5. RF EXPOSURE EVALUATION

5.1 Applicable Standard

According to §1.1307(b)(3)(i)

(B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

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

Where

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

and

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

d = the separation distance (cm);

5.2 Measurement Result

Radio	Frequency (MHz)	Distance (mm)	P_{th} (mW)	P_{th} (dBm)	Maximum Conducted Power including Tune-up Tolerance (dBm)	Antenna Gain (dBi)	ERP (dBm)	Exemption
2.4G Wi-Fi	2412-2462	200	3060	**34.86**	28	3.8	29.65	Compliant
5G Wi-Fi	5150-5250	200	3060	**34.86**	24	4.5	26.35	Compliant
	5250-5350	200	3060	**34.86**	22	4.5	24.35	Compliant
	5725-5850	200	3060	**34.86**	28	4.5	30.35	Compliant

2.4G Wi-Fi and 5G Wi-Fi can transmit simultenuously:

$$\sum_{i=1}^{a}\frac{P_i}{P_{th,i}} + \sum_{j=1}^{b}\frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^{c}\frac{Evaluated_k}{Exposure\ Limit_k}$$

=P$_{2.4G}$/T$_{th-5G}$+P$_{5G}$/T$_{th-5G}$
=803.53/3060+1094/3060
=0.62
<1
Result: The device compliant the Exemption at 20cm distances.

===== **END OF REPORT** =====