

MRT Technology (Suzhou) Co., Ltd Phone: +86-512-66308358 Web: www.mrt-cert.com Report No.:1807WSU002-U2 Report Version: V01 Issue Date: 08-27-2018

RF Exposure Evaluation Declaration

FCC ID: FHO-E1716

APPLICANT: IKEA of Sweden AB

Application Type: Certification

Product: Wireless Speaker ENEBY Built-in

Model No.: E1716

Brand Name: IKEA

FCC Classification: FCC Part 15 Spread Spectrum Transmitter(DSS)

Test Date: July 05 ~ August 08, 2018

Reviewed By : Com Cruo

(Kevin Guo)

Approved By : Robin Wu

(Robin Wu)



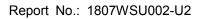


The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

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Revision History

Report No.	Version	Description	Issue Date	Note
1807WSU002-U2	Rev. 01	Initial report	08-27-2018	Valid

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§2.1033 General Information

Applicant:	IKEA of Sweden AB		
Applicant Address:	SE-343 81, Almhult, Sweden		
Manufacturer:	IKEA of Sweden AB		
Manufacturer Address:	SE-343 81, Almhult, Sweden		
Test Site:	MRT Technology (Suzhou) Co., Ltd		
Test Site Address:	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic		
	Development Zone, Suzhou, China		
FCC Registration No.:	893164		
IC Registration No.:	11384A-1		
Test Device Serial No.:	N/A ☐ Production ☐ Pre-Production ☐ Engineering		

Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- MRT facility is a FCC registered (MRT Reg. No. 893164) test facility with the site description report on file and has met all the requirements specified in ANSI C63.4-2014.
- MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.
- MRT facility is a VCCI registered (R-20025, G-20034, C-20020, T-20020) test laboratory with the site description on file at VCCI Council.
- MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications, Radio and SAR testing.



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1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taihu Lake. These measurement tests were conducted at the MRT Technology (Suzhou) Co., Ltd. Facility located at D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China. The measurement facility compliant with the test site requirements specified in ANSI C63.4-2014.



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2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name:	Wireless Speaker ENEBY Built-in	
Model No.:	E1716	
Brand Name:	IKEA	
Bluetooth Version:	V4.2 (Only support Bluetooth v3.0+HS)	

2.2. Product Specification Subjective to this Standard

Operating Frequency:	2402~2480MHz
Channel Number:	79
Type of modulation:	GFSK, Pi/4 DQPSK, 8DPSK
Data Rate:	1Mbps(GFSK), 2Mbps(Pi/4 DQPSK), 3Mbps (8DPSK)
Antenna Type:	FPC Antenna
Antenna Gain:	1.0dBi

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3. RF Exposure Evaluation

3.1. Limits

SAR Test Exclusion Thresholds for 100 MHz - 6 GHz and ≤ 50 mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in Note 1 must be applied to determine SAR test exclusion.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test
300	27	55	82	110	137	Exclusion
450	22	45	67	89	112	Threshold
835	16	33	49	66	82	(mW)
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	
MHz	30	35	40	45	50	mm
150	232	271	310	349	387	SAR Test
300	164	192	219	246	274	Exclusion
450	134	157	179	201	224	Threshold
835	98	115	131	148	164	(mW)
900	95	111	126	142	158	
1500	73	86	98	110	122	
1900	65	76	87	98	109	
2450	57	67	77	86	96	
3600	47	55	63	71	79	
					00	
5200	39	46	53	59	66	
5200 5400	39 39	46 45	53 52	59 58	65	

Note: The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] *

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 $[\sqrt{f(GHz)}] \le 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is \leq 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

3.2. Test Procedure

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

The temperature and related humidity: 20°C and 75% RH.

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3.3. Test Result of RF Exposure Evaluation

Product	Wireless Speaker ENEBY Built-in	
Test Item	RF Exposure Evaluation	

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.0dBi for Bluetooth in logarithm scale.

Output Power into Antenna:

Test Mode	Frequency Band	Maximum output	Maximum output	SAR Test Exclusion
	(MHz)	power to antenna	power to antenna	Threshold (mW)
		(dBm)	(mW)	
Bluetooth	2402 ~ 2480	9.79	9.53	29

Per FCC KDB 447498 D01v06, the SAR exclusion threshold for distances<50mm is defined by the following equation:

$$\frac{Max\ Power\ of\ Channel\ (mW)}{Test\ Separation\ Dist\ (mm)}*\sqrt{Frequency(GHz)} \leq 3.0$$

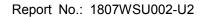
Based on the maximum conducted power of Bluetooth and the antenna to use separation distance, Bluetooth SAR was not required;

$$[(9.53 \text{ mW/15})^* \sqrt{2.480}] = 1.052 < 3.0$$

The Max
$$P_d = 1.052 < 3.0$$

Note: When the minimum test separation distance is < 15 mm, a distance of 15 mm is applied to determine SAR test exclusion.

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3.4. FINAL CONCULISON

The device is excluded for SAR test and complies with the FCC exposure requirements since the maximum conducted peak output power is lower than the SAR test exclusion thresholds.

———— The End



Appendix A – EUT Photograph

Refer to "1807WSU002-UE" file.

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