.5 km of the antenna structure.

(c) A narrowband PCS station antenna structure no higher than 6.1 m (10 feet) above ground level at its site or no higher than 6.1 m above any natural object or existing manmade structure, other than an antenna structure, is exempt from the requirements of paragraphs (a) and (b) of this section.

(d) Further details as to whether an aeronautical study and/or obstruction marking and

lighting may be required, and specifications for obstruction marking and lighting are contained in Part 17 of the FCC Rules, Construction, Marking and Lighting of Antenna Structures. To request approval to place an antenna structure higher than the limits specified in paragraphs (a), (b), and (c) of this section, the licensee must notify the Federal Aviation Administration (FAA) on FAA Form 7460-1 and the FCC on FCC Form 854.

**§§ 24.417–24.418 [Reserved]**

**§ 24.419 Waiver of rules.**

(a) *Request for waivers.* (1) Waivers of these rules may be granted upon application or by the Commission on its own motion. Requests for waivers shall contain a statement of reasons sufficient to justify a waiver. Waivers will not be granted except upon an affirmative showing:

(i) That the underlying purpose of the rule will not be served, or would be frustrated, by its application in a particular case, and that grant of the waiver is otherwise in the public interest; or

(ii) That the unique facts and circumstances of a particular case render application of the rule inequitable, unduly burdensome or otherwise contrary to the public interest. Applicants must also show the lack of a reasonable alternative.

(2) If the information necessary to support a waiver request is already on file, the applicant may cross-reference to the specific filing where it may be found.

(b) *Denial of waiver, alternate showing required.* If a waiver is not granted, the application will be dismissed as defective unless the applicant has also provided an alternative proposal which complies with the Commission's rules (including any required showings).

**§ 24.420 Defective applications.**

(a) Unless the Commission shall otherwise permit, an application will be unacceptable for filing and will be returned to the applicant with a brief statement as to the omissions or discrepancies if:

(1) The application is defective with respect to completeness of answers to questions, informational showings, execution, or other matters of a formal character; or

(2) The application does not comply with the Commission's rules, regulations, specific requirements for additional information or other requirements. See also 47 CFR 1.2105.

(b) Some examples of common deficiencies which result in defective applications under paragraph (a) of this section are:

(1) The application is not filled out completely and signed;

(2)-(4) [Reserved]

(5) The application (other an application filed on FCC Form 175) does not include an environmental assessment as required for an action that may have a significant impact upon the environment, as defined in § 1.1307 of this chapter.

(6) [Reserved]

(7) The application is filed prior to the Public Notice issued under § 24.305 of this Part announcing the application filing date for the relevant auction or after the cutoff date prescribed in that Public Notice;

(c) [Reserved]

(d) If an applicant is requested by the Commission to file any documents or any supplementary or explanatory information not specifically required in the prescribed application form, a failure to comply with such request within a specified time period will be deemed to render the application defective and will subject it to dismissal.

#### **§ 24.421 Inconsistent or conflicting applications.**

While an application is pending and undecided, no subsequent inconsistent or conflicting application may be filed by the same applicant, his successor or assignee, or on behalf or for the benefit of the same applicant, his successor or assignee.

#### **§ 24.422 Amendment of application for Narrowband Personal Communications Service filed on FCC Form 175.**

(a) The Commission will provide bidders a limited opportunity to cure defects in FCC Form 175 specified herein except for failure to sign the application and to make certifications. These are defects which may not be cured. See also Section 1.2105 of this chapter.

(b) In the Narrowband PCS, applicants will be permitted to amend their Form 175 applications to make minor amendments to correct minor errors or defects such as typographical errors. Applicants will also be permitted to amend FCC Form 175, to make ownership changes or changes in the identification of parties to bidding consortia, provided such changes do not result in a change in control of the applicant and do not involve another applicant (or parties in interest to an applicant) who has applied for any of the same licenses as the applicant. Amendments which change control of the applicant will be considered major amendments. An FCC Form 175 which is amended by a major amendment will be considered to be newly filed and cannot be resubmitted after applicable filing deadlines. See also § 1.2105 of this chapter.

#### **§ 24.423 Amendment of applications for Narrowband Personal Communications Service (other than applications filed on FCC Form 175).**

This section applies to all applications for Narrowband Personal Communications Service other than applications filed on FCC Form 175.

(a) *Amendments as of right.* A pending application may be amended as a matter of right if the application has not been designated for hearing.

(1) Amendments shall comply with § 24.429, as applicable; and

(2) Amendments which resolve interference conflicts or amendments under § 24.429 may be



filed at any time.

(b) The Commission or the presiding officer may grant requests to amend an application designated for hearing only if a written petition demonstrating good cause is submitted and properly served upon the parties of record.

(c) *Major amendments, minor amendments.* The Commission will classify all amendments as minor except in the cases listed below. An amendment shall be deemed to be a major amendment subject to § 24.427 under any of the following circumstances:

(1) Change in technical proposal. If the amendment results in a substantial change in the engineering proposal such as (but not necessarily limited to) a change in, or an addition of, a radio frequency; or

(2) Amendment to proposed service area. If the amendment extends the reliable service area of the proposed facilities outside its MTA, BTA, or other applicable market area as defined in § 24.102; or

(3) A substantial change in ownership or control.

(d) If a petition to deny (or other formal objection) has been filed, any amendment, requests for waiver, (or other written communications) shall be served on the petitioner, unless waiver of this requirement is granted pursuant to paragraph (e) of this section. See also 47 CFR 1.2108.

(e) The Commission may waive the service requirements of paragraph (d) of this section and prescribe such alternative procedures as may be appropriate under the circumstances to protect petitioners' interests and to avoid undue delay in a proceeding, if an applicant submits a request for waiver which demonstrates that the service requirement is unreasonably burdensome.

(f) Any amendment to an application shall be signed and shall be submitted in the same manner, and with the same number of copies, as was the original application. Amendments may be made in letter form if they comply in all other respects with the requirements of this chapter.

(g) An application will be considered to be a newly filed application if it is amended by a major amendment (as defined in this section), except in the following circumstances:

(1) [Reserved]

(2) [Reserved]

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

(4) [Reserved]

(5) The amendment corrects typographical transcription, or similar clerical errors which are clearly demonstrated to be mistakes by reference to other parts of the application, and whose discovery does not create new or increased frequency conflicts;

(6) The amendment does not create new or increased frequency conflicts, and is demonstrably necessitated by events which the applicant could not have reasonably foreseen at the time of filing, such as, for example:

(i) The loss of a transmitter or receiver site by condemnation, natural causes, or loss of lease or option; or

(ii) Obstruction of a proposed transmission path caused by the erection of a new building or other structure.

#### **§ 24.424 [Reserved]**

#### **§ 24.425 Application for temporary authorizations.**

(a) In circumstances requiring immediate or temporary use of facilities, request may be made for special temporary authority to install and/or operate new or modified equipment. Any such request may be submitted as an informal application in the manner set forth in § 24.405 and must contain full particulars as to the proposed operation including all facts sufficient to justify the temporary authority sought and the public interest therein. No such request will be considered unless the request is received by the Commission at least 10 days prior to the date of proposed construction or operation or, where an extension is sought, expiration date of the existing temporary authorization. A request received within less than 10 days may be accepted upon due showing of sufficient reasons for the delay in submitting such request.

(b) Special temporary authorizations may be granted without regard to the 30-day public notice requirements of § 24.427(b) when:

(1) The authorization is for a period not to exceed 30 days and no application for regular operation is contemplated to be filed;

(2) The authorization is for a period not to exceed 60 days pending the filing of an application for such regular operation;

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

(4) The authorization 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.

(c) Temporary authorizations of operation not to exceed 180 days may be granted under the standards of section 309(f) of the Communications Act where extraordinary circumstances so require. Extensions of the temporary authorization for a period of 180 days each may also be granted, but the renewal applicant bears a heavy burden to show that extraordinary circumstances warrant such an extension.

(d) In cases of emergency found by the Commission, involving danger to life or property or due to damage of equipment, or during a national emergency proclaimed by the president or declared by the Congress or during the continuance of any war in which the United States is engaged and when such action is necessary for the national defense or safety or otherwise in furtherance of the war effort, or in cases of emergency where the Commission finds that it would not be feasible to secure renewal applications from existing licensees or otherwise to follow normal licensing procedure, the Commission will grant radio station authorizations and station licenses, or modifications or renewals thereof, during the emergency found by the Commission or during the continuance of any such national emergency or war, as special