



Test report No: 6183426.51

ASSESSMENT REPORT

RF Exposure Evaluation

Identification of item tested	KitchenAid Smart Thermometer
Trademark	KitchenAid
Model and /or type reference	KTH11BM
Features	USB 5Vdc, 0.35A; Repeater battery : 0.35AH, 1.3Wh
FCC ID	A5UTTIVNWMT01
ISED Number	10248A-TTIVNWMT01
Applicant's name / address	Whirlpool Corporation 2000 N M-63 Benton Harbor, Michigan 49022, United States
Test method requested, standard	FCC CFR Title 47 Part 2 Subpart J Section 2.1093 RSS-102 Issue 5 IEEE Std C95.3:2002
Verdict Summary	IN COMPLIANCE
Prepared by (name / position & signature)	Adrian Shi Technical Supervisor 
Approved by (name / position & signature)	Lei Chen Senior Project Manager 
Date of issue	2024-11-06
Report template No	TRF_MPE_RF01 V1.0

INDEX

	page
Competences and Guarantees.....	3
General conditions.....	3
Environmental conditions.....	3
Possible test case verdicts	4
Definition of symbols used in this test report	4
Abbreviations	4
Document History	4
Remarks and Comments	5
1 General Information.....	6
1.1 General Description of the Item(s)	6
1.2 Test date	7
1.3 Test Facility	7
2 Single RF Sources.....	8
2.1 FCC Limit	8
2.2 IC Limit	9
2.3 Result of Exemption	10

COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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GENERAL CONDITIONS

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
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4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.
5. This report will not be used for social proof function in China market.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15 °C – 35 °C
Relative Humidity air	30% - 60%
Atmospheric pressure	86 kPa – 106 kPa

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

DEFINITION OF SYMBOLS USED IN THIS TEST REPORT

<input checked="" type="checkbox"/> Indicates that the listed condition, standard or equipment is applicable for this report/test/EUT.			
<input type="checkbox"/> Indicates that the listed condition, standard or equipment is not applicable for this report/test/EUT.			
Decimal separator used in this report	<input checked="" type="checkbox"/>	Comma (,)	<input type="checkbox"/> Point (.)

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT	: Equipment Under Test
QP	: Quasi-Peak
CAV	: CISPR Average
AV	: Average
CDN	: Coupling Decoupling Network
SAC	: Semi-Anechoic Chamber
OATS	: Open Area Test Site
BW	: Bandwidth
AM	: Amplitude Modulation
PM	: Pulse Modulation
HCP	: Horizontal Coupling Plane
VCP	: Vertical Coupling Plane
U_N	: Nominal voltage
Tx	: Transmitter
Rx	: Receiver
N/A	: Not Applicable
N/M	: Not Measured

DOCUMENT HISTORY

Report nr.	Date	Description
6183426.51	2024-11-06	First release.

REMARKS AND COMMENTS

The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).

The test results relate only to the samples tested.

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1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Description of the item	KitchenAid Smart Thermometer
Model / Type number	KTH11BM
Trademark.....	KitchenAid
FCC ID	A5UTTIVNWMT01
ISED Number	10248A-TTIVNWMT01
Test Sample Number	6183426.01
Manufacturer.....	KitchenAid Global LLC Kitchenaid Portable Appliance Tech,ST JOSEPH TECHNOLOGY CENTER, 303 Upton Dr., St Joseph, MI, 49085, USA

Mode of Operation	Bluetooth BLE
Operating frequency range(s).....	2402~2480 MHz
Type of Modulation	GFSK
PHYs	<input checked="" type="checkbox"/> LE 1M <input checked="" type="checkbox"/> LE 2M <input type="checkbox"/> LE Coded S=2/8
Data Rate	<input checked="" type="checkbox"/> 1 Mbps <input checked="" type="checkbox"/> 2 Mbps <input type="checkbox"/> 500/125 Kbps
Antenna type.....	Repeater: PCB Antenna Probe: Metal antenna
Antenna gain.....	Repeater: 3.8 dBi Probe: -3.76 dBi
Number of channel	40

Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	<input type="checkbox"/>	AC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	DC: 5V (Repeater)					
	<input checked="" type="checkbox"/>	Battery: 3V (Probe)					
Mounting position.....	<input type="checkbox"/>	Table top equipment					
	<input type="checkbox"/>	Wall/Ceiling mounted equipment					
	<input type="checkbox"/>	Floor standing equipment					
	<input checked="" type="checkbox"/>	Hand-held equipment					
	<input type="checkbox"/>	Other:					

Intended use of the Equipment Under Test (EUT)
The product is KitchenAid Smart Thermometer which supports BLE function and it is divided into probe and repeater two parts, each part using different Bluetooth modules.

1.2 **Test date**

Test Location	DEKRA Testing and Certification (Shanghai) Ltd. No.250, Jiangchangsan Road, Jing'an District, Shanghai, China
Date of receipt of test item	2024-02-27
Date (s) of performance of tests	2024-07-29~2024-08-18

1.3 **Test Facility**

FCC Designation Number	:	CN1358
ISED CAB identifier Number	:	CN0155

2 Single RF Sources

2.1 FCC Limit

According to FCC KDB 447498 D04V01-SAR-Based Exemption

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:

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

Where

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

and

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

d = the separation distance (cm);

The example values shown in below table are for illustration only.

Table 1 - Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
		5	10	15	20	25	30	35	40	45	50
300		39	65	88	110	129	148	166	184	201	217
450		22	44	67	89	112	135	158	180	203	226
835		9	25	44	66	90	116	145	175	207	240
1900		3	12	26	44	66	92	122	157	195	236
2450		3	10	22	38	59	83	111	143	179	219
3600		2	8	18	32	49	71	96	125	158	195
5800		1	6	14	25	40	58	80	106	136	169

2.2 IC Limit

According to RSS-102 2.5.1 Exemption Limits for Routine Evaluation – SAR Evaluation

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table 2.

Table 2 - SAR evaluation – Exemption limits for routine evaluation based on frequency and separation distance

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of ≤5 mm	At separation distance of 10 mm	At separation distance of 15 mm	At separation distance of 20 mm	At separation distance of 25 mm
≤300	71 mW	101 mW	132 mW	162 mW	193 mW
450	52 mW	70 mW	88 mW	106 mW	123 mW
835	17 mW	30 mW	42 mW	55 mW	67 mW
1900	7 mW	10 mW	18 mW	34 mW	60 mW
2450	4 mW	7 mW	15 mW	30 mW	52 mW
3500	2 mW	6 mW	16 mW	32 mW	55 mW
5800	1 mW	6 mW	15 mW	27 mW	41 mW

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of 30 mm	At separation distance of 35 mm	At separation distance of 40 mm	At separation distance of 45 mm	At separation distance of ≥50 mm
≤300	223 mW	254 mW	284 mW	315 mW	345 mW
450	141 mW	159 mW	177 mW	195 mW	213 mW
835	80 mW	92 mW	105 mW	117 mW	130 mW
1900	99 mW	153 mW	225 mW	316 mW	431 mW
2450	83 mW	123 mW	173 mW	235 mW	309 mW
3500	86 mW	124 mW	170 mW	225 mW	290 mW
5800	56 mW	71 mW	85 mW	97 mW	106 mW

Output power level shall be the higher of the maximum conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power.

2.3 Result of Exemption

Repeater

Mode	Frequency Range (MHz)	Conducted Peak Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP (mW)	Distance (mm)	FCC Exclusion threshold (mW)	Exemption
BLE	2402 ~ 2480	-0.77	3.8	3.03	0.88	1.22	5	3	Complies

Note: EIRP = ERP + 2.15

Probe

Mode	Frequency Range (MHz)	Conducted Peak Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP (mW)	Distance (mm)	FCC Exclusion threshold (mW)	Exemption
BLE	2402 ~ 2480	0.38	-3.76	-3.38	-5.53	0.28	5	3	Complies

Note: EIRP = ERP + 2.15

Repeater

Mode	Frequency Range (MHz)	Conducted Peak Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Distance (mm)	IC Exclusion threshold (mW)	Exemption
BLE	2402 ~ 2480	-0.77	3.8	3.03	2.00	5	4	Complies

Probe

Mode	Frequency Range (MHz)	Conducted Peak Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Distance (mm)	IC Exclusion threshold (mW)	Exemption
BLE	2402 ~ 2480	0.38	-3.76	-3.38	0.46	5	4	Complies

--- END ---