

**§ 78.104**

**47 CFR Ch. I (10–1–20 Edition)**

each frequency band, the Commission reserves the right to issue a license for less than the maximum bandwidth if it appears that a bandwidth less than the maximum would be sufficient to support an applicant's intended communications.

cent of the total radiated power to be kept within the frequency limits of the assigned channel.

(c) The emission designator shall be specified in terms of the necessary bandwidth. (See §2.201(a) of this chapter.)

Frequency band (MHz)	Maximum authorized band-width (MHz)
1,990 to 2,110 .....	17 or 18. <sup>1</sup>
6,425 to 6,525 .....	8 or 25.
6,875 to 7,125 .....	25.
12,700 to 13,250 .....	25.
17,700 to 19,700 .....	80.

[39 FR 26025, July 16, 1974, as amended at 45 FR 78694, Nov. 26, 1980]

<sup>1</sup> After a licensee has been relocated in accordance with § 78.40, the maximum authorized bandwidth in the frequency band 2025 to 2010 MHz will be 12 megahertz.

**§ 78.105 Antenna systems.**

[37 FR 3292, Feb. 12, 1972, as amended at 37 FR 15927, Aug. 8, 1972; 38 FR 16648, June 25, 1973; 39 FR 26025, July 16, 1974; 48 FR 50736, Nov. 3, 1983; 49 FR 37779, Sept. 26, 1984; 52 FR 7145, Mar. 9, 1987; 65 FR 48182, Aug. 7, 2000; 68 FR 12776, Mar. 17, 2003; 68 FR 68253, Dec. 8, 2003]

(a) For fixed stations operating in the 12.7–13.2 GHz and 17.7–19.7 GHz bands, the following standards apply:

(1) Fixed CARS stations shall use directional antennas that meet the performance standards indicated in the following table.

**§ 78.104 Authorized bandwidth and emission designator.**

(i) Stations must employ an antenna that meets the performance standards for Category B. In areas subject to frequency congestion, where proposed facilities would be precluded by continued use of a Category B antenna, a Category A antenna must be employed. The Commission may require the use of a high performance antenna where interference problems can be resolved by the use of such antennas.

(a) The authorized bandwidth permitted to be used by a CARS station and specified in the station license shall be the occupied or necessary bandwidth, whichever is greater, except when otherwise authorized by the Commission in accordance with paragraph (b) of this section.

(ii) Upon adequate showing of need to serve a larger sector, or more than a single sector, greater beamwidth or multiple antennas may be authorized. Applicants shall request and authorization for stations in this service will specify the polarization of each transmitted signal.

(b) As an exception to the provision of paragraph (a) of this section, the Commission may approve requests to base the authorized bandwidth for the station on the lesser of the occupied or necessary bandwidth where a persuasive showing is made that:

(iii) Licensees shall comply with the antenna standards table shown in this paragraph in the following manner:

(1) The frequency stability of the transmitting equipment to be used will permit compliance with §78.103(b)(1) and, additionally, will permit 99 per-

(A) With either the maximum beamwidth to 3 dB points requirement or with the minimum antenna gain requirement; and

(B) With the minimum radiation suppression to angle requirement.

**ANTENNA STANDARDS**

Frequency (MHz)	Category	Maximum beamwidth to 3 dB points <sup>1</sup> (included angle in degrees)	Minimum antenna gain (dbi)	Minimum radiation suppression to angle in degrees from centerline of main beam in decibels						
				5° to 10°	10° to 15°	15° to 20°	20° to 30°	30° to 100°	100° to 140°	140° to 180°
12,700 to 13,250 .....	A	1.0	n/a	23	28	35	39	41	42	50
	B	2.0	n/a	20	25	28	30	32	37	47