2nd edition, November 1989, on these parameters.

[37 FR 3278, Feb. 12, 1972, as amended at 37 FR 13867, July 14, 1972; 41 FR 10067, Mar. 9, 1976; 42 FR 21782, Apr. 29, 1977; 49 FR 45441, Nov. 16, 1984; 57 FR 11004, Apr. 1, 1992; 57 FR 61011, Dec. 23, 1992; 58 FR 44952, Aug. 25, 1993]

§ 76.610 Operation in the frequency bands 108–137 MHz and 225–400 MHz—scope of application.

The provisions of §§ 76.605(d), 76.611, 76.612, 76.613, 76.614, 76.616, 76.617, 76.1803 and 76.1804 are applicable to all MVPDs (cable and non-cable) transmitting analog carriers or other signal components carried at an average power level equal to or greater than 100 microwatts across a 25 kHz bandwidth in any 160 microsecond period or transmitting digital carriers or other signal components at an average power level of 75.85 microwatts across a 25 kHz bandwidth in any 160 microsecond period at any point in the cable distribution system in the frequency bands 108–137 and 225–400 MHz for any purpose. Exception: Non-cable MVPDs serving less than 1000 subscribers and less than 1,000

units do not have to comply with § 76.1803.

[83 FR 7629, Feb. 22, 2018]

§ 76.611 Cable television basic signal leakage performance criteria.

(a) No cable television system shall commence or provide service in the frequency bands 108–137 and 225–400 MHz unless such systems is in compliance with one of the following cable television basic signal leakage performance criteria:

(1) Prior to carriage of signals in the aeronautical radio bands and at least once each calendar year, with no more than 12 months between successive tests thereafter, based on a sampling of at least 75% of the cable strand, and including any portion of the cable system which are known to have or can reasonably be expected to have less leakage integrity than the average of the system, the cable operator demonstrates compliance with a cumulative signal leakage index by showing that 10 log I_∞ is equal to or less than 64 using the following formula:

$$ I_\infty = \frac{1}{\theta} \sum_{i=1}^{n} E_i^2 , $$

θ is the fraction of the system cable length actually examined for leakage sources and is equal to the strand kilometers (strand miles) of plant tested divided by the total strand kilometers (strand miles) in the plant;

E_i is the electric field strength in microvolts per meter (µV/m) measured 3 meters from the leak i; and

n is the number of leaks found of field strength equal to or greater than 50 µV/m measured pursuant to § 76.609(h).

The sum is carried over all leaks i detected in the cable examined; or

(2) Prior to carriage of signals in the aeronautical radio bands and at least once each calendar year, with no more than 12 months between successive tests thereafter, the cable operator demonstrates by measurement in the airspace that at no point does the field

strength generated by the cable system exceed 10 microvolts per meter (µV/m) RMS at an altitude of 450 meters above the average terrain of the cable system. The measurement system (including the receiving antenna) shall be calibrated against a known field of 10 µV/m RMS produced by a well characterized antenna consisting of orthogonal resonant dipoles, both parallel to and one quarter wavelength above the ground plane of a diameter of two meters or more at ground level. The dipoles shall have centers collocated and be excited 90 degrees apart. The half-power bandwidth of the detector shall be 25 kHz. If an aeronautical receiver is used for this purpose it shall meet the standards of the Radio Technical Commission for Aeronautics (RCTA) for aeronautical communications receivers. The aircraft antenna

shall be horizontally polarized. Calibration shall be made in the community unit or, if more than one, in any of the community units of the physical system within a reasonable time period to performing the measurements. If data is recorded digitally the 90th percentile level of points recorded over the cable system shall not exceed 10 µV/m RMS as indicated above; if analog recordings is used the peak values of the curves, when smoothed according to good engineering practices, shall not exceed 10 µV/m RMS.

(b) In paragraphs (a)(1) and (2) of this section the unmodulated test signal used for analog leakage measurements on the cable plant shall—

(1) Be within the VHF aeronautical band 108–137 MHz or any other frequency for which the results can be correlated to the VHF aeronautical band; and

(2) Have an average power level equal to the greater of:

(i) The peak envelope power level of the strongest NTSC or similar analog cable television signal on the system, or

(ii) 1.2 dB greater than the average power level of the strongest QAM or similar digital cable television signal on the system.

(c) In paragraphs (a)(1) and (2) of this section, if a modulated test signal is used for analog leakage measurements, the test signal and detector technique must, when considered together, yield the same result as though an unmodulated test signal were used in conjunction with a detection technique which would yield the RMS value of said unmodulated carrier.

(d) If a sampling of at least 75% of the cable strand (and including any portions of the cable system which are known to have or can reasonably be expected to have less leakage integrity than the average of the system) as described in paragraph (a)(1) of this section cannot be obtained by the cable operator or is otherwise not reasonably feasible, the cable operator shall perform the airspace measurements described in paragraph (a)(2) of this section.

(e) Prior to providing service to any subscriber on a new section of cable plant, the operator shall show compliance with either:

(1) The basic signal leakage criteria in accordance with paragraphs (a)(1) or (2) of this section for the entire plant in operation or

(2) a showing shall be made indicating that no individual leak in the new section of the plant exceeds 20 µV/m at 3 meters in accordance with §76.609 for analog signals or 17.4 µV/m at 3 meters for digital signals.

(f) Notwithstanding paragraph (a) of this section, a cable operator shall be permitted to operate on any frequency which is offset pursuant to §76.612 in the frequency band 108–137 MHz for the purpose of demonstrating compliance with the cable television basic signal leakage performance criteria.

[83 FR 7629, Feb. 22, 2018]

§ 76.612 Cable television frequency separation standards.

All cable television systems which operate analog NTSC or similar channels in the frequency bands 108–137 MHZ and 225–400 MHz shall comply with the following frequency separation standards for each NTSC or similar channel:

(a) In the aeronautical radiocommunication bands 118–137, 225–328.6 and 335.4–400 MHz, the frequency of all carrier signals or signal components carried at an average power level equal to or greater than 10^{-4} watts in a 25 kHz bandwidth in any 160 microsecond period must operate at frequencies offset from certain frequencies which may be used by aeronautical radio services operated by Commission licensees or by the United States Government or its Agencies. The aeronautical frequencies from which offsets must be maintained are those frequencies which are within one of the aeronautical bands defined in this subparagraph, and when expressed in MHz and divided by 0.025 yield an integer. The offset must meet one of the following two criteria:

(1) All such cable carriers or signal components shall be offset by 12.5 kHz with a frequency tolerance of ±5 kHz; or

(2) The fundamental frequency from which the visual carrier frequencies are derived by multiplication by an integer