12. Radio Frequency Exposure

12.1 Applicable Standards

☐ §1.1307(b)(3)(i)(A)	The available maximum time-averaged power is no more than 1 mW, regardless of separation distance.
☒ §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 > λ / 2 π . TABLE B.1—THRESHOLDS FOR SINGLE RF SOURCES SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION
☐ § 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, <= Pth

TABLE B.1—THRESHOLDS FOR SINGLE RF SOURCES SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION

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 R²
1.34	–	30	35.6 m	–	1.6 m	3,450 R²/f²
30	–	300	1.6 m	–	159 mm	3.83 R²
300	–	1,500	159 mm	–	31.8 mm	0.0128 R²f
1,500	–	100,000	31.8 mm	–	0.5 mm	19.2R²

Subscripts L and H are low and high; λ is wavelength.
From § 1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.

Device operates between 300 MHz and 6 GHz and the maximum time-averaged power or effective radiated power (ERP), whichever is greater, <= Pth

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20\,cm}(d/20\,cm)^x & d \le 20\,cm \\ ERP_{20\,cm} & 20\,cm < d \le 40\,cm \end{cases}$$

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\,cm}\sqrt{f}}\right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20\,cm} \text{ (mW)} = \begin{cases} 2040f & 0.3\,GHz \le f < 1.5\,GHz \\ 3060 & 1.5\,GHz \le f \le 6\,GHz \end{cases}$$

d = the separation distance (cm);

12.1 EUT Specification

Frequency band (Operating)	☒ WLAN: 2412MHz ~ 2462MHz ☐ WLAN: 5150MHz ~ 5250MHz ☐ WLAN: 5250MHz ~ 5350MHz ☐ WLAN: 5470MHz ~ 5725MHz ☐ WLAN: 5725MHz ~ 5850MHz ☐ Bluetooth: 2402MHz ~ 2480MHz
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation)
Antenna diversity	☐ Single antenna ☒ Multiple antennas 　☒ Tx diversity 　☐ Rx diversity 　☐ Tx/Rx diversity
Evaluation applied	☐ Blanket 1 mW Blanket Exemption ☒ MPE-based Exemption ☐ SAR-based Exemption
Remark: The maximum conducted output power is <u>29.41dBm (873.12mW) at 2437MHz (with 5.00dBi antenna gain.)</u> (Antenna Cable Loss(dB): ANT 1: 1dB, ANT 2: 1dB) *(Antenna Test Gain(dBi): ANT 1: 4dBi, ANT 2: 4dBi)*	

12.2 Result

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Antena Cable Loss(dB)	Max.Tune up e.r.p. Power (dBm)	Max.Tune up e.r.p. Power (mW)	Limit (mW)
2412-2462	29.41	29.91	5	1	31.76	1500.27	3060

No non-compliance noted.

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