



## 12. Radio Frequency Exposure

### 12.1 Applicable Standards

<input type="checkbox"/> §1.1307(b)(3)(i)(A)	The available maximum time-averaged power is no more than 1 mW, regardless of separation distance.																																										
<input type="checkbox"/> §1.1307(b)(3)(i)(c)	<p>ERP is below a threshold calculated based on the distance , R between the person and the antenna / radiating structure, where <math>R &gt; \lambda / 2 \pi</math>.</p> <p style="text-align: center;">TABLE B.1—THRESHOLDS FOR SINGLE RF SOURCES SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">RF Source Frequency</th> <th colspan="2"></th> <th colspan="2">Minimum Distance</th> <th>Threshold ERP</th> </tr> <tr> <th><math>f_L</math> MHz</th> <th><math>f_H</math> MHz</th> <th><math>\lambda_L / 2\pi</math></th> <th><math>\lambda_H / 2\pi</math></th> <th></th> <th>W</th> </tr> </thead> <tbody> <tr> <td>0.3</td> <td>—</td> <td>1.34</td> <td>159 m</td> <td>—</td> <td>35.6 m 1,920 <math>R^2</math></td> </tr> <tr> <td>1.34</td> <td>—</td> <td>30</td> <td>35.6 m</td> <td>—</td> <td>1.6 m 3,450 <math>R^2/f^2</math></td> </tr> <tr> <td>30</td> <td>—</td> <td>300</td> <td>1.6 m</td> <td>—</td> <td>159 mm 3.83 <math>R^2</math></td> </tr> <tr> <td>300</td> <td>—</td> <td>1,500</td> <td>159 mm</td> <td>—</td> <td>31.8 mm 0.0128 <math>R^2/f</math></td> </tr> <tr> <td>1,500</td> <td>—</td> <td>100,000</td> <td>31.8 mm</td> <td>—</td> <td>0.5 mm 19.2 <math>R^2</math></td> </tr> </tbody> </table> <p style="text-align: center;">Subscripts L and H are low and high; <math>\lambda</math> is wavelength. From § 1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.</p>	RF Source Frequency			Minimum Distance		Threshold ERP	$f_L$ MHz	$f_H$ MHz	$\lambda_L / 2\pi$	$\lambda_H / 2\pi$		W	0.3	—	1.34	159 m	—	35.6 m 1,920 $R^2$	1.34	—	30	35.6 m	—	1.6 m 3,450 $R^2/f^2$	30	—	300	1.6 m	—	159 mm 3.83 $R^2$	300	—	1,500	159 mm	—	31.8 mm 0.0128 $R^2/f$	1,500	—	100,000	31.8 mm	—	0.5 mm 19.2 $R^2$
RF Source Frequency			Minimum Distance		Threshold ERP																																						
$f_L$ MHz	$f_H$ MHz	$\lambda_L / 2\pi$	$\lambda_H / 2\pi$		W																																						
0.3	—	1.34	159 m	—	35.6 m 1,920 $R^2$																																						
1.34	—	30	35.6 m	—	1.6 m 3,450 $R^2/f^2$																																						
30	—	300	1.6 m	—	159 mm 3.83 $R^2$																																						
300	—	1,500	159 mm	—	31.8 mm 0.0128 $R^2/f$																																						
1,500	—	100,000	31.8 mm	—	0.5 mm 19.2 $R^2$																																						
<input checked="" type="checkbox"/> § 1.1307(b)(3)(i)(B).	<p>Device operates between 300 MHz and 6 GHz and the maximum time-averaged power or effective radiated power (ERP), whichever is greater, <math>\leq P_{th}</math></p> $P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$ <p>Where</p> $x = -\log_{10} \left( \frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$ <p>and</p> $ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$ <p><math>d</math> = the separation distance (cm);</p>																																										



## 12.2 EUT Specification

Frequency band (Operating)	<input type="checkbox"/> WLAN: 2412MHz ~ 2462MHz <input type="checkbox"/> WLAN: 5150MHz ~ 5250MHz <input type="checkbox"/> WLAN: 5250MHz ~ 5350MHz <input type="checkbox"/> WLAN: 5470MHz ~ 5725MHz <input type="checkbox"/> WLAN: 5725MHz ~ 5850MHz <input checked="" type="checkbox"/> Bluetooth: 2402MHz ~ 2480MHz
Device category	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation)
Antenna diversity	<input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <ul style="list-style-type: none"> <li><input type="checkbox"/> Tx diversity</li> <li><input type="checkbox"/> Rx diversity</li> <li><input type="checkbox"/> Tx/Rx diversity</li> </ul>
Evaluation applied	<input type="checkbox"/> Blanket 1 mW Blanket Exemption <input checked="" type="checkbox"/> MPE-based Exemption <input type="checkbox"/> SAR-based Exemption
<b>Remark:</b>	
The maximum conducted output power is <u>0.95dBm</u> (1.245mW) at <u>2402MHz</u> (with <u>-5.78dBi antenna gain</u> .)	

## 12.3 Result

Channel Frequency (MHz)	Max. Conducted output power (dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Max.Tune up e.r.p. Power (dBm)	Max. Tune up e.r.p power (mW)	Limit (mW)
2402-2480	0.95	1.45	-5.78	-6.48	0.22	3060

No non-compliance noted.

-----THE END OF REPORT-----