

§ 73.267 Determining operating power.

(a) The operating power of each FM station is to be determined by either the direct or indirect method.

(b) Direct method. The direct method of power determination for an FM station uses the indications of a calibrated transmission line meter (responsive to relative voltage, current, or power) located at the RF output terminals of the transmitter. This meter must be calibrated whenever there is any indication that the calibration is inaccurate or whenever any component of the metering circuit is repaired or replaced. The calibration must cover, as a minimum, the range from 90% to 105% of authorized power. The meter calibration may be checked by measuring the power at the transmitter terminals while either:

(1) Operating the transmitter into the transmitting antenna, and determining actual operating power by the indirect method described in § 73.267(c); or

(2) Operating the transmitter into a load (of substantially zero reactance and a resistance equal to the transmission line characteristic impedance) and using an electrical device (within ±5% accuracy) or temperature and coolant flow indicator (within ±4% accuracy) to determine the power.

(3) The calibration must cover, as a minimum, the range from 90% to 105% of authorized power and the meter must provide clear indications which will permit maintaining the operating power within the prescribed tolerance or the meter shall be calibrated to read directly in power units.

(c) *Indirect method.* The operating power is determined by the indirect method by applying an appropriate factor to the input power to the last radio-frequency power amplifier stage of the transmitter, using the following formula:

$$\text{Transmitter output power} = E_p \times I_p \times F$$

Where:

E_p = DC input voltage of final radio stage.

I_p = Total DC input current of final radio stage.

F = Efficiency factor.

(1) If the above formula is not appropriate for the design of the transmitter final amplifier, use a formula specified

by the transmitter manufacturer with other appropriate operating parameters.

(2) The value of the efficiency factor, F , established for the authorized transmitter output power is to be used for maintaining the operating power, even though there may be some variation in F over the power operating range of the transmitter.

(3) The value of F is to be determined and a record kept thereof by one of the following procedures listed in order of preference:

(i) Using the most recent measurement data for calibration of the transmission line meter according to the procedures described in paragraph (b) of this section or the most recent measurements made by the licensee establishing the value of F . In the case of composite transmitters or those in which the final amplifier stages have been modified pursuant to FCC approval, the licensee must furnish the FCC and also retain with the station records the measurement data used as a basis for determining the value of F .

(ii) Using measurement data shown on the transmitter manufacturer's test data supplied to the licensee; *Provided*, That measurements were made at the authorized frequency and transmitter output power.

(iii) Using the transmitter manufacturer's measurement data submitted to the FCC for type acceptance and as shown in the instruction book supplied to the licensee.

(Secs. 4, 5, 303, 48 Stat., as amended, 1066, 1068, 1082 (47 U.S.C. 154, 155, 303))

[44 FR 58731, Oct. 11, 1979, as amended at 45 FR 28141, Apr. 28, 1980; 48 FR 38479, Aug. 24, 1983; 49 FR 4210, Feb. 3, 1984; 49 FR 49851, Dec. 24, 1984]

§ 73.277 Permissible transmissions.

(a) No FM broadcast licensee or permittee shall enter into any agreement, arrangement or understanding, oral or written, whereby it undertakes to supply, or receives consideration for supplying, on its main channel a functional music, background music, or other subscription service (including storecasting) for reception in the place or places of business of any subscriber.

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(b) The transmission (or interruption) of radio energy in the FM broadcast band is permissible only pursuant to a station license, program test authority, construction permit, or experimental authorization and the provisions of this part of the rules.

[29 FR 7471, June 10, 1964. Redesignated at 39 FR 38655, Nov. 1, 1974 and amended at 48 FR 28454, June 22, 1983]

§ 73.293 Use of FM multiplex subcarriers.

Licensees of FM broadcast stations may transmit, without further authorization, subcarrier communication services in accordance with the provisions of §§ 73.319 and 73.322.

[51 FR 17028, May 8, 1986]

§ 73.295 FM subsidiary communications services.

(a) Subsidiary communication services are those transmitted on a subcarrier within the FM baseband signal, but do not include services which enhance the main program broadcast service, or exclusively relate to station operations (see § 73.293). Subsidiary communications include, but are not limited to services such as functional music, specialized foreign language programs, radio reading services, utility load management, market and financial data and news, paging and calling, traffic control signal switching, bilingual television audio, and point to point or multipoint messages.

(b) FM subsidiary communications services that are common carrier in nature are subject to common carrier regulation. Licensees operating such services are required to apply to the FCC for the appropriate authorization and to comply with all policies and rules applicable to the service. Responsibility for making the initial determinations of whether a particular activity is common carriage rests with the FM station licensee. Initial determinations by licensees are subject to FCC examination and may be reviewed at the FCC's discretion.

(c) Subsidiary communications services are of a secondary nature under the authority of the FM station authorization, and the authority to provide such communications services may not be retained or transferred in

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any manner separate from the station's authorization. The grant or renewal of an FM station permit or license is not furthered or promoted by proposed or past services. The permittee or licensee must establish that the broadcast operation is in the public interest wholly apart from the subsidiary communications services provided.

(d) The station identification, delayed recording and sponsor identification announcements required by §§ 73.1201, 73.1208, and 73.1212 are not applicable to material transmitted under an SCA.

(e) The licensee or permittee must retain control over all material transmitted in a broadcast mode via the station's facilities, with the right to reject any material that it deems inappropriate or undesirable.

[48 FR 28454, June 22, 1983, as amended at 48 FR 44805, Sept. 30, 1983; 49 FR 33663, Aug. 15, 1984; 50 FR 32416, Aug. 12, 1985; 57 FR 48333, Oct. 23, 1992]

§ 73.297 FM stereophonic sound broadcasting.

(a) An FM broadcast station may, without specific authority from the FCC, transmit stereophonic (biphonic, quadraphonic, etc.) sound programs upon installation of stereophonic sound transmitting equipment under the provisions of §§ 2.1001, 73.322, and 73.1590 of the Rules. Prior to commencement of stereophonic sound broadcasting, equipment performance measurements must be made to ensure that the transmitted signal complies with all applicable rules and standards.

(b) Each licensee or permittee engaging in multichannel broadcasting must measure the pilot subcarrier frequency as often as necessary to ensure that it is kept at all times within 2 Hz of the authorized frequency.

[48 FR 28454, June 22, 1983, and 48 FR 38479, Aug. 24, 1983]

§ 73.310 FM technical definitions.

(a) *Frequency modulation.*

Antenna height above average terrain (HAAT). HAAT is calculated by: determining the average of the antenna heights above the terrain from 3 to 16 kilometers (2 to 10 miles) from the antenna for the eight directions evenly spaced for each 45° of azimuth starting