[11] For purposes of certification, a tolerance of 160 Hz applies to the reference oscillator of the AES transmitter. This is a bench test.

[12] For emissions G1D and G7D, the tolerance is 2 parts per 10^6.

[13] For emissions G1D and G7D, the tolerance is 5 parts per 10^6.

(b) The power shown in paragraph (a) of this section is the peak envelope power for single-sideband transmitters and the mean power for all other transmitters.

(c) For single-sideband transmitters, the tolerance is:

(1) All aeronautical stations on land other than Civil Air Patrol.....10 Hz
(2) All aircraft stations other than Civil Air Patrol.....20 Hz
(3) Civil Air Patrol Stations.....50 Hz

(d) For radar transmitters, except non-pulse signal radio altimeters, the frequency at which maximum emission occurs must be within the authorized frequency band and must not be closer than 1.5/T MHz to the upper and lower limits of the authorized bandwidth, where T is the pulse duration in microseconds.

(e) The Commission may authorize tolerances other than those specified in this section upon a satisfactory showing of need.

(f) The carrier frequency tolerance of transmitters operating in the 1435–1535 MHz and 2310–2390 MHz bands manufactured before January 2, 1985, is 0.003 percent. The carrier frequency tolerance of transmitters operating in the 1435–1535 MHz and 2310–2390 MHz bands manufactured after January 1, 1985, is 0.002 percent. After January 1, 1990, the carrier frequency tolerance of all transmitters operating in the 1435–1535 MHz and 2310–2390 MHz bands is 0.002 percent.

[53 FR 28940, Aug. 1, 1988, as amended at 56 FR 38084, Aug. 12, 1991; 57 FR 45749, Oct. 5, 1992; 58 FR 31027, May 26, 1993; 63 FR 36607, July 7, 1998; 64 FR 27474, May 20, 1999; 66 FR 26799, May 15, 2001]

§ 87.135 Bandwidth of emission.

(a) Occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to 0.5 percent of the total mean power of a given emission.

(b) The authorized bandwidth is the maximum occupied bandwidth authorized to be used by a station.

(c) The necessary bandwidth for a given class of emission is the width of the frequency band which is just sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions.

§ 87.137 Types of emission.

(a) The assignable emissions, corresponding emission designators and authorized bandwidths are as follows:

Class of emission	Emission designator	Authorized bandwidth (kilohertz)		
		Below 50 MHz	Above 50 MHz	Frequency deviation
A1A [1]	100HA1A	0.25		
A1N	300HA1N		0.75	
A2A	2K04A2A	2.74	50	
A2D	6K0A2D		50	
A2D [5]	13K0A2D		50	
A3E [2]	6K00A3E		[3] 50	
A3E	3K20A3E [15]		[15] 25	
A3X [4]	3K20A3X		25	
A9W [5]	13K0A9W		25	
F1B [1]	1K70F1B	1.7		
F1B [1]	2K40F1B	2.5		
F2D	5M0F2D		([9])	
F3E [6]	16K0F3E		20	5
F3E [7]	36K0F3E		40	15
F7D [8]	5M0F7D		([9])	
F9D	5M0F9D		([9])	
G1D	16K0G1D		20kHz	
G1D [16]	21K0G1D		25	
G1D	14K0G1D	.....	25	.....
G1E [16]	21K0G1E		25	
G1W [16]	21K0G1W		25	