

Maximum Permissible Exposure Evaluation

FCC ID: 2A23L-NBD-ADH0

1. Client Information

Applicant	:	NBDair Inc.
Address	:	1023 Walnut Street, #100, Boulder, CO 80302 U.S.A
Manufacturer	:	DONGGUAN CANDO INTELLIGENT TECHNOLOGY CO.,LTD
Address	:	3rd floor, No.5, Xiakeng Industrial Road, Changping Town, Dongguan City, Guangdong Province, China

2. General Description of EUT

EUT Name	:	Desktop Air Purifier	
Models No.	:	NBD-ADH0, NBD-ADH1, NBD-ADH2, NBD-ADH3, NBD-ADH4, NBD-ADH5, NBD-ADH6, NBD-ADH7, NBD-ADH8, NBD-ADH9, NBD-ADU0, NBD-ADU1, NBD-ADU2, NBD-ADU3, NBD-ADU4, NBD-ADU5, NBD-ADU6, NBD-ADU7, NBD-ADU8, NBD-ADU9	
Model Different	:	All these models are on the same PCB, the layout and circuit are identical, the only difference is the model name and color.	
Product Description	:	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz
		Number of Channel:	802.11b/g/n(HT20):11 channels
		RF Output Power:	802.11b: 16.86dBm(MAX)
		Antenna Gain:	2.5dBi PCB Antenna
Power Rating	:	Input: AC120V 60Hz	
Software Version	:	V1.0	
Hardware Version	:	V1.0	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
Remark	:	the evaluation report used the EUT(20211029-17-2#).	

MPE Calculations for WIFI

1. Antenna Gain:

PCB Antenna:2.5dBi.

2. EUT Operation Condition:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3. Exposure Evaluation:

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S=(PG)/4\pi R^2$$

Where

S: power density

P: power input to the antenna

G: power gain of the antenna in the direction of interest relative to an isotropic radiator.

R: distance to the center of radiation of the antenna

4. Test Result:

2.4G WiFi

Mode	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm ²) [S]	Limit of Power Density (mW/ cm ²) (S)
802.11B	16.506	16±1	17	2.5	20	0.01773	1
802.11G	16.133	16±1	17	2.5	20	0.01773	1
802.11N(HT20)	13.154	13±1	14	2.5	20	0.00889	1

5. Conclusion:

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

Limits for General Population/ Uncontrolled Exposure

Frequency Range (MHz)	Power density (mW/ cm ²)
300-1,500	F/1500
1,500-100,000	1.0

For 2.4WIFI:2412~2462 MHz

MPE limit S: 1mW/ cm²

The MPE is calculated as **$0.01773 \text{ mW} / \text{cm}^2 < \text{limit } 1 \text{ mW} / \text{cm}^2$** . So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

Note

For a more detailed features description, please refer to the RF Test Report.

6. Conclusion:

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

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