RF EXPOSURE

EVALUATION REPORT

Applicant: **Kohler Co.**

Address: 444 Highland Drive, Kohler, Wisconsin, United States 53044

FCC ID: **N82-KOHLER050**

Product Name: **NUMI2.0 INTELLIGENT TOILET**

Standard(s): **47 CFR §1.1307**

The above equipment has been tested and found compliant with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

Report Number: **CR22080065-00F**

Date Of Issue: **2023/8/10**

Reviewed By: **Calvin Chen**

Title: RF Engineer

Approved By: **Sun Zhong**

Title: Manager

Test Laboratory: **China Certification ICT Co., Ltd (Dongguan)**
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Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0123.

Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol "▲". Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR22080065-00F	Original Report	2023/8/10

1. RF EXPOSURE EVALUATION

1.1 Applicable Standard

According to §1.1307(b)(3)(i)

(C) Or using Table 1 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 $\lambda/2\pi$, 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 $\lambda/4$ 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.

1.2 Measurement Result

Radio	Frequency (MHz)	λ /2Π (mm)	Distance (mm)	Exemption ERP (mW)	Maximum Conducted Power including Tune-up Tolerance (dBm)	Antenna Gain (dBi)	ERP	
							dBm	mW
2.4G SRD	2402-2480	19.88	200	768	/	0.50	-2.27	0.59
Radar	24000-24250	1.97	200	768	/	0	-0.48	0.90
WiFi Module 2.4G WLAN	2412-2462	19.80	200	768	16.5	2.0	16.35	43.15
WiFi Module 5G WLAN	5180-5825	8.31	200	768	14.3	3.3	15.45	35.08
BT/WiFi Module BDR/EDR	2402-2480	19.88	200	768	7	1.18	6.03	4.01
BT/WiFi Module BLE	2402-2480	19.88	200	768	6	1.18	5.03	3.18
BT/WiFi Module 2.4G WLAN	2412-2462	19.80	200	768	24	1.18	23.03	200.91
BT/WiFi Module 5.2G WLAN	5180-5240	9.22	200	768	14	3.14	14.99	31.55
BT/WiFi Module 5.3G WLAN	5260-5320	9.08	200	768	13	2.75	13.60	22.91
BT/WiFi Module 5.6G WLAN	5500-5720	8.68	200	768	11	4.21	13.06	20.23
BT/WiFi Module 5.8G WLAN	5745-5825	8.31	200	768	10	3.47	11.32	13.55
Note: The devices contain certified 2.4G SRD Module, FCC ID: 2AOFDLSD4RF043610D0, certified Radar Module, FCC ID: N82-KOHLER036 and certified WiFi Module, FCC ID: Z64-CC3235MOD								

Note:

1. For 2.4G SRD and Radar Chose the maximum power to do MPE analysis.
2. 2.4G SRD maximum E - Field level is 95.08 dBμV/m at 3m, So the EIRP power is -0.12dBm
3. Radar maximum E - Field level is 96.87 dBμV/m at 3m, So the EIRP power is 1.67dBm
4. EIRP(dBm) = Field Strength of Fundamental(dBuV/m)-95.2
5. ERP = EIRP – 2.15 dB

The 2.4G SRD, Radar, WiFi Module, BT/WiFi Module can transmit simultaneously.

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

$=P_{2.4G\ SRD} / ERP_{th} + P_{Radar} / ERP_{th} + P_{WiFi\ Module\ 2.4G\ WALN} / ERP_{th} + P_{BT/WiFi\ Module\ 2.4G\ WLAN} / ERP_{th}$

$=0.59/768 + 0.90/768 + 43.15/768 + 200.91/768$

$=0.320$

< 1.0

Result: The device meet FCC MPE at 20 cm distance.

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