

§ 73.319 Subsidiary communications multiplex operations: engineering standards.

(a) Frequency modulation of SCA subcarriers shall be used.

(b) The instantaneous frequency of SCA subcarriers shall at all times be within the range 20 to 75 kHz: *Provided, however,* That when the station is engaged in stereophonic broadcasting pursuant to § 73.297 or § 73.597, the instantaneous frequency of SCA subcarriers shall at all times be within the range 53 to 75 kHz.

(c) The arithmetic sum of the modulation of the main carrier by SCA subcarriers shall not exceed 30 percent: *Provided, however,* That when the station is engaged in stereophonic broadcasting pursuant to § 73.297 or § 73.597, the arithmetic sum of the modulation of the main carrier by the SCA subcarriers shall not exceed 10 percent.

(d) The total modulation of the main carrier, including SCA subcarriers, shall meet the requirements of § 73.268.

(e) Frequency modulation of the main carrier caused by the SCA subcarrier operation shall, in the frequency range 50 to 15,000 Hz, be at least 60 dB below 100 percent modulation: *Provided, however,* That when the station is engaged in stereophonic broadcasting pursuant to § 73.297 or § 73.597, frequency modulation of the main carrier by the SCA subcarrier operation shall, in the frequency range 50 to 53,000 Hz, be at least 60 dB below 100 percent modulation.

(f) The center frequency of each SCA subcarrier shall be kept at all times within 500 Hz of the authorized frequency.

[28 FR 13623, Dec. 14, 1963, as amended at 31 FR 7907, June 3, 1966; 39 FR 24371, July 2, 1974]

#### § 73.322 Stereophonic transmission standards.

(a) The modulating signal for the main channel shall consist of the sum of the left and right signals.

(b) A pilot subcarrier at 19,000 Hz plus or minus 2 Hz shall be transmitted that shall frequency modulate the main carrier between the limits of 8 and 10 percent.

(c) The stereophonic subcarrier shall be the second harmonic of the pilot subcarrier and shall cross the time axis with a positive slope simultaneously with each crossing of the time axis by the pilot subcarrier.

(d) Amplitude modulation of the stereophonic subcarrier shall be used.

(e) The stereophonic subcarrier shall be suppressed to a level less than one percent modulation of the main carrier.

(f) The stereophonic subcarrier shall be capable of accepting audio frequencies from 50 to 15,000 Hz.

(g) The modulating signal for the stereophonic subcarrier shall be equal to the difference of the left and right signals.

(h) The pre-emphasis characteristics of the stereophonic subchannel shall be identical with those of the main channel with respect to phase and amplitude at all frequencies.

(i) The sum of the side bands resulting from amplitude modulation of the stereophonic subcarrier shall not cause a peak deviation of the main carrier in excess of 45 percent of total modulation (excluding SCA subcarriers) when only a left (or right) signal exists; simultaneously in the main channel, the deviation when only a left (or right) signal exists shall not exceed 45 percent of total modulation (excluding SCA subcarriers).

(j) Total modulation of the main carrier including pilot subcarrier and SCA subcarriers shall meet the requirements of § 73.268 with maximum modulation of the main carrier by all SCA subcarriers limited to 10 percent.

(k) At the instant when only a positive left signal is applied, the main channel modulation shall cause an upward deviation of the main carrier frequency; and the stereophonic subcarrier and its sidebands signal shall cross the time axis simultaneously and in the same direction.

(l) The ratio of peak main channel deviation to peak stereophonic subchannel deviation when only a steady state left (or right) signal exists shall be within plus or minus 3.5 percent of unity for all levels of this signal and all frequencies from 50 to 15,000 Hz.

(m) The phase difference between the zero points of the main channel signal and the stereophonic subcarrier sidebands envelope, when only a steady state left (or right) signal exists, shall not exceed plus or minus 3 degrees for audio modulating frequencies from 50 to 15,000 Hz.

*Note:* If the stereophonic separation between left and right stereophonic channels is better than 29.7 dB at audio modulating frequencies between 50 and 15,000 Hz, it will be assumed that paragraphs (l) and (m) of this section have been complied with.

(n) Cross-talk into the main channel caused by a signal in the stereophonic subchannel shall be attenuated at least 40 dB below 90 percent modulation.

(o) Cross-talk into the stereophonic subchannel caused by a signal in the main channel shall be attenuated at least 49 dB below 90 percent modulation.

(p) For required transmitter performance, all of the requirements of § 73.254 shall apply with the exception that the maximum modulation to be employed is 90 percent (excluding pilot subcarrier) rather than 100 percent.

(q) For electrical performance standards of the transmitter and associated equipment, the requirements of § 73.317(a) (2), (3), (4), and (5) shall apply to the main channel and stereophonic subchannel alike, except that where 100 percent modulation is referred to, this figure shall include the pilot subcarrier.

#### § 73.332 Requirements for type acceptance of FM modulation monitors.

(a) Procedures for obtaining type acceptance of FM modulation monitors are contained in § 73.1668 and in Subpart J of Part 2 of the FCC rules.

(b) The specifications that a nonmultiplex modulation monitor shall meet before it will be approved by the Commission are as follows:

(1) A means for insuring that the transmitter input to the modulation monitor is proper.

(2) A modulation peak indicating device that can be set at any predetermined value from 50% to 120% modulation ( $\pm 75$  kHz deviation is defined

as 100% modulation) for either positive or negative deviation.

(3) A semi-peak indicator with a meter having the characteristics given below shall be used with a circuit such that peaks of modulation of duration between 40 and 90 milliseconds are indicated to 90 percent of full value and the discharge rate adjusted so that the pointer returns from full reading to 10 percent of zero within 500 to 800 milliseconds. A switch shall be provided so that this meter will read either positive or negative swings.

(i) The characteristics of the indicating meter are: (a) *Damping factor.* The damping factor shall be between 16 and 200. (b) *Scale.* The meter scale shall be similar in appearance to that of a standard VU meter. The scale length between 0 and 100 percent modulation markings should be at least 2.3 inches. In addition to other markings a small mark for 133 percent modulation and designated as such should be included for the purpose of testing transmitters with 100 kHz swing.

(4) The accuracy of reading of percentage of modulation shall be within  $\pm 5$  percent modulation percentage at any percentage of modulation up to 100 percent modulation.

(5) The frequency characteristic curve shall not depart from a straight line more than  $\pm \frac{1}{2}$  dB from 50 to 15,000 Hz. Distortion shall be kept to a minimum.

(6) The monitor shall not absorb appreciable power from the transmitter.

(7) Operation of the monitor shall have no deleterious effect on the operation of the transmitter.

(8) General design, construction, and operation shall be in accordance with good engineering practice.

(c) [Reserved]

(d) The specifications that a modulation monitor shall meet before it will be type approved for monitoring stereophonic operation are as follows:

(1) A means for measuring the modulation percentage of the carrier produced by the main channel signal. For this purpose the instrument shall comply with the provisions of paragraph (b) of this section except that no peak preset indicator need be provided, and the accuracy indication shall be  $\pm 5$  percent in modulation percentage for all frequencies from 50 to 15,000 Hz per second. The frequency characteristic, in addition to satisfying the modulation accuracy requirement, must be such that the attenuation at 19 kHz shall be at least 26 dB, and the attenuation at 23 kHz and above shall be at least 46 dB. These ratios are with respect to the minimum response in the frequency range 50 to 15,000 Hz.

(2) A means for measuring the modulation percentage of the carrier produced by the stereophonic subcarrier (38 kHz) and its sidebands. For this purpose the instrument shall comply with the provisions of paragraph (b) of this section except that no peak preset indicator need be provided and the accuracy of the indication shall be

within  $\pm 5$  percent in modulation percentage for frequencies 23 to 53 kHz. The frequency characteristic, in addition to satisfying the modulation accuracy requirement, must be such that the attenuation at 19 kHz and 57 kHz be at least 26 dB, and at least 46 dB at 15 kHz and below, and 59 kHz and above. All these ratios are with respect to the minimum response in the band from 23 to 53 kHz.

(3) A means for measuring the modulation percentage of the carrier by the pilot subcarrier (19 kHz). For this purpose the indicating meter shall have a scale with length of at least 2.3 inches. Markings shall be provided for 6 percent, 8 percent, 10 percent, and 12 percent modulation with the range between 6 percent and 12 percent occupying at least 50 percent of the scale length. The accuracy of reading at the 8 percent and 10 percent limits shall be  $\pm 1/2$  percent in modulation percentage.

(4) A means for measuring total modulation percentage of the carrier by the main channel, stereophonic subchannel, pilot subcarrier, and all SCA subcarriers simultaneously. For this purpose the instrument shall comply with the provisions of paragraph (b) of this section except that the frequency characteristic shall not have more than a one decibel difference for any frequencies from 50 Hz to 75 kHz. The accuracy of the modulation percentage reading must hold when the modulation consists of complete composite stereophonic signals (main channel, pilot subcarrier and stereophonic subchannel). Left and right signals used to produce this composite signal shall include sinusoidal tones from 50 to 15,000 Hz. The peak preset indicator must also respond correctly to tone bursts at repetition rates from one to ten bursts per second with the following composition of the bursts: (i) Ten consecutive cycles of a constant amplitude 10,000 Hz sinusoid; and (ii) five consecutive cycles of a constant amplitude 1,000 Hz sinusoid. In addition, each response of the peak preset indicator shall persist for a minimum of 2 and a maximum of 4 seconds and be independent of the direction of frequency deviation.

(5) A means for measuring individually the amplitudes of the left and the right stereophonic channels. For this purpose the instrument shall have, for all frequencies in the range 50 to 15,000 Hz:

(i) A frequency characteristic permitting a 1 dB maximum variation.

(ii) A harmonic distortion of 1 percent or less.

(iii) A capability of reading stereophonic channel separation of at least 35 dB with an accuracy of  $\pm 3$  dB.

(iv) An internal means of ensuring that the proper phase relationship exists between the incoming 19 kHz pilot carrier and regenerated stereophonic subcarrier in the monitor.

(6) A means for accurately indicating cross talk from the main channel and SCA operation into

the stereophonic subchannel, and from the stereophonic subchannel into the main channel. (With stereophonic operation, SCA operation shall be considered as from 59 to 75 kHz.) For this purpose the monitor must have:

(i) A provision for indicating a cross talk ratio of at least 70 dB.

(ii) A characteristic not exceeding 46 dB of internal cross talk for any single main channel signal or for any single stereophonic subchannel signal that modulates the main carrier 90 percent.

(iii) A characteristic not exceeding 66 dB of internal cross talk (with respect to 100 percent modulation) for any SCA operation from 59 to 75 kHz that modulates the main carrier 10 percent. The SCA cross talk shall be evaluated for the main channel frequency range from 50 to 15,000 Hz and the stereophonic subchannel range from 23,000 to 53,000 Hz.

(7) The requirements of paragraphs (d) (5) and (6) of this section contemplate the use of sinusoidal test signals.

(8) A means for accurately indicating a suppression of the stereophonic subcarrier of at least 46 dB with respect to 100 percent modulation of the carrier. The means must be valid for 90 percent subchannel modulation for signals from 5,000 to 15,000 Hz.

(9) When signals are brought out for external metering or monitoring, they shall have all the characteristics stipulated for internal metering purposes, and any loading by external circuitry shall have no effect on the monitor's indications.

(e) The stereophonic subchannel modulation display may be a part of the main channel modulation display. However, if switching of functions is utilized, the peak preset indicator of total modulation must be independent of this switching and afford a continuous display of total modulations.

(f) The specifications that a modulation monitor shall meet before it will be type approved for monitoring SCA operation are as follows:

(1) A means for measuring the modulation percentage of the carrier produced by the main channel signal. For this purpose the instrument shall comply with the provisions of paragraph (b) of this section except that no peak preset indicator need be provided, and the accuracy of indication shall be  $\pm 5$  percent in modulation percentage for all frequencies from 50 to 15,000 Hz. The frequency characteristic, in addition to satisfying the modulation accuracy requirement, must be such that the attenuation from 20 kHz to 75 kHz shall be at least 46 dB with respect to the minimum response in the frequency range 50 to 15,000 Hz.

(2) A means for measuring the modulation of the main carrier by each unmodulated subcarrier separated by a minimum of 5 kHz from an adjacent unmodulated subcarrier to an accuracy of one percent in modulation percentage. For SCA

subcarriers from 59 to 75 kHz, the monitor characteristic shall be such as to ignore any signal of 53 kHz and below, the amplitude of which is +40 dB with respect to the subcarrier being measured. For SCA subcarriers from 20 to 75 kHz (no stereophonic service), the monitor characteristic shall be such as to ignore a +40 decibel signal at 15 kHz or below.

NOTE: Compliance with this requirement will be assumed for monitors that can meet the following test conditions:

(i) For subcarriers from 59 to 75 kHz, one subcarrier is introduced at a level which modulates the main carrier to any percentage from 1 to 10 percent; a second subcarrier, not less than 5 kHz removed from the first, is added at a level such that the total modulation of the main carrier by the two subcarriers is 10 percent. The modulation of the main carrier by the first subcarrier shall be indicated to an accuracy of one percent in modulation percentage. If the monitor is intended for two or more subcarriers, each subcarrier shall be indicated to an accuracy of one percent.

(ii) A sinusoidal signal in the range of 50 Hz to 53 kHz and at a level sufficient to modulate the main carrier 90 percent is added to the two subcarriers. The indications obtained in paragraph (i) of this Note shall not change more than 0.5 percent in modulation percentage.

(iii) For subcarriers from 20 to 75 kHz, one subcarrier is introduced at a level which modulates the main carrier to any percentage from 3 to 30 percent; a second subcarrier, not less than 5 kHz removed from the first, is added at a level such that the total modulation of the main carrier by the two subcarriers is 30 percent. The modulation of the main carrier by the first subcarrier shall be indicated to an accuracy of one percent in modulation percentage. If the monitor is intended for two or more subcarriers, each subcarrier shall be indicated to an accuracy of one percent.

(iv) A sinusoidal signal in the range of 50 Hz to 15 kHz and at a level sufficient to modulate the main carrier 70 percent is added to the two subcarriers. The indications obtained in paragraph (iii) of this Note shall not change more than 0.5 percent in modulation percentage.

(3) A means for measuring total modulation percentage of carrier by the main channel and all SCA subcarriers simultaneously. For this purpose the instrument shall comply with the provisions of paragraph (b) of this section except that the frequency characteristic shall not have more than a one decibel difference for any frequencies from 50 Hz to 75 kHz. The accuracy of the modulation percentage reading must hold when the modulation consists of main channel and SCA subcarrier signals. The peak preset indicator must also respond correctly to tone bursts at repetition rates from one to ten bursts per second with the following composition of the bursts: (i) Ten consecutive cycles of a constant amplitude 10,000 Hz sinusoid; and (ii) five consecutive cycles of a constant amplitude 1,000 Hz sinusoid. In addition, each response of the peak preset indicator shall persist for a minimum of 2 and a maximum of 4 seconds and be independent of the direction of frequency deviation.

(4) A means for measuring the frequency deviation of each subcarrier in the presence of modulation in all channels (main, SCA, and stereophonic (if applicable)) to an accuracy of 1 kHz under the modulation conditions specified in the application for type acceptance.

(5) A means for measuring the cross talk of SCA operation (20 to 75 kHz) into the main chan-

nel (50 to 15,000 Hz) with an accuracy of 6 dB. The monitor's internal cross talk characteristic must be at least 66 dB (100 percent modulation) and the monitor must be capable of indicating at least 70 dB.

(6) When signals are brought out for external metering or monitoring, they shall have all the characteristics stipulated for internal metering purposes, and any loading by external circuitry shall have no effect on the monitor's indication.

(g) The SCA modulation display may be part of the main channel modulation display but the peak preset indicator of total modulation must be independent of any switching functions and afford a continuous display.

(Secs. 4, 6, 303, 48 Stat., as amended, 1066, 1068, 1082 (47 U.S.C. 154, 155, 303))

[28 FR 13623, Dec. 14, 1963, as amended at 31 FR 7907, June 3, 1966; 32 FR 4532, Mar. 25, 1967; 33 FR 2446, Feb. 1, 1968; 44 FR 36038, June 20, 1979; 44 FR 65764, Nov. 15, 1979; 45 FR 26064, Apr. 17, 1980]

grams for individualized remedial or advanced learning needs; and any use permitted for a commercial FM station under § 73.293(a)(1), subject to the prohibition against commercial operation and the limitation as to purpose contained in this section and in § 73.503, such limitation especially including those non-instructional services customarily provided by commercial firms. Uses permitted under this subparagraph will not be considered "commercial," when charges are made for the service rendered, under the circumstances and subject to the conditions set forth hereunder:

(i) A per-course, per-session, per-seminar, per-pupil or other appropriate fee is charged for formal or informal instructional material, presented by, with or for a bona fide educational institution. Payment of the fee shall be made to the noncommercial educational FM station or to the educational institution; such fee may include, in addition to the station expenses detailed in paragraph (a)(1)(iii) of this section, the usual tuition charged for similar material presented by other means.

(ii) A charge is made for a program or series of programs, informational or generally instructional in nature, intended to meet the special needs and interests of one or more of the groups the station is authorized to serve under its SCA. Payment of the charge shall be made to the noncommercial educational FM station.

(iii) Payments retained by the station shall total no more than the approximate cost of conducting the SCA operation (including purchase or lease of equipment, course material, personnel services, etc.) and the general overhead and operational costs attributable to such operation.

(iv) A noncommercial educational FM station offering program material subject to fee or other charge shall clearly indicate in any broadcast or printed solicitation to prospective enrollees whether the material falls into category paragraph (a)(1)(i) or (ii) of this section, so that informational and general educational materials are not represented as formal instructional or institutional credit programs.

(2) Transmission of signals which are directly related to the operation of noncommercial educational FM stations; for example, relaying of broadcast material to other stations, remote cueing and order circuits, and similar uses. (Use of multiplex subcarriers for transmission of control and data telemetry for remote control automatic transmission system (ATS) operations does not require an SCA.)

(b) An application for an SCA shall be submitted on FCC Form 318. An applicant for SCA shall specify the particular nature and purpose of the proposed use. If visual transmission of program material is contemplated (see § 73.310(c)), the application shall include certain technical information concerning the visual system, on which the Commission shall rely in issuing an SCA. If any

#### OTHER OPERATING REQUIREMENTS

##### § 73.593 Subsidiary Communications Authorizations.

(a) A noncommercial educational FM broadcast licensee or permittee may apply for a Subsidiary Communications Authorization (SCA) to provide limited types of subsidiary service on a multiplex basis. Any use of SCA by such licensee or permittee must be consistent with the limitation on the purpose and operation of noncommercial educational FM stations contained in § 73.503: *Provided*, That uses permitted under this paragraph will not be considered "commercial" as long as no consideration for such use (other than the furnishing of the material transmitted and/or payment of line charges) is received by the licensee, directly or indirectly, and no commercial announcements or references are contained in the material transmitted under the SCA. Permissible uses must fall within one or both of the following categories:

(1) Transmission of programs which are non-commercial and in furtherance of an educational purpose, and which are of a broadcast nature but of interest primarily to limited segments of the station's audience. Typical services may include: Programs for presentation in classrooms; programs designed for specific professional groups, such as doctors, lawyers, and engineers; programs intended to serve the special needs and interests of the aged, the handicapped, particular social and ethnic groups, and for those in a specific trade or sharing a common interest or hobby; pro-

significant change is subsequently made in the system, revised information shall be submitted. The technical information to be submitted is as follows:

(1) A full description of the visual transmission system.

(2) A block diagram of the system, as installed at the station, with all components, including filters, identified as to make and type. Response curves of all composite filters shall be furnished.

(3) The results of measurements which demonstrate that the subcarrier, when modulated by the visual signal, meets the requirements of § 73.319(e), and of such observations or measurements as may be necessary to show that signal components of appreciable strength are not produced outside of the band normally occupied by the FM station's emissions (see § 73.317(a)(12) and (13)). A description of the apparatus and techniques employed in these measurements and observations shall be furnished.

(4) Experimental operation of a noncommercial educational FM station to obtain the technical information necessary to support an application for an SCA for visual transmissions may be conducted under the provisions of § 73.1510.

(c) SCA operations may be conducted without restriction as to time so long as the main channel is programmed simultaneously.

(d) Prior permission to engage in any new or additional SCA activity other than the transmission of control and data telemetry for remote control ATS operation must be obtained from the FCC by filing an application on FCC form 318.

[28 FR 13651, Dec. 14, 1963, as amended at 38 FR 18375, July 10, 1973; 40 FR 11583, Mar. 12, 1975; 43 FR 53739, Nov. 17, 1978]

#### § 73.594 Nature of the SCA.

(a) The SCA is of a subsidiary or secondary nature and shall not exist apart from the noncommercial educational FM license or permit. No transfer or assignment of it shall be made separate from the FM license or permit, and failure to transfer the SCA with the FM license or permit renders the SCA void. Any assignment or transfer of an SCA shall, if desired, be requested as part of the main station's transfer or assignment application. The licensee or permittee must seek renewal of the SCA (on FCC Form 318) at the same time it applies for its renewal of noncommercial educational FM license; failure to renew the latter automatically terminates the SCA.

(b) The grant or renewal of a noncommercial educational FM license or permit will not be furthered or promoted by the proposed or past operation under an SCA; the licensee must establish that its broadcast operation is in the public interest wholly apart from the SCA activities. (Violation of rules applicable to the SCA operation would, of course reflect on the licensee's qualifications to hold its broadcast license or permit.)

[28 FR 13651, Dec. 14, 1963, as amended at 34 FR 17108, Oct. 22, 1969]

#### § 73.595 Use of multiplex subcarriers.

(a) Use of multiplex subcarriers by an FM station must conform to the purposes authorized by the FCC under a Subsidiary Communications Authorization (SCA) except for the transmission control and telemetry data for remote control or automatic transmission system operation which may be conducted without an SCA.

(b) Superaudible and subaudible tones and pulses may, when authorized by the Commission, be employed by SCA holders to activate and deactivate subscribers' multiplex receivers. The use of these or any other control techniques to delete main channel material is specifically forbidden.

(c) In all arrangements entered into with outside parties affecting SCA operation, the licensee or permittee must retain control over all material transmitted over the station's facilities, with the right to reject any material which it deems inappropriate or undesirable. Subchannel leasing arrangements shall be reduced to writing, kept at the station, and made available for inspection upon request from the Commission.

(d) The station identification, delayed recording, and donor identification announcements required by §§ 73.1201, 73.1208, and 73.503, and the program log requirements for such announcements in § 73.1810 are not applicable to material transmitted under an SCA.

(e) To the extent that SCA circuits are used for the transmission of program material, each licensee or permittee shall maintain a daily program log in which a general description of the material transmitted shall be entered once during each broadcast day: *Provided, however,* That in the event of a change in the general description of the material transmitted, an entry shall be made in the SCA program log indicating the time of each such change and a description thereof.

(f) A daily SCA operating log must be maintained for the multiplex subcarrier transmissions, except those for control and data telemetry for remote control or ATS operation. The following log entries are to be made, excluding subcarrier interruptions of 15 minutes or less:

- (1) Time subcarrier generator is turned on.
- (2) Time modulation is applied to subcarrier.
- (3) Time modulation is removed from subcarrier.
- (4) Time subcarrier generator is turned off.

(g) The frequency of each SCA subcarrier shall be measured as often as necessary to ensure that it is kept at all times within 500 Hz of the authorized frequency. In any event, however, SCA subcarrier frequencies shall be measured in accordance with the following schedule:

- (1) For stations authorized to operate with transmitter power in excess of 10 watts, each SCA subcarrier frequency shall be measured at least

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once each calendar month with not more than 40 days expiring between successive measurements.

(2) For stations authorized to operate with transmitter power of 10 watts or less, each SCA subcarrier frequency will be measured:

(i) When the SCA subcarrier generator is initially installed;

(ii) At any time the frequency determining elements of the SCA subcarrier generator are changed;

(iii) At any time the licensee may have reason to believe the SCA subcarrier frequency is not within the frequency tolerance prescribed by the Commission's rules.

(h) Program and operating logs for SCA operation may be kept on special columns provided on the station's regular program and operating log sheets.

(i) Technical standards governing SCA operation (§ 73.319) shall be observed by all FM broadcasting stations engaging in such operation.

131 FR 3844, Mar. 3, 1966, as amended at 31 FR 7909, June 3, 1966; 39 FR 38652, Nov. 1, 1974; 43 FR 53740, Nov. 17, 1978; 45 FR 26065, Apr. 17, 1980

### § 73.597 Stereophonic broadcasting.

(a) A noncommercial educational FM broadcast station may, without specific authority from the FCC, transmit stereophonic programs upon installation of type accepted stereophonic transmitting equipment and, for stations authorized to operate with a transmitter output power over 10 watts, a type approved stereophonic modulation monitor. Prior to commencement of stereophonic broadcasts, equipment performance measurements must be completed.

(b) Each licensee or permittee engaging in stereophonic broadcasting shall 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. In any event, however, the stereo-pilot subcarrier frequency shall be measured in accordance with the following schedule:

(1) For stations authorized to operate with transmitter power in excess of 10 watts, the pilot subcarrier frequency shall be measured at least once each calendar month with not more than 40 days expiring between successive measurements.

(2) For stations authorized to operate with transmitter power of 10 watts or less, the pilot subcarrier frequency shall be measured:

(i) When the stereo-pilot subcarrier generator is initially installed;

(ii) At any time the frequency determining elements of the stereo-pilot subcarrier generator are changed;

(iii) At any time the licensee may have reason to believe the stereo-pilot subcarrier frequency is not within the frequency tolerance prescribed by the Commission's rules.

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