Electromagnetic Radiation Field Exposure

Report Number	:	**64.793.23.31849.01-EMF**	Date of Issue:	2024-04-07
Model / Serial No.	:	P008B		
Product Type	:	Nofio wireless adapter		
Applicant	:	Nofio Pty Ltd		
Address	:	55 Barry Parade Fortitude Valley QLD 4006 AUSTRALIA		
Test Result	:	■ Positive ☐ Negative		
Total pages including Appendices	:	8		

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1 Report Version

Revision	Release Date	History/Memo.
1.0	2024-04-07	Initial Release

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2 General Information

2.1 Notes

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	Date	Name	Signature
Approved by	2024-04-07	Peter Jia	
	Date	Name	Signature

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2.2 General remark

The product is a kind of Nofio wireless adapter, using WIFI6E wireless modules for communication. P008B has been test in RF report E20231019753001-5.

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2.3 Test results

2.3.1 Test limit

The EUT shows compliance to the requirements of this section, which states the MPE limits for general population / uncontrolled exposure are as shown below:

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm2)	Average Time (min)
0.3–1.34	614	1.63	*(100)	<30
1.34–30	824/f	2.19/f	*(180/f2)	<30
30–300	27.5	0.073	0.2	<30
300–1,500			f/1500	<30
1,500–100,000			1	<30
f = frequency in MHz. * = Plane-wave equivalent power density.				

2.3.2 Maximum Permissible Exposure Exemptions

Standalone SAR test exclusion considerations
Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition(s), listed below, is (are) satisfied.

3 options are available to compute the SAR Test Exclusion Threshold condition(s).

(A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance.

(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:

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

Where

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

and

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

d = the separation distance (cm);

(C) Or using Table 1 below and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least λ/2π, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of λ/4 or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

Table 1 to § 1.1307(b)(3)(i)(C)—Single RF Sources Subject to Routine Environmental Evaluation	
RF Source frequency (MHz)	Threshold ERP (watts)
0.3–1.34	1,920 R^2.
1.34–30	3,450 R^2/f^2.
30–300	3.83 R^2.
300–1,500	0.0128 R^2f.
1,500–100,000	19.2R^2.

SAR Test Exclusion Threshold Computation
Applying Option (C), the threshold power, Threshold ERP at 20cm distance was computed from the following formula:

Threshold ERP=19.2x0.2^2 =0.768(watts)

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Test result:

Type	Operating frequency	Max. Output power (dBm)	Gain (dBi)	r(m)	Threshold ERP (watts)	Threshold ERP (dBm)	Result
U-NII-5	5925 MHz--6425 MHz	17.80	3.5	0.2	0.768	28.85	Pass
U-NII-6	6425 MHz--6525 MHz	17.51	3.5	0.2	0.768	28.85	Pass
U-NII-7	6525 MHz--6875 MHz	17.55	3.5	0.2	0.768	28.85	Pass
U-NII-8	6875 MHz--7125 MHz	15.93	3.5	0.2	0.768	28.85	Pass

Note
1) According to ANSI C63.10-2020 this EUT supports MIMO 2X2, the antenna gains are equal and any transmit signals are correlated with each other.
2) For power measurements on 802.11 devices, Directional gain = GANT + Array Gain, Array Gain = 10 log(NANT/NSS) dBi.
3) The Directional gain =3.5+10log(2/1)=6.51dBi, so the EIRP Power=total AVG Power+ Directional gain.
4) The antenna gain is equal and the number of antennas is less than 4, Array gain=0, and power does not need to be counted as rollback.
5) r is the distance from observation point to the antenna which is declared by the applicant.
6) The power data is form test report E20231019753001-5

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