



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)	ERP is below a threshold calculated based on the distance , R between the person and t antenna / radiating structure, where $R > \lambda / 2 \pi$. <p style="text-align: center;">TABLE B.1—THRESHOLDS FOR SINGLE RF SOURCES SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">RF Source Frequency</th> <th colspan="2">Minimum Distance</th> <th>Threshold ERP</th> </tr> <tr> <th>f_L MHz</th> <th>f_H MHz</th> <th>$\lambda_L / 2\pi$</th> <th>$\lambda_H / 2\pi$</th> <th>W</th> </tr> </thead> <tbody> <tr> <td>0.3</td> <td>1.34</td> <td>159 m</td> <td>35.6 m</td> <td>$1,920 R^2$</td> </tr> <tr> <td>1.34</td> <td>30</td> <td>35.6 m</td> <td>1.6 m</td> <td>$3,450 R^2/f^2$</td> </tr> <tr> <td>30</td> <td>300</td> <td>1.6 m</td> <td>159 mm</td> <td>$3.83 R^2$</td> </tr> <tr> <td>300</td> <td>1,500</td> <td>159 mm</td> <td>31.8 mm</td> <td>$0.0128 R^2f$</td> </tr> <tr> <td>1,500</td> <td>100,000</td> <td>31.8 mm</td> <td>0.5 mm</td> <td>$19.2R^2$</td> </tr> </tbody> </table> <p>Subscripts L and H are low and high; λ 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	$0.0128 R^2f$	1,500	100,000	31.8 mm	0.5 mm	$19.2R^2$
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<input checked="" type="checkbox"/> § 1.1307(b)(3)(i)(B).	Device operates between 300 MHz and 6 GHz and the maximum time-averaged power or effective radiated power (ERP), whichever is greater, $\leq P_{th}$ $P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$ <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>$d = \text{the separation distance (cm);}$</p>																																			

**12.2.EUT Specification**

Frequency band (Operating)	<input type="checkbox"/> WLAN: 2412MHz ~ 2462MHz <input checked="" type="checkbox"/> WLAN: 5150MHz ~ 5250MHz <input checked="" type="checkbox"/> WLAN: 5250MHz ~ 5350MHz <input checked="" type="checkbox"/> WLAN: 5470MHz ~ 5725MHz <input checked="" type="checkbox"/> WLAN: 5725MHz ~ 5850MHz <input type="checkbox"/> Bluetooth: 2402MHz ~ 2480MHz
Device category	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation)
Antenna diversity	<input type="checkbox"/> Single antenna <input checked="" type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input checked="" type="checkbox"/> Tx/Rx diversity
Evaluation applied	<input type="checkbox"/> Blanket 1 mW Blanket Exemption <input checked="" type="checkbox"/> MPE-based Exemption <input type="checkbox"/> SAR-based Exemption
Remark: <i>The maximum conducted output power is <u>20.82dBm (120.773mW)</u> at <u>5320MHz</u> (with <u>5.00 dBi antenna gain.</u>) For 24010270-TRFCC06</i>	

12.3.Test Results

For 24010270-TRFCC06

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)
5180-5240	20.40	20.90	5	23.75	236.96	3060
5260-5320	20.82	21.32	5	24.17	261.20	3060
5500-5720	20.64	21.14	5	23.99	250.82	3060
5745-5825	20.16	20.66	5	23.51	224.52	3060

No non-compliance noted.



Maximum Permissible Exposure (Co-location)

BT+5G

Modulation Type	Channel Frequency (MHz)	Max. Conducted output power (dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Distance (cm)	Max. Tune up e.r.p power (mW)	Limit (mW)	MPE Ratio
8DPSK	2402-2480	8.68	9.18	3	20	10.069	3060.00	0.003
11a	5260-5320	20.82	21.32	5	20	261.199	3060.00	0.085
Co-location Total								0.088
Σ MPE ratios Limit								1.000

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