

**§ 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 .....	( <sup>2</sup> ) .....	( <sup>2</sup> )
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

<sup>1</sup> 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.  
<sup>2</sup> Reduced to the greatest extent possible.  
<sup>3</sup> 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.  
<sup>4</sup> 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