

## RF exposure evaluation

### § 2.1093 Radiofrequency radiation exposure evaluation: Portable Devices.

According to § 15.247(i) and § 1.1307b(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the commission’s guidance.

The 1-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- When the minimum test separation distance is < 5 mm, a distance of 5 mm according is applied to determine SAR test exclusion.
- The result is rounded to one decimal place for comparison

**For BLE:**

Channel	Frequency (GHz)	Tune up Power (dBm)	Max. Tune up Power (dBm)	Max. Tune up Power (mW)
CH 00	2.402	-14±1	-13	0.05
CH 19	2.440	-13±1	-12	0.06
CH 39	2.480	-12.5±1	-11.5	0.07

Channel	Frequency (GHz)	Power (dBm)	Max. Power (mW)	Test distance (mm)	Result	exclusion thresholds for 1-g SAR
CH 39	2.480	-11.59	0.07	5	0.02	3.0

**For WIFI:**

Channel	Frequency (GHz)	Tune up Power (dBm)	Max. Tune up Power (dBm)	Max. Tune up Power (mW)
CH 01	2.412	8.8±1	9.8	9.55
CH 06	2.437	8.8±1	9.8	9.55
CH 11	2.462	8.8±1	9.8	9.55
CH 03	2.422	8.8±1	9.8	9.55
CH 06	2.437	8.8±1	9.8	9.55
CH 09	2.452	8.8±1	9.8	9.55

Channel	Frequency (GHz)	Power (dBm)	Max. Power (mW)	Test distance (mm)	Result	exclusion thresholds for 1-g SAR
CH 06	2.437	9.79	9.53	5	2.98	3.0