

§ 18.303

47 CFR Ch. I (10-1-00 Edition)

§ 18.303 Prohibited frequency bands.

Operation of ISM equipment within the following safety, search and rescue frequency bands is prohibited: 490-510 kHz, 2170-2194 kHz, 8354-8374 kHz, 121.4-121.6 MHz, 156.7-156.9 MHz, and 242.8-243.2 MHz.

§ 18.305 Field strength limits.

(a) ISM equipment operating on a frequency specified in § 18.301 is permitted unlimited radiated energy in the band specified for that frequency.

(b) The field strength levels of emissions which lie outside the bands specified in § 18.301, unless otherwise indicated, shall not exceed the following:

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (uV/m)	Distance (meters)
Any type unless otherwise specified (miscellaneous).	Any ISM frequency	Below 500	25	300
		500 or more	25×SQRT(power/500)	1300
Industrial heaters and RF stabilized arc welders.	Any non-ISM frequency ..	Below 500	15	300
		500 or more	15×SQRT(power/500)	1300
Medical diathermy	On or below 5,725 MHz ..	Any	10	1,600
	Above 5,725 MHz	Any	(²)	(²)
Ultrasonic	Any ISM frequency	Any	25	300
	Any non-ISM frequency ..	Any	15	300
Induction cooking ranges	Below 490 kHz	Below 500	2,400/F(kHz)	300
		500 or more	2,400/F(kHz)× SQRT(power/500).	300
	490 to 1,600 kHz	Any	24,000/F(kHz)	30
	Above 1,600 kHz	Any	15	30
Induction cooking ranges	Below 90 kHz	Any	1,500	430
	On or above 90 kHz	Any	300	430

¹ Field strength may not exceed 10 uV/m at 1600 meters. Consumer equipment operating below 1000 MHz is not permitted the increase in field strength otherwise permitted here for power over 500 watts.
² Reduced to the greatest extent possible.
³ Field strength may not exceed 10 uV/m at 1600 meters. Consumer equipment is not permitted the increase in field strength otherwise permitted here for over 500 watts.
⁴ Induction cooking ranges manufactured prior to February 1, 1980, shall be subject to the field strength limits for miscellaneous ISM equipment.

(c) The field strength limits for RF lighting devices shall be the following:

Frequency (MHz)	Field strength limit at 30 meters (uV/m)
Non-consumer equipment:	
30-88	30
88-216	50
216-1000	70
Consumer equipment:	
30-88	10
88-216	15
216-1000	20

NOTES

- The tighter limit shall apply at the boundary between two frequency ranges.
- Testing for compliance with these limits may be made at closer distances, provided a sufficient number of measurements are taken to plot the radiation pattern, to determine the major lobes of radiation, and to determine the expected field strength level at 30, 300, or 1600 meters. Alternatively, if measurements are made at only one closer fixed distance, then the permissible field strength

limits shall be adjusted using 1/d as an attenuation factor.

[50 FR 36070, Sept. 5, 1985, as amended at 51 FR 17970, May 16, 1986; 52 FR 43197, Nov. 10, 1987]

§ 18.307 Conduction limits.

For the following equipment, which is designed to be connected to a low voltage public utility power line, the RF voltage conducted back into the power lines measured with a line impedance stabilization network (LISN) shall be limited to:

(a) Ultrasonic equipment:

Frequency (MHz)	Maximum RF line voltage measured with a 5 uH/50 ohm LISN (uV)
0.010-0.49	1000
0.49-30	200

(b) Induction cooking ranges manufactured after February 1, 1980:

Frequency (MHz)	Maximum RF line voltage measured with a 5uH/50 ohm LISN (mV)
0.010-0.1	10-1 (linear interpolation)
0.1-0.5	1

Frequency (MHz)	Maximum RF line voltage measured with a 5µH/50 ohm LISN (mV)
0.5-30	0.25

(c) RF lighting devices:

Frequency (MHz)	Maximum RF line voltage measured with a 50 µH/50 ohm LISN (µV)
Non-consumer equipment:	
0.45 to 1.6	1,000
1.6 to 30	3,000
Consumer equipment:	
0.45 to 2.51	250
2.51 to 3.0	3,000
3.0 to 30	250

NOTES

1. These conduction limits shall apply outside the bands specified in §18.301.
 2. For ultrasonic equipment, compliance with these conduction limits shall preclude the need to show compliance with the field strength limits below 30 MHz unless requested by the Commission.
 3. The tighter limits shall apply at the boundary between two frequency ranges.
- [50 FR 36067, Sept. 5, 1985, as amended at 52 FR 43198, Nov. 10, 1987; 64 FR 37419, July 12, 1999]

§ 18.309 Frequency range of measurements.

(a) For field strength measurements:

Frequency band in which device operates (MHz)	Range of frequency measurements	
	Lowest frequency	Highest frequency
Below 1.705	Lowest frequency generated in the device, but not lower than 9 kHz.	30 MHz.
1.705 to 30	Lowest frequency generated in the device, but not lower than 9 kHz.	400 MHz.
30 to 500	Lowest frequency generated in the device or 25 MHz, whichever is lower.	Tenth harmonic or 1,000 MHz, whichever is higher.
500 to 1,000	Lowest frequency generated in the device or 100 MHz, whichever is lower.	Tenth harmonic.
Above 1,000do	Tenth harmonic or highest detectable emission.

(b) For conducted powerline measurements, the frequency range over which the limits are specified will be scanned.

[50 FR 36070, Sept. 5, 1985, as amended at 51 FR 17971, May 16 1986]

§ 18.311 Methods of measurements.

The measurement techniques which will be used by the FCC to determine compliance with the technical requirements of this part are set out in FCC Measurement Procedure MP-5, "Methods of Measurements of Radio Noise Emissions from ISM equipment". Although the procedures in MP-5 are not mandated, manufacturers are encouraged to follow the same techniques which will be used by the FCC.

- 19.735-102 Cross-reference to ethics and other conduct related regulations.
- 19.735-103 Definitions.
- 19.735-104 Delegations.
- 19.735-105 Availability of ethics and other conduct related regulations and statutes.
- 19.735-106 Interpretation and advisory service.
- 19.735-107 Disciplinary and other remedial action.

Subpart B—Employee Responsibilities and Conduct

- 19.735-201 Outside employment and other activity prohibited by the Communications Act.
- 19.735-202 Financial interests prohibited by the Communications Act.
- 19.735-203 Nonpublic information.

AUTHORITY: 5 U.S.C. 7301; 47 U.S.C. 154 (b), (i), (j), and 303(r).

SOURCE: 61 FR 56112, Oct. 31, 1996, unless otherwise noted.

PART 19—EMPLOYEE RESPONSIBILITIES AND CONDUCT

Subpart A—General Provisions

Sec.
19.735-101 Purpose.