

§ 80.209

47 CFR Ch. I (10–1–00 Edition)

Types of stations	Classes of emission
NB-DP ¹⁴	F1B, J2B
Facsimile	F1C, F3C, J2C, J3C
Alaska—Fixed	A1A, A2A, F1B, F2B
72–76 MHz	A1A, A2A, F1B, F2B
156–162 MHz ²	F1B, F2B, F2C, F3C, F1D, F2D
DSC	G2B
216–220 MHz ³	F1B, F2B, F2C, F3C
Radiotelephony:	
1605–27500 kHz	H3E, J3E, R3E
72–76 MHz	A3E, F3E, G3E
156–470 MHz	G3E
Radiodetermination:	
2.4–9.6 GHz	PON
Distress, Urgency and Safety; ^{8,9}	
500 kHz ¹⁰	A2A and A2B or H2A and H2B
2182 kHz ^{10,11}	A2B, A3B, H2B, H3E, J2B, and J3E
8364 kHz	A2A, H2A
121.500 MHz	A3E, A3X, N0N
123.100 MHz	A3E
156.750 and 156.800 MHz ¹³	G3E, G3N
243.000 MHz	A3E, A3X, N0N
406.025 MHz	G1D

¹ Excludes distress, EPIRBs, survival craft, and automatic link establishment.

² Frequencies used for public correspondence and in Alaska 156.425 MHz. See §§ 80.371(c), 80.373(f) and 80.385(b). Transmitters approved before January 1, 1994, for G3E emissions will be authorized indefinitely for F2C, F3C, F1D and F2D emissions. Transmitters approved on or after January 1, 1994, will be authorized for F2C, F3C, F1D or F2D emissions only if they are approved specifically for each emission designator.

³ Frequencies used in the Automated Maritime Telecommunications System (AMTS). See § 80.385(b).

⁴ Types of emission are determined by the INMARSAT Organization.

⁵ Transmitters approved prior to December 31, 1969, for emission H3E, J3E, and R3E and an authorized bandwidth of 3.5 kHz may continue to be operated. These transmitters will not be authorized in new installations.

⁶ G3D emission must be used only by one-board stations for maneuvering or navigation.

⁷ Frequencies used for cable repair operations. See § 80.375(b).

⁸ For direction finding requirements see § 80.375.

⁹ Includes distress emissions used by ship, coast, EPIRB's and survival craft stations.

¹⁰ On 500 kHz and 2182 kHz A1B, A2B, H2B and J2B emissions indicate transmission of the auto alarm signals.

¹¹ Ships on domestic voyages must use J3E emission only.

¹² For frequencies 154.585 MHz, 159.480 MHz, 160.725 MHz, 160.785 MHz, 454.000 MHz and 459.000 MHz, authorized for offshore radiolocation and related telecommand operations.

¹³ Class C EPIRB stations may not be used after February 1, 1999.

¹⁴ NB-DP operations which are not in accordance with CCIR Recommendation 625 or 476 are permitted to utilize any modulation, so long as emissions are within the limits set forth in § 80.211(f).

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986; as amended at 52 FR 7418, Mar. 11, 1987; 52 FR 35244, Sept. 18, 1987; 53 FR 8905, Mar. 18, 1988; 53 FR 37308, Sept. 26, 1988; 54 FR 40058, Sept. 29, 1989; 54 FR 49993, Dec. 4, 1989; 56 FR 11516, Mar. 19, 1991; 57 FR 43407, Sept. 21, 1992; 58 FR 33344, June 17, 1993; 62 FR 40305, July 28, 1997; 63 FR 36606, July 7, 1998]

§ 80.209 Transmitter frequency tolerances.

(a) The frequency tolerance requirements applicable to transmitters in the maritime services are shown in the following table. Tolerances are given as parts in 10⁶ unless shown in Hz.

Frequency bands and categories of stations	Tolerances ¹
(1) Band 100–525 kHz:	
(i) Coast stations:	
For single sideband emissions	20 Hz.
For transmitters with narrow-band direct printing and data emissions.	10 Hz. ²
For transmitters with digital selective calling emissions.	10 Hz.
For all other emissions	100
(ii) Ship stations:	
For transmitters with single sideband emissions approved before November 30, 1977.	20 Hz.
For transmitters with other emissions approved before November 30, 1977.	1000. ⁵
For transmitters with narrow-band direct printing and data emissions.	10 Hz. ²
For transmitters with digital selective calling emissions.	10 Hz. ³
For all other transmitters approved after November 29, 1977.	20 Hz.
(iii) Ship stations for emergency only:	
For transmitters approved before November 30, 1977.	3000. ⁵
For all transmitters approved after November 29, 1977.	20 Hz.
(iv) Survival craft stations:	
For transmitters approved before November 30, 1977.	5000. ⁵
For transmitters approved after November 29, 1977.	20 Hz.
(v) Radiodetermination stations:	
For all emissions	100.
(2) Band 1600–4000 kHz:	
(i) Coast Stations and Alaska fixed stations:	
For single sideband and facsimile	20 Hz.
For narrow-band direct-printing and data emissions.	10 Hz. ²
For digital selective calling emissions	10 Hz.
For all other emissions	50.
(ii) Ship stations:	
For transmitters with narrow-band direct printing and data emissions.	10 Hz. ²
For transmitters with digital selective calling emissions.	10 Hz. ³
For all other transmitters	20 Hz.
(iii) Survival craft stations:	
For all other transmitters	20 Hz.
(iv) Radiodetermination stations:	
With power 200W or less	20.
With power above 200W	10.
(3) Band 4000–27500 kHz:	
(i) Coast stations and Alaska fixed stations:	
For single sideband and facsimile emissions.	20 Hz.
For narrow-band direct printing and data emissions.	10 Hz. ²
For digital selective calling emissions	10 Hz.
For Morse telegraphy emissions	10.
For all other emissions	15.

Federal Communications Commission

§ 80.211

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(ii) Ship stations: For transmitters with narrow-band direct printing and data emissions.	10 Hz. ²
For transmitters with digital selective calling emissions.	10 Hz. ³
For all other transmitters	20 Hz.
(iii) Survival craft stations:	50 Hz.
(4) Band 72–76 MHz:	
(i) Fixed stations: Operating in the 72.0–73.0 and 75.4–76.0 MHz bands.	5.
Operating in the 73.0–74.6 MHz band	50.
(5) Band 156–162 MHz:	
(i) Coast stations: For stations licensed to operate with a carrier power..	
Below 3 watts	10.
3 to 100 watts	75.
(ii) Ship stations	10. ⁴
(iii) Survival craft stations operating on 121.500 MHz.	50.
(iv) EPIRBs: Operating on 121.500 and 243.000 MHz.	50.
Operating on 156.750 and 156.800 MHz ⁵ .	10.
(6) Band 216–220 MHz	
(i) Coast Stations: For all emissions	5.
(ii) Ship stations: For all emissions	5.
(7) Band 400–466 MHz:	
(i) EPIRBs operating on 406.025 MHz	5.
(ii) On-board stations	5.
(iii) Radiolocation and telecommand stations.	5.
(8) Band 1626.5–1646.5 MHz:	
(i) Ship earth stations	5.

¹ Transmitters authorized prior to January 2, 1990, with frequency tolerances equal to or better than those required after this date will continue to be authorized in the maritime services provided they retain approval and comply with the applicable standards in this part.

² The frequency tolerance for narrow-band direct printing and data transmitters installed before January 2, 1992, is 15 Hz for coast stations and 20 Hz for ship stations. The frequency tolerance for narrow-band direct printing and data transmitters approved or installed after January 1, 1992, is 10 Hz.

³ Until February 2, 1999, the frequency tolerance for DSC ship station transmitters in the MF and HF bands that were installed before January 2, 1992, is 20 Hz. The frequency tolerance for DSC ship station transmitters in the MF and HF bands type accepted or installed after January 1, 1992, is 10 Hz. After February 1, 1999, the frequency tolerance for all DSC ship station transmitters in the MF and HF bands (regardless of installation date) is 10 Hz.

⁴ For transmitters in the radiolocation and associated telecommand service operating on 154.585 MHz, 159.480 MHz, 160.725 MHz and 160.785 MHz the frequency tolerance is 15 parts in 10⁶.

⁵ This frequency tolerance applies to ship station transmitters until February 1, 1999. Thereafter, the frequency tolerance is 20 Hz.

⁶ Class C EPIRB stations may not be used after February 1, 1999.

⁷ For transmitters operated at private coast stations with antenna heights less than 6 meters (20 feet) above ground and output power of 25 watts or less the frequency tolerance is 10 parts in 10⁶.

(b) When pulse modulation is used in land and ship radar stations operating in the bands above 2.4 GHz the frequency at which maximum emission occurs must be within the authorized

bandwidth 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. In the band 14.00–14.05 GHz the center frequency must not vary more than 10 MHz from 14.025 GHz.

(c) For stations in the maritime radiodetermination service, other than ship radar stations, the authorized frequency tolerance will be specified on the license when it is not specified in this part.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 7418, Mar. 11, 1987; 53 FR 37308, Sept. 26, 1988; 54 FR 49994, Dec. 4, 1989; 57 FR 26778, June 16, 1992; 58 FR 33344, June 17, 1993; 62 FR 40306, July 28, 1997; 63 FR 36606, July 7, 1998]

§ 80.211 Emission limitations.

The emissions must be attenuated according to the following schedule.

(a) The mean power when using emissions H3E, J3E and R3E:

(1) On any frequency removed from the assigned frequency by more than 50 percent up to and including 150 percent of the authorized bandwidth:

at least 25 dB for transmitters installed before February 1, 1992,
at least 28 dB for transmitters installed on or after February 1, 1992;

(2) On any frequency removed from the assigned frequency by more than 150 percent up to and including 250 percent of the authorized bandwidth: At least 35 dB; and

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 plus 10log₁₀ (mean power in watts) dB.

(b) For transmitters operating in the band 1626.5–1646.5 MHz. In any 4 kHz band the mean power of emissions shall be attenuated below the mean output power of the transmitter as follows:

(1) Where the center frequency is removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: At least 25 dB;

(2) Where the center frequency is removed from the assigned frequency by more than 100 percent up to 250 percent of the authorized bandwidth: At least 35 dB; and

(3) On any frequency removed from the assigned frequency by more than