



## 12. Radio Frequency Exposure

### 12.1 Applicable Standards

<div><input type="checkbox"/></div> <div>§1.1307(b)(3)(i)(A)</div>	The available maximum time-averaged power is no more than 1 mW, regardless of separation distance.																																																	
<div><input checked="" type="checkbox"/></div> <div>§1.1307(b)(3)(i)(c)</div>	<div>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>.</div> <div><div>TABLE B.1—THRESHOLDS FOR SINGLE RF SOURCES SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION</div><table><tr><th colspan="3">RF Source Frequency</th><th colspan="3">Minimum Distance</th><th>Threshold ERP</th></tr><tr><th><math>f_L</math> MHz</th><th></th><th><math>f_H</math> MHz</th><th><math>\lambda_L / 2\pi</math></th><th></th><th><math>\lambda_H / 2\pi</math></th><th>W</th></tr><tr><td>0.3</td><td>–</td><td>1.34</td><td>159 m</td><td>–</td><td>35.6 m</td><td><math>1,920 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</td><td><math>3,450 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</td><td><math>3.83 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</td><td><math>0.0128 R^2f</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</td><td><math>19.2R^2</math></td></tr></table><div>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.</div></div>	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	$0.0128 R^2f$	1,500	–	100,000	31.8 mm	–	0.5 mm	$19.2R^2$
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	$0.0128 R^2f$																																												
1,500	–	100,000	31.8 mm	–	0.5 mm	$19.2R^2$																																												
<div><input type="checkbox"/></div> <div>§ 1.1307(b)(3)(i)(B).</div>	<div>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></div> <div><math display="block">P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x &amp; d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} &amp; 20 \text{ cm} &lt; d \leq 40 \text{ cm} \end{cases}</math></div> <div>Where</div> <div><math display="block">x = -\log_{10} \left( \frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}</math></div> <div>and</div> <div><math display="block">ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f &amp; 0.3 \text{ GHz} \leq f &lt; 1.5 \text{ GHz} \\ 3060 &amp; 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}</math></div> <div><math>d</math> = the separation distance (cm);</div>																																																	



## 12.2 EUT Specification

Frequency band (Operating)	2402MHz-2480MHz
Device category	<input checked="" type="checkbox"/> Portable (<20cm separation) <input type="checkbox"/> Mobile (>20cm separation)
Antenna diversity	<input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input checked="" type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity
Evaluation applied	<input type="checkbox"/> Blanket 1 mW Blanket Exemption <input type="checkbox"/> MPE-based Exemption <input checked="" type="checkbox"/> SAR-based Exemption
<b>Remark:</b> The maximum conducted output power is <u>-0.09dBm (0.979mW)</u> at <u>2402MHz</u> (with <u>1.72dBi</u> antenna gain.)	

**12.3 Result**

Channel Frequency (MHz)	Max. Conducted output power (dBm)	Max. Tune up power (dBm)	Max. Tune up power (mW)	Antenna Gain(dBi)	Max.Tune up e.i.r.p. Power (dBm)	Max.Tune up e.r.p. Power (dBm)	Max.Tune up e.r.p. Power (mW)	Distance (mm)	SAR test exclusion thresholds (mW)
2402-2480	-0.09	0.41	1.10	1.72	2.13	-0.02	1.00	5	2.72

No non-compliance noted.

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