



### 14. Radio Frequency Exposure

#### 14.1 Applicable Standards

| <input type="checkbox"/><br>§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"/><br>§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<br/>SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <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> </thead> <tbody> <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> </tbody> </table> <p>Subscripts L and H are low and high; <math>\lambda</math> is wavelength.<br/>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 | $19.2R^2$ |
| 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             | $19.2R^2$       |  |               |           |  |           |                    |  |                    |   |     |   |      |       |   |        |             |      |   |    |        |   |       |                 |    |   |     |       |   |        |            |     |   |       |        |   |         |               |       |   |         |         |   |        |           |
| <input checked="" type="checkbox"/><br>§ 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                    |   |                    |                 |  |               |           |  |           |                    |  |                    |   |     |   |      |       |   |        |             |      |   |    |        |   |       |                 |    |   |     |       |   |        |            |     |   |       |        |   |         |               |       |   |         |         |   |        |           |



14.1 EUT Specification

|                                                                                                                       |                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Frequency band (Operating)</b>                                                                                     | <input type="checkbox"/> WLAN: 2412MHz ~ 2462MHz<br><input type="checkbox"/> WLAN: 5150MHz ~ 5250MHz<br><input type="checkbox"/> WLAN: 5250MHz ~ 5350MHz<br><input type="checkbox"/> WLAN: 5470MHz ~ 5725MHz<br><input type="checkbox"/> WLAN: 5725MHz ~ 5850MHz<br><input checked="" type="checkbox"/> Bluetooth: 2402MHz ~ 2480MHz |
| <b>Device category</b>                                                                                                | <input checked="" type="checkbox"/> Portable (<20cm separation)<br><input type="checkbox"/> Mobile (>20cm separation)                                                                                                                                                                                                                |
| <b>Antenna diversity</b>                                                                                              | <input checked="" type="checkbox"/> Single antenna<br><input type="checkbox"/> Multiple antennas<br><input type="checkbox"/> Tx diversity<br><input type="checkbox"/> Rx diversity<br><input type="checkbox"/> Tx/Rx diversity                                                                                                       |
| <b>Evaluation applied</b>                                                                                             | <input type="checkbox"/> Blanket 1 mW Blanket Exemption<br><input type="checkbox"/> MPE-based Exemption<br><input checked="" type="checkbox"/> SAR-based Exemption                                                                                                                                                                   |
| <b>Remark:</b>                                                                                                        |                                                                                                                                                                                                                                                                                                                                      |
| The maximum conducted output power is <u>1.39dBm (1.377mW)</u> at <u>2480MHz</u> (with <u>0.00dBi antenna gain.</u> ) |                                                                                                                                                                                                                                                                                                                                      |

14.2 Result

| Modulation Mode | 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) |
|-----------------|-------------------------|-----------------------------------|--------------------------|-------------------------|-------------------|-----------------------------------|---------------------------------|--------------------------------|---------------|------------------------------------|
| GFSK            | 2402-2480               | 1.39                              | 1.89                     | 1.55                    | 0.00              | 1.89                              | -0.26                           | 0.94                           | 5             | 3                                  |

No non-compliance noted.

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