

*Free space field strength.* The field strength that would exist at a point in the absence of waves reflected from the earth or other reflecting objects.

*Frequency departure.* The amount of variation of a carrier frequency or center frequency from its assigned value.

*Frequency deviation.* The peak difference between modulated wave and the carrier frequency.

*Frequency modulation.* A system of modulation where the instantaneous radio frequency varies in proportion to the instantaneous amplitude of the modulating signal (amplitude of modulating signal to be measured after pre-emphasis, if used) and the instantaneous radio frequency is independent of the frequency of the modulating signal.

*Frequency swing.* The peak difference between the maximum and the minimum values of the instantaneous frequency of the carrier wave during modulation.

*Multiplex transmission.* The term "multiplex transmission" means the simultaneous transmission of two or more signals within a single channel. Multiplex transmission as applied to FM broadcast stations means the transmission of facsimile or other signals in addition to the regular broadcast signals.

*Percentage modulation.* The ratio of the actual frequency deviation to the frequency deviation defined as 100% modulation, expressed in percentage. For FM broadcast stations, a frequency deviation of  $\pm 75$  kHz is defined as 100% modulation.

(b) *Stereophonic sound broadcasting.*

*Cross-talk.* An undesired signal occurring in one channel caused by an electrical signal in another channel.

*FM stereophonic broadcast.* The transmission of a stereophonic program by a single FM broadcast station utilizing the main channel and a stereophonic subchannel.

*Left (or right) signal.* The electrical output of a microphone or combination of microphones placed so as to convey the intensity, time, and location of sounds originating predominately to the listener's left (or right) of the center of the performing area.

*Left (or right) stereophonic channel.* The left (or right) signal as electrically

reproduced in reception of FM stereophonic broadcasts.

*Main channel.* The band of frequencies from 50 to 15,000 Hz which frequency-modulate the main carrier.

*Pilot subcarrier.* A subcarrier that serves as a control signal for use in the reception of FM stereophonic sound broadcasts.

*Stereophonic separation.* The ratio of the electrical signal caused in sound channel A to the signal caused in sound channel B by the transmission of only a channel B signal. Channels A and B may be any two channels of a stereophonic sound broadcast transmission system.

*Stereophonic sound.* The audio information carried by plurality of channels arranged to afford the listener a sense of the spatial distribution of sound sources. Stereophonic sound broadcasting includes, but is not limited to, biphonic (two channel), triphonic (three channel) and quadrophonic (four channel) program services.

*Stereophonic sound subcarrier.* A subcarrier within the FM broadcast baseband used for transmitting signals for stereophonic sound reception of the main broadcast program service.

*Stereophonic sound subchannel.* The band of frequencies from 23 kHz to 99 kHz containing sound subcarriers and their associated sidebands.

(c) *Visual transmissions.* Communications or message transmitted on a subcarrier intended for reception and visual presentation on a viewing screen, teleprinter, facsimile printer, or other form of graphic display or record.

(d) *Control and telemetry transmissions.* Signals transmitted on a multiplex subcarrier intended for any form of control and switching functions or for equipment status data and aural or visual alarms.

[28 FR 13623, Dec. 14, 1963, as amended at 39 FR 10575, Mar. 21, 1974; 44 FR 36038, June 20, 1979; 48 FR 28454, June 22, 1983; 48 FR 29507, June 27, 1983; 48 FR 37216, Aug. 17, 1983; 49 FR 45145, Nov. 15, 1984; 57 FR 48333, Oct. 23, 1992; 62 FR 51058, Sept. 30, 1997]

**§ 73.311 Field strength contours.**

(a) Applications for FM broadcast authorizations must show the field strength contours required by FCC

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Form 301 or FCC Form 340, as appropriate.

(b) The field strength contours provided for in this section shall be considered for the following purposes only:

(1) In the estimation of coverage resulting from the selection of a particular transmitter site by an applicant for an FM broadcast station.

(2) In connection with problems of coverage arising out of application of § 73.3555.

(3) In determining compliance with § 73.315(a) concerning the minimum field strength to be provided over the principal community to be served.

(4) In determining compliance with § 73.215 concerning contour protection.

[28 FR 13623, Dec. 14, 1963, as amended at 31 FR 10126, July 27, 1966; 32 FR 11471, Aug. 9, 1967; 52 FR 10570, Apr. 2, 1987; 54 FR 9802, Mar. 8, 1989]

### § 73.312 Topographic data.

(a) In the preparation of the profile graphs previously described, and in determining the location and height above mean sea level of the antenna site, the elevation or contour intervals shall be taken from United States Geological Survey Topographic Quadrangle Maps, United States Army Corps of Engineers Maps or Tennessee Valley Authority maps, whichever is the latest, for all areas for which such maps are available. If such maps are not published for the area in question, the next best topographic information should be used. Topographic data may sometimes be obtained from state and municipal agencies. The data from the Sectional Aeronautical Charts (including bench marks) or railroad depot elevations and highway elevations from road maps may be used where no better information is available. In cases where limited topographic data can be obtained, use may be made of an altimeter in a car driven along roads extending generally radially from the transmitter site.

(b) The Commission will not ordinarily require the submission of topographical maps for areas beyond 24 km (15 miles) from the antenna site, but the maps must include the principal city or cities to be served. If it appears necessary, additional data may be requested.

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(c) The U.S. Geological Survey Topography Quadrangle Sheets may be obtained from the U.S. Geological Survey Department of the Interior, Washington, DC 20240. The Sectional Aeronautical Charts are available from the U.S. Coast and Geodetic Survey, Department of Commerce, Washington, DC 20235. These maps may also be secured from branch offices and from authorized agents or dealers in most principal cities.

(d) In lieu of maps, the average terrain elevation may be computer generated except in cases of dispute, using elevations from a 30 second, point or better topographic data file. The file must be identified and the data processed for intermediate points along each radial using linear interpolation techniques. The height above mean sea level of the antenna site must be obtained manually using appropriate topographic maps.

[28 FR 13623, Dec. 14, 1963, as amended at 31 FR 10126, July 27, 1966; 49 FR 48937, Dec. 17, 1984; 58 FR 44950, Aug. 25, 1993; 63 FR 33877, June 22, 1998]

### § 73.313 Prediction of coverage.

(a) All predictions of coverage made pursuant to this section shall be made without regard to interference and shall be made only on the basis of estimated field strengths.

(b) Predictions of coverage shall be made only for the same purposes as relate to the use of field strength contours as specified in § 73.311.

(c) In predicting the distance to the field strength contours, the F(50,50) field strength chart, Figure 1 of § 73.333 must be used. The 50% field strength is defined as that value exceeded for 50% of the time.

(1) The F(50,50) chart gives the estimated 50% field strengths exceeded at 50% of the locations in dB above 1  $\mu\text{V}/\text{m}$ . The chart is based on an effective power radiated from a half-wave dipole antenna in free space, that produces an unattenuated field strength at 1 kilometer of about 107 dB above 1  $\mu\text{V}/\text{m}$  (221.4 mV/m).

(2) To use the chart for other ERP values, convert the ordinate scale by the appropriate adjustment in dB. For example, the ordinate scale for an ERP of 50 kW should be adjusted by 17 dB [10