

Federal Communications Commission

§ 87.137

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; 69 FR 32880, June 14, 2004]

§ 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	0.75	
A1N	300HA1N			
A2A	2K04A2A	2.74	50	
A2D	6K0A2D			

Class of emission	Emission designator	Authorized bandwidth (kilohertz)		
		Below 50 MHz	Above 50 MHz	Frequency deviation
A2D ⁵	13K0A2D		50	
A3E ²	6K00A3E		50 ³	
A3E	5K6A3E		8.33	
kHz ¹⁷				
A3X ⁴	3K20A3X		25	312.5 kHz
A9W ⁵	13K0A9W		25	
F1B ¹	1K70F1B	1.7		
F1B ¹	2K40F1B	2.5		
F1D ¹⁸	1M30F1D		1300 kHz	
F2D	5M0F2D		(⁹)	
F3E ⁶	16K0F3E		20	
F3E ⁷	36K0F3E		40	
F7D ⁸	5M0F7D		(⁹)	
F9D	5M0F9D		(⁹)	
G1D	16K0G1D		20 kHz	
G1D ¹⁶	21K0G1D		25	
G1D	14K0G1D		25	
F9D	5M0F9D		(⁹)	
G1D	16K0G1D		20 kHz	
G3E ⁶	16K0G3E		20	
G7D	14K0G7D		25	
H2B ^{10 11}	2K80H2B	3.0		
H3E ^{11 12}	2K80H3E	3.0		
J2A ¹	100HJ2A	0.25		
J2B ¹	1K70J2B	1.7		
		2.5		
J3E ^{11 12}	2K80J3E	3.0		
J7B ¹¹	2K80J7B	3.0		
J7D	5M0J7D		(⁹)	
J9W ¹¹	2K80J9W	3.0		
M1A	620HM1A			
NON	NON		None ¹⁵	
PON ¹³	(⁹)		(⁹)	
R3E ^{11 12}	2K80R3E	3.0		
XXA ¹⁴	1K12XXA	2.74		

NOTES:

¹ A1A, F1B, J2A and J2B are permitted provided they do not cause harmful interference to H2B, J3E, J7B and J9W.

² For use with an authorized bandwidth of 8.0 kilohertz at radiobeacon stations. A3E will not be authorized:

(i) At existing radiobeacon stations that are not authorized to use A3 and at new radiobeacon stations unless specifically recommended by the FAA for safety purposes.

(ii) At existing radiobeacon stations currently authorized to use A3, subsequent to January 1, 1990, unless specifically recommended by the FAA for safety purposes.

³ In the band 117.975–136 MHz, the authorized bandwidth is 25 kHz for transmitters approved after January 1, 1974.

⁴ Applicable only to Survival Craft Stations and to the emergency locator transmitters and emergency locator transmitter test stations employing modulation in accordance with that specified in § 87.141 of the Rules. The specified bandwidth and modulation requirements shall apply to emergency locator transmitters for which approval is granted after October 21, 1973.

⁵ This emission may be authorized for audio frequency shift keying and phase shift keying for digital data links on any frequency listed in § 87.263(a)(1), § 87.263(a)(3) or § 87.263(a)(5). 13K0A2D emission may be authorized on frequencies not used for voice communications. If the channel is used for voice communications, 13K0A9W emission may be authorized, provided the data is multiplexed on the voice carrier without derogating voice communications.

⁶ Applicable to operational fixed stations in the bands 72.0–73.0 MHz and 75.4–76.0 MHz and to CAP stations using F3 on 143.900 MHz and 148.150 MHz.

⁷ Applicable to operational fixed stations presently authorized in the band 73.0–74.6 MHz.