

(i) For operating frequencies below 15 GHz, in any 4 kHz reference bandwidth (B_{REF}), the center frequency of which is removed from the assigned frequency by more than 50 percent up to and including 250 percent of the authorized bandwidth: As specified by the following equation but in no event less than 50 decibels:

$$A = 35 + 0.8(G - 50) + 10 \log_{10} B.$$

(Attenuation greater than 80 decibels is not required.)

Where:

A = Attenuation (in decibels) below the mean output power level.

G = Percent removed from the carrier frequency.

B = Authorized bandwidth in megahertz.

(ii) For operating frequencies above 15 GHz, in any 1 MHz reference bandwidth (B_{REF}), the center frequency of which is removed from the assigned frequency by more than 50 percent up to and including 250 percent of the authorized bandwidth: As specified by the following equation but in no event less than 11 decibels:

$$A = 11 + 0.4(G - 50) + 10 \log_{10} B.$$

(Attenuation greater than 56 decibels is not required.)

(iii) In any 4 kHz reference bandwidth (B_{REF}), the center frequency of which is removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log_{10} (P_{MEAN}$ in watts) decibels, or 80 decibels, whichever is the lesser attenuation.

(b) For all emissions not covered in paragraph (a) of this section, the peak power of emissions shall be attenuated below the peak envelope transmitter power (P_{PEAK}) in accordance with the following schedule:

(1) On any frequency 500 Hz inside the channel edge up to and including 2500 Hz outside the same edge, the following formula will apply:

$$A = 29 \log_{10} [(25/11)[(D + 2.5 - (W/2))^2] \text{ dB}]$$

(Attenuation greater than 50 decibels is not required.)

Where:

A = Attenuation (in dB) below the peak envelope transmitter power.

D = the displacement frequency (kHz) from the center of the authorized bandwidth.

W = the channel bandwidth (kHz).

(2) On any frequency removed from the channel edge by more than 2500 Hz: At least $43 + 10 \log_{10} (P_{PEAK}$ in watts) dB.

(d) For purposes of compliance with the emission limitation requirements of this section:

(1) If the transmitter modulates a single carrier, digital modulation techniques are considered as being employed when digital modulation occupies 50 percent or more of the total peak frequency deviation of a transmitted radio frequency carrier. The total peak frequency deviation will be determined by adding the deviation produced by the digital modulation signal and the deviation produced by any frequency division multiplex (FDM) modulation used. The deviation (D) produced by the FDM signal must be determined in accordance with § 2.202(f) of this chapter.

(2) If the transmitter modulates two or more carriers, with at least one using digital modulation and one using frequency or other analog modulation, digital modulation techniques are considered as being employed when the necessary bandwidth of the digital signal(s) is 50 percent or more of the aggregate bandwidth of the system, comprising the digital necessary bandwidth(s), the analog necessary bandwidth(s), and any bandwidth(s) between the digital and analog necessary bandwidths. In this case, the aggregate bandwidth shall be used for the authorized bandwidth (B) in paragraph (a) of this section, and for purposes of compliance with the bandwidth limitations in § 74.502 of this subpart; and the sum of the powers of the analog and digital signals shall be used for mean transmitter power (P_{MEAN}) in paragraph (a) or the peak envelope transmitter power (P_{PEAK}) in paragraph (b) of this section, and for purposes of compliance with the power limitations in § 74.534 of this subpart.

(3) For demonstrating compliance with the attenuation requirements for frequency modulation and digital modulation in paragraph (a) of this section, the resolution bandwidth (B_{RES}) of the measuring equipment used for measurements removed from the center frequency by more than 250 percent of the authorized bandwidth shall be 100 kHz for operating frequencies below 1 GHz, and 1 MHz for operating frequencies above 1 GHz. The resolution bandwidth for frequencies removed from the center frequency by less than 250 percent of the authorized bandwidth shall be the reference bandwidth (B_{REF}) specified in the individual emission limitations, but may be reduced to not less than one percent of the authorized bandwidth (B), adjusted upward to the nearest greater resolution bandwidth available on the measuring equipment. In all cases, if B_{RES} and B_{REF} are not equal, then the attenuation requirement must be increased (or decreased) as

determined by a factor of $10 \log_{10} [(B_{REF} \text{ in megahertz}) / (B_{RES} \text{ in megahertz})]$ decibels, where a positive factor indicates an increase in the attenuation requirement and a negative factor indicates a decrease in the attenuation requirement.

(4) Stations licensed pursuant to an application filed before March 17, 2005, using equipment not conforming with the emission limitations specified above, may continue to operate indefinitely in accordance with the terms of their current authorizations, subject to periodic renewal. Existing equipment and equipment of product lines in production before April 16, 2003, authorized via certification or verification before March 17, 2005, for equipment not conforming to the emission limitations requirements specified above, may continue to be manufactured and/or marketed, but may not be authorized for use under a station license except at stations licensed pursuant to an application filed before March 17, 2005. Any non-conforming equipment authorized under a station license, and replaced on or after March 17, 2005, must be replaced by conforming equipment.

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§ 74.536 [Amended]

33. Section 74.536 is amended by removing the entry for 31.0 to 31.3 and footnotes 2 and 3 from the table in paragraph (c).

34. Section 74.537 is amended by revising paragraphs (b) and (c) to read as follows:

§ 74.537 Temporary authorizations.

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(b) A request for special temporary authority for the operation of an aural broadcast STL or an intercity relay station must be made in accordance with the procedures of § 1.931(b) of this chapter.

(c) All requests for special temporary authority of an aural broadcast auxiliary stations must include full particulars including: licensee's name and address, facility identification number of the associated broadcast station(s), call letters of the aural broadcast STL or intercity relay station, if assigned, type and manufacturer of equipment, effective isotropic radiated power, emission, frequency or frequencies proposed for use, commencement and termination date and location of the proposed operation, and purpose for which request is made including any particular justification.

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