China

FCC - TEST REPORT

Report Number	:	**60.792.17.020.02R01**	Date of Issue	:	August 19, 2017
Model	:	**HG01335A, HG01335B, HG01335C**			
Product Type	:	**Bluetooth speaker**			
Applicant	:	Lidl US Trading, LLC			
Address	:	3500 S. Clark Street Arlington, Virginia, 22202			
Production Facility	:	DIGI MAX TECHNOLOGY LIMITED			
Address	:	Room 708, Building 3, Xinyuan B area, Jinshan Industrial District, Fuzhou, China			
Test Result	:	■**Positive** ☐**Negative**			
Total pages including Appendices	:	44			

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1 Table of Contents

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2 Description of Equipment Under Test

Description of the Equipment Under Test

Product:	Bluetooth speaker
Model no.:	HG01335A, HG01335B, HG01335C
FCC ID:	2AJ9O-HG1335
Rating:	1) 3.6VDC (1 x 3.6VDC Rechargeable battery) 2) 5.0VDC (USB port)
Frequency:	2402MHz-2480MHz
Antenna gain:	0 dBi
Number of operated channel:	79
Modulation:	GFSK

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3 Summary of Test Standards

Test Standards
FCC Part 15 Subpart C 10-1-16 Edition Federal Communications Commission, PART 15 — Radio Frequency Devices, Subpart C — Unintentional Radiators

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4 Details about the Test Laboratory

Site 1

Company name: TÜV SÜD Hong Kong Ltd.
3/F, West Wing, Lakeside 2,
10 Science Park West Avenue,
Science Park, Shatin, Hong Kong

Site 2

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Building 12&13 Zhiheng Wisdomland Business Park,
Nantou Checkpoint Road 2,
Shenzhen 518052, P.R.China
FCC Registration Number: 502708

Emission Tests	
Test Item	Test Site
FCC Part 15 Subpart C	
FCC Title 47 Part 15.205, 15.209 & 15.247(d) Spurious Radiated Emission	Site 2
FCC Title 47 Part 15.247(a)(1) 20dB & 99% Bandwidth	Site 2
FCC Title 47 Part 15.247(b) Peak Output Power	Site 2
FCC Title 47 Part 2.1051 & 15.247(d) Spurious Emissions at Antenna Terminals	Site 2
FCC Title 47 Part 15.247(d) 100kHz Bandwidth of band edges	Site 2
FCC Title 47 Part 15.247(a)(1) Minimum Number of Hopping Frequencies	Site 2
FCC Title 47 Part 15.247(a)(1) Minimum Hopping Channel Carrier Frequency Separation	Site 2
FCC Title 47 Part 15.247(a)(1) Average Time of Occupancy	Site 2
FCC Title 47 Part 15.203 & 15.247(b) Antenna Requirement	Site 2

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4.1 Test Equipment Site List

Radiated emission Test – Site 2

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	14-July-18
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	14-July-18
Horn Antenna	Rohde & Schwarz	HF907	102294	14-July-18
Pre-amplifier	Rohde & Schwarz	SCU 18	102230	14-July-18
3m Semi-anechoic chamber	TDK	9X6X6	----	14-July-20

20dB & 99% Bandwidth, Peak Output Power, Spurious Emissions at Antenna Terminals, 100kHz Bandwidth of band edges, Min. No. of Hopping Frequencies, Min. Hopping Channel Carrier Frequency Separation and Average Time of Occupancy – Site 2

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
Signal Generator	Rohde & Schwarz	SMB100A	108272	07-July-18
Signal Analyzer	Rohde & Schwarz	FSV40	101030	07-July-18
Vector Signal Generator	Rohde & Schwarz	SMU 200A	105324	07-July-18
RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157	101226/100851	07-July-18

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4.2 Measurement System Uncertainty

Measurement System Uncertainty Emissions

System Measurement Uncertainty	
Items	**Extended Uncertainty**
Uncertainty for Radiated Emission in 3m chamber 9kHz-30MHz	4.54dB
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 4.83dB; Vertical: 4.91dB;
Uncertainty for Radiated Emission in 3m chamber 1000MHz-25000MHz	Horizontal: 4.89dB; Vertical: 4.88dB;
Uncertainty for Conducted RF test	2.04dB

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5 Summary of Test Results

Emission Tests				
FCC Part 15 Subpart C				
Test Condition	Pages	Test Result		
		Pass	Fail	N/A
FCC Title 47 Part 15.205, 15.209 & 15.247(d) Spurious Radiated Emission	10-15	☒	☐	☐
FCC Title 47 Part 15.247(a)(2) 6dB & 99% Bandwidth	16-18	☒	☐	☐
FCC Title 47 Part 15.247(b) Peak Output Power	19-21	☒	☐	☐
FCC Title 47 Part 2.1051 & 15.247(d) Spurious Emissions at Antenna Terminals	22-24	☒	☐	☐
FCC Title 47 Part 15.247(d) 100kHz Bandwidth of band edges	25-28	☒	☐	☐
FCC Title 47 Part 15.247(a)(1) Min. No. of Hopping Frequencies	29	☒	☐	☐
FCC Title 47 Part 15.247(a)(1) Min. of Hopping Channel Carrier Frequency Separation	30	☒	☐	☐
FCC Title 47 Part 15.247(a)(1) Average Time of Occupancy	31	☒	☐	☐
FCC Title 47 Part 15.203 & 15.247(b) Antenna Requirement	32	☒	☐	☐

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6 General Remarks

Remarks

Client informs that the HG01335A, HG01335B have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction, with Bluetooth speaker, HG01335C. The difference lies only on different color of the different models. (Client's conformation letter shown at appendix C)

EMC Tests were performed on model: HG01335C.

SUMMARY:

- All tests according to the regulations cited on page 5 were

  ■ - Performed

  ☐ - **Not** Performed

- The Equipment Under Test

  ■ - **Fulfills** the general approval requirements.

  ☐ - **Does not** fulfill the general approval requirements.

Sample Received Date: June 7, 2017

Testing Start Date: June 8, 2017

Testing End Date: July 26, 2017

- TÜV SÜD HONG KONG LTD. -

Reviewed by: Prepared by:

CHAN Kwong Ngai
EMC Test Engineer

CHAN Kwan Ho Alex
EMC Project Engineer

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7 Emission Test Results

7.1 Spurious Radiated Emission

EUT: HG01335C
Op Condition: Operated, TX Mode (2402MHz)
Test Specification: FCC15.205, 15.209 & 15.247(d) Antenna: Horizontal
Comment: 3.6VDC
Remark: 9kHz to 25GHz

Test Result
☒ Passed
☐ Not Passed

Frequency MHz	Result dBµV/m	Limit dBµV/m	Margin dB	Detector
59.423	32.92	40	-7.08	Quasi Peak
176.847	37.88	43.5	-5.62	Quasi Peak
232.783	36.55	46	-9.45	Quasi Peak
528.680	27.33	46	-18.67	Quasi Peak
1004.330	32.09	74	-41.91	Peak
1004.330	22.46	54	-31.54	Average
1245.400	27.78	74	-46.22	Peak
1245.400	19.44	54	-34.56	Average
4804.000	42.18	74	-31.82	Peak
4804.000	30.53	54	-23.47	Average
7206.000	37.12	74	-36.88	Peak
7206.000	26.98	54	-27.02	Average
12010.000	40.07	74	-33.93	Peak
12010.000	29.05	54	-24.95	Average

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Spurious Radiated Emission

EUT: HG01335C
Op Condition: Operated, TX Mode (2402MHz)
Test Specification: FCC15.205, 15.209 & 15.247(d) Antenna: Vertical
Comment: 3.6VDC
Remark: 9kHz to 25GHz

Test Result
☒ Passed
☐ Not Passed

Frequency MHz	Result dBµV/m	Limit dBµV/m	Margin dB	Detector
59.423	28.29	40	-11.71	Quasi Peak
176.847	37.37	43.5	-6.13	Quasi Peak
232.783	29.63	46	-16.37	Quasi Peak
528.680	26.92	46	-19.08	Quasi Peak
1004.330	26.39	74	-47.61	Peak
1004.330	19.47	54	-34.53	Average
1245.400	30.41	74	-43.59	Peak
1245.400	22.29	54	-31.71	Average
4804.000	38.30	74	-35.70	Peak
4804.000	26.81	54	-27.19	Average
7206.000	41.46	74	-32.54	Peak
7206.000	29.03	54	-24.97	Average
12010.000	42.38	74	-31.62	Peak
12010.000	31.66	54	-22.34	Average

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Spurious Radiated Emission

EUT: HG01335C
Op Condition: Operated, TX Mode (2441MHz)
Test Specification: FCC15.205, 15.209 & 15.247(d) Antenna: Horizontal
Comment: 3.6VDC
Remark: 9kHz to 25GHz

Test Result
☒ Passed
☐ Not Passed

Frequency MHz	Result dBµV/m	Limit dBµV/m	Margin dB	Detector
45.573	28.31	40	-11.69	Quasi Peak
58.668	29.48	40	-10.52	Quasi Peak
179.111	37.36	43.5	-6.14	Quasi Peak
534.400	26.84	46	-19.16	Quasi Peak
1004.133	30.48	74	-43.52	Peak
1004.133	21.34	54	-32.66	Average
1757.800	31.22	74	-42.78	Peak
1757.800	21.85	54	-32.15	Average
4882.000	43.30	74	-30.70	Peak
4882.000	30.31	54	-23.69	Average
7323.000	40.15	74	-44.90	Peak
7323.000	29.10	54	24.90	Average
12205.000	41.82	74	-32.18	Peak
12205.000	30.27	54	-23.73	Average

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Spurious Radiated Emission

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Op Condition: Operated, TX Mode (2441MHz)
Test Specification: FCC15.205, 15.209 & 15.247(d) Antenna: Vertical
Comment: 3.6VDC
Remark: 9kHz to 25GHz

Test Result
☒ Passed
☐ Not Passed

Frequency MHz	Result dBµV/m	Limit dBµV/m	Margin dB	Detector
45.573	29.2	40	-10.80	Quasi Peak
58.668	30.04	40	-9.96	Quasi Peak
179.111	36.91	43.5	-6.59	Quasi Peak
534.400	27.33	46	-18.67	Quasi Peak
1004.133	32.59	74	-41.41	Peak
1004.133	22.82	54	-31.18	Average
1757.800	36.17	74	-37.83	Peak
1757.800	26.35	54	-27.65	Average
4882.000	40.27	74	-33.73	Peak
4882.000	30.12	54	-23.88	Average
7323.000	39.19	74	-44.59	Peak
7323.000	29.41	54	24.59	Average
12205.000	42.57	74	-31.43	Peak
12205.000	30.79	54	-23.21	Average

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Spurious Radiated Emission

EUT: HG01335C
Op Condition: Operated, TX Mode (2480MHz)
Test Specification: FCC15.205, 15.209 & 15.247(d) Antenna: Horizontal
Comment: 3.6VDC
Remark: 9kHz to 25GHz

Test Result
☒ Passed
☐ Not Passed

Frequency MHz	Result dBµV/m	Limit dBµV/m	Margin dB	Detector
59.315	33.14	40	-6.86	Quasi Peak
176.793	33.58	40	-6.42	Quasi Peak
229.227	35.19	43.5	-8.31	Quasi Peak
706.244	25.87	46	-20.13	Quasi Peak
1006.331	33.10	74	-40.90	Peak
1006.331	23.57	54	-30.43	Average
1248.665	28.56	74	-45.44	Peak
1248.665	20.19	54	-33.81	Average
4960.000	41.78	74	-32.22	Peak
4960.000	30.34	54	-23.66	Average
7440.000	40.26	74	-44.92	Peak
7440.000	29.08	54	24.92	Average
12400.000	43.62	74	-30.38	Peak
12400.000	30.73	54	-23.27	Average

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Spurious Radiated Emission

EUT: HG01335C
Op Condition: Operated, TX Mode (2480MHz)
Test Specification: FCC15.205, 15.209 & 15.247(d) Antenna: Vertical
Comment: 3.6VDC
Remark: 9kHz to 25GHz

Test Result
☒ Passed
☐ Not Passed

Frequency MHz	Result dBµV/m	Limit dBµV/m	Margin dB	Detector
59.315	32.84	40	-7.16	Quasi Peak
176.793	33.25	40	-6.75	Quasi Peak
229.227	34.93	43.5	-8.57	Quasi Peak
706.244	25.92	46	-20.08	Quasi Peak
1006.331	30.95	74	-43.05	Peak
1006.331	21.96	54	-32.04	Average
1248.665	32.00	74	-42.00	Peak
1248.665	22.48	54	-31.52	Average
4960.000	40.75	74	-33.25	Peak
4960.000	29.22	54	-24.78	Average
7440.000	40.61	74	-44.99	Peak
7440.000	29.01	54	24.99	Average
12400.000	43.86	74	-30.14	Peak
12400.000	31.51	54	-22.49	Average

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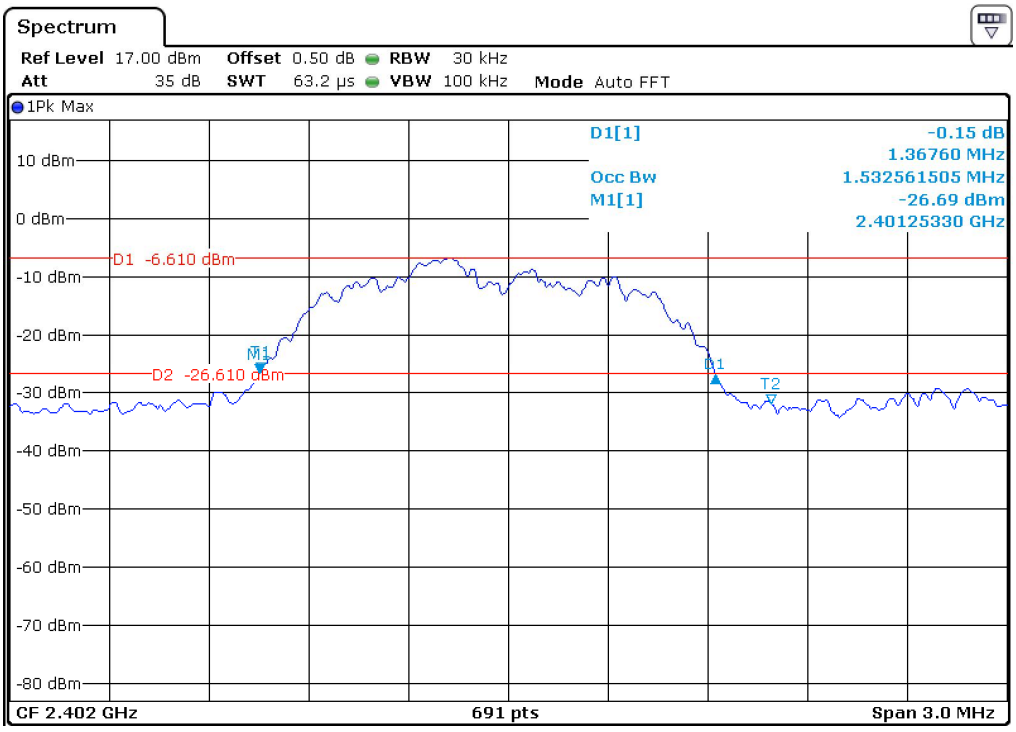
7.2 20dB & 99% Bandwidth

EUT:	HG01335C
Op Condition:	Operated, TX Mode (2402MHz)
Test Specification:	FCC15.247(a)(2), 20dB Bandwidth & 99% Bandwidth
Comment:	3.6VDC

Test Result
☒ Passed
☐ Not Passed



20dB bandwidth	99% bandwidth
1384.900 kHz	1450.007 kHz

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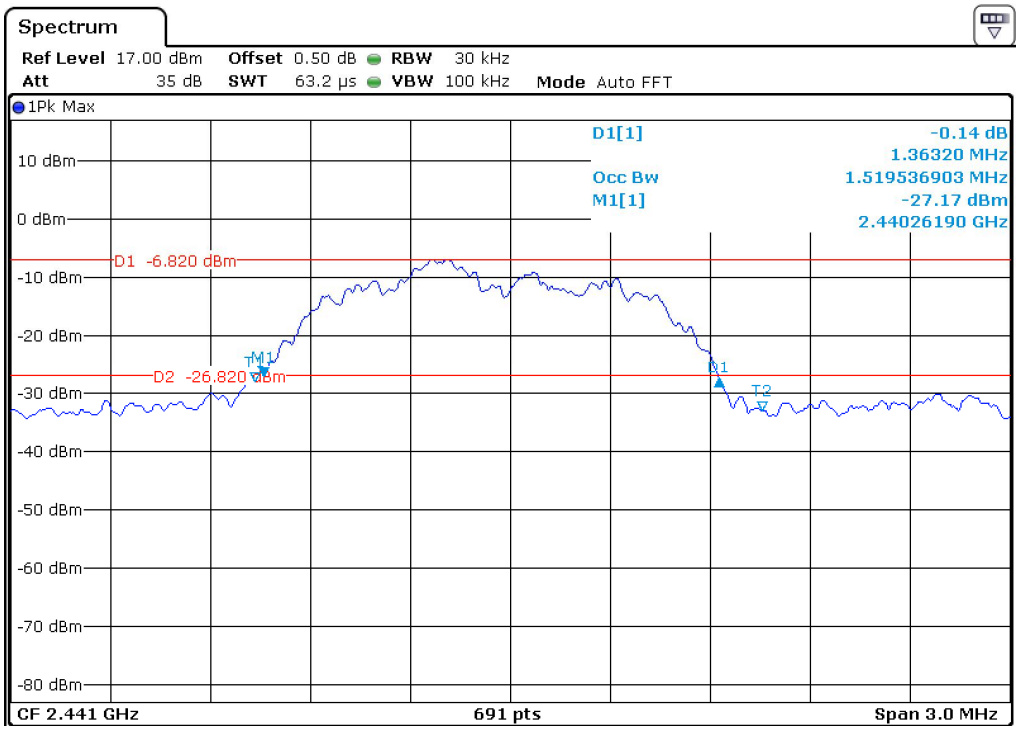
20dB & 99% Bandwidth

EUT:	HG01335C
Op Condition:	Operated, TX Mode (2441MHz)
Test Specification:	FCC15.247(a)(2), 20dB Bandwidth & 99% Bandwidth
Comment:	3.6VDC

Test Result
☒ Passed
☐ Not Passed



20dB bandwidth	99% bandwidth
1363.200 kHz	1519.537 kHz

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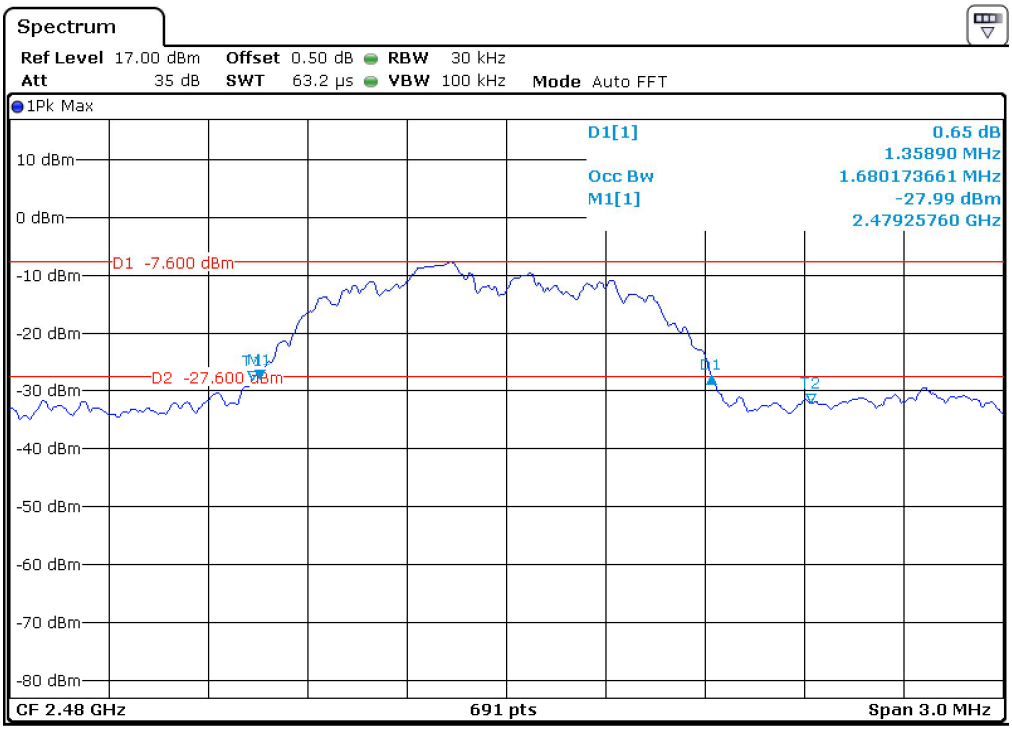
20dB & 99% Bandwidth

EUT:	HG01335C
Op Condition:	Operated, TX Mode (2480MHz)
Test Specification:	FCC15.247(a)(2), 20dB Bandwidth & 99% Bandwidth
Comment:	3.6VDC

Test Result
☒ Passed
☐ Not Passed



20dB bandwidth	99% bandwidth
1358.900 kHz	1680.174 kHz

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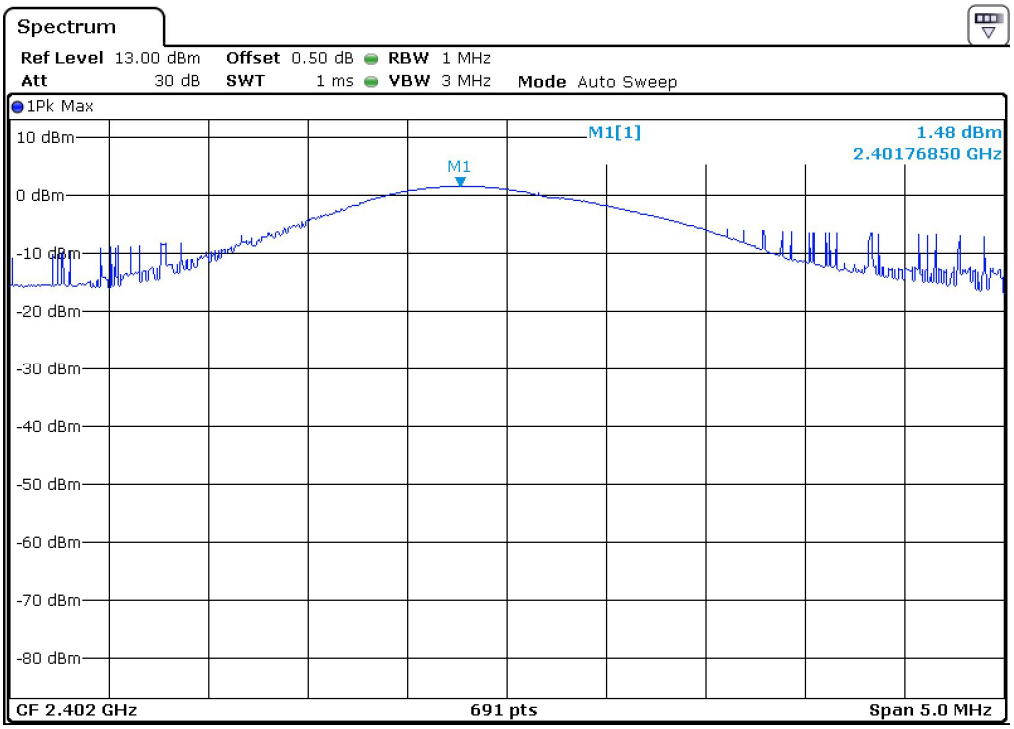
7.3 Peak Output Power

EUT:	HG01335C
Op Condition:	Operated, TX Mode (2402MHz)
Test Specification:	FCC15.247(b)
Comment:	3.6VDC, Antenna gain: 0 dBi, Cable Loss: 0.5dB

Test Result
☒ Passed
☐ Not Passed



Conducted Output Power (dBm)	Conducted Output Power (mW)	Limit (mW)
1.48	1.406	125.0

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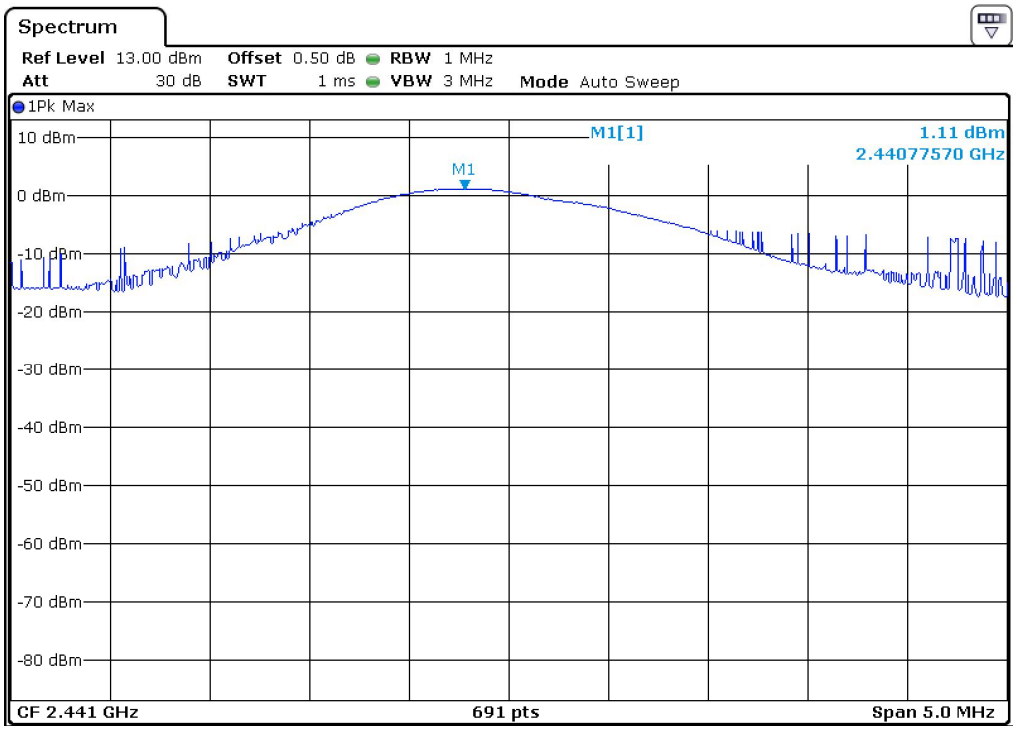
Peak Output Power

EUT: HG01335C
Op Condition: Operated, TX Mode (2441MHz)
Test Specification: FCC15.247(b)
Comment: 3.6VDC, Antenna gain: 0 dBi, Cable Loss: 0.5dB

Test Result
☒ Passed
☐ Not Passed



Conducted Output Power (dBm)	Conducted Output Power (mW)	Limit (mW)
1.11	1.291	125.0

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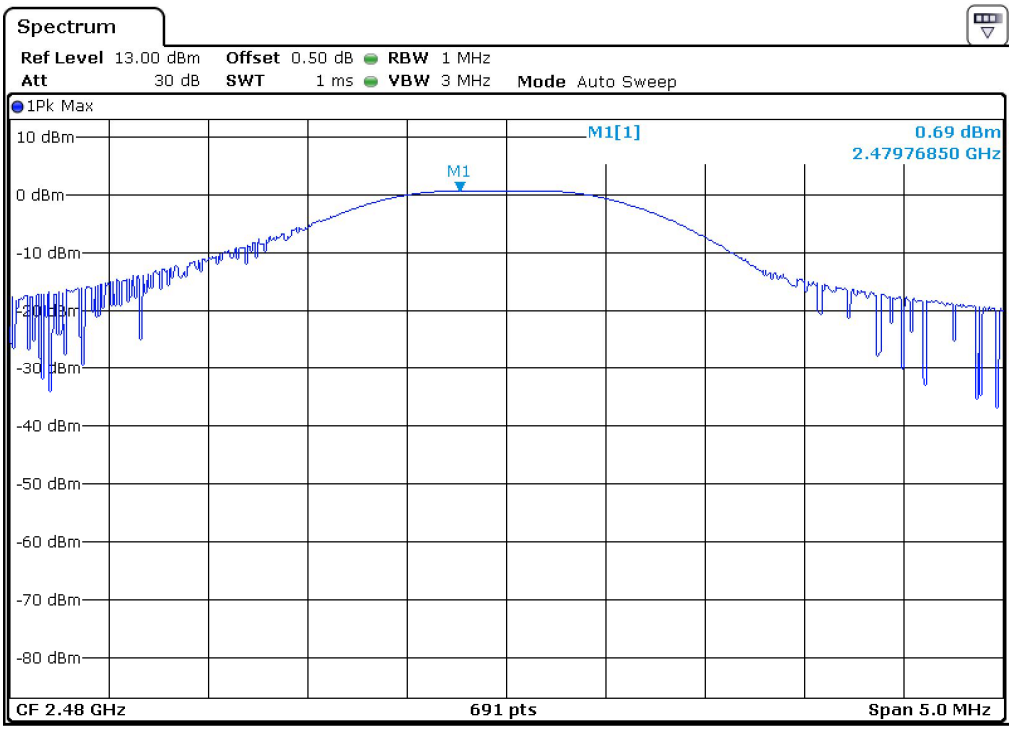
Peak Output Power

EUT:	HG01335C
Op Condition:	Operated, TX Mode (2480MHz)
Test Specification:	FCC15.247(b)
Comment:	3.6VDC, Antenna gain: 0 dBi, Cable Loss: 0.5dB

Test Result
☒ Passed
☐ Not Passed



Conducted Output Power (dBm)	Conducted Output Power (mW)	Limit (mW)
0.69	1.172	125.0

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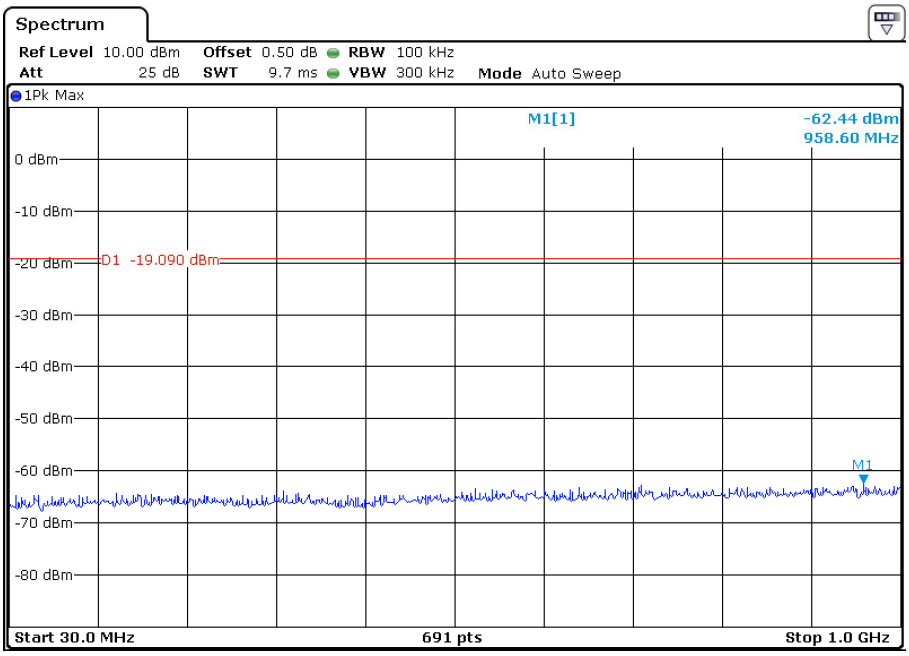
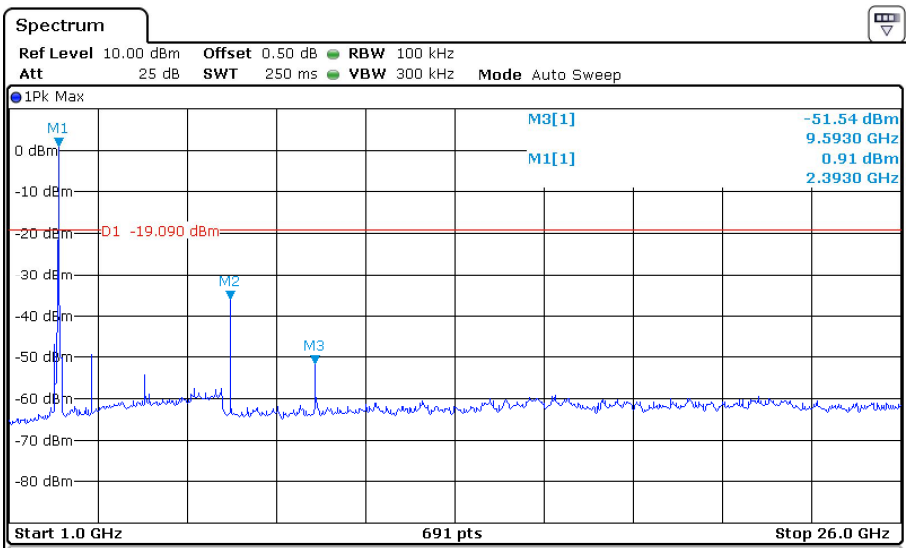
7.4 Spurious Emissions at Antenna Terminals

EUT: HG01335C
Op Condition: Operated, TX Mode (2402MHz)
Test Specification: FCC2.1051 & 15.247(d)
Comment: 3.6VDC

Test Result
☒ Passed
☐ Not Passed





Limit: 20dB below the highest level of the desired power in the passband

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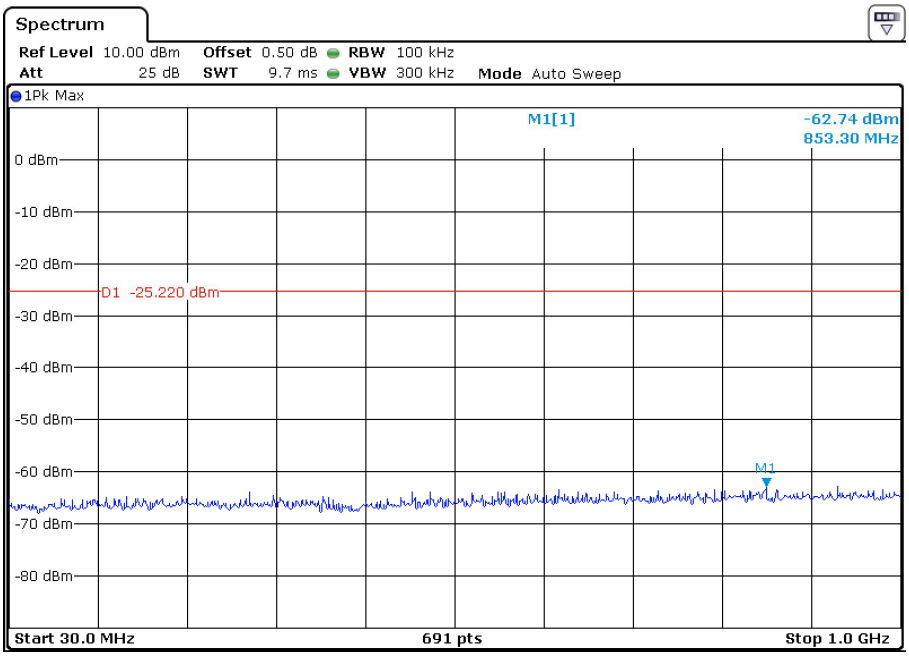
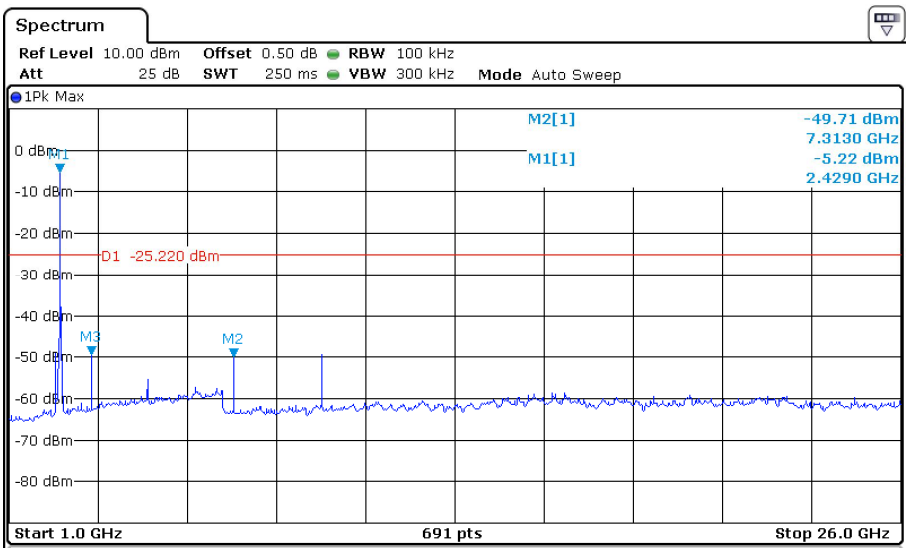
Spurious Emissions at Antenna Terminals

EUT: HG01335C
Op Condition: Operated, TX Mode (2441MHz)
Test Specification: FCC2.1051 & 15.247(d)
Comment: 3.6VDC

Test Result
☒ Passed
☐ Not Passed





Limit: 20dB below the highest level of the desired power in the passband

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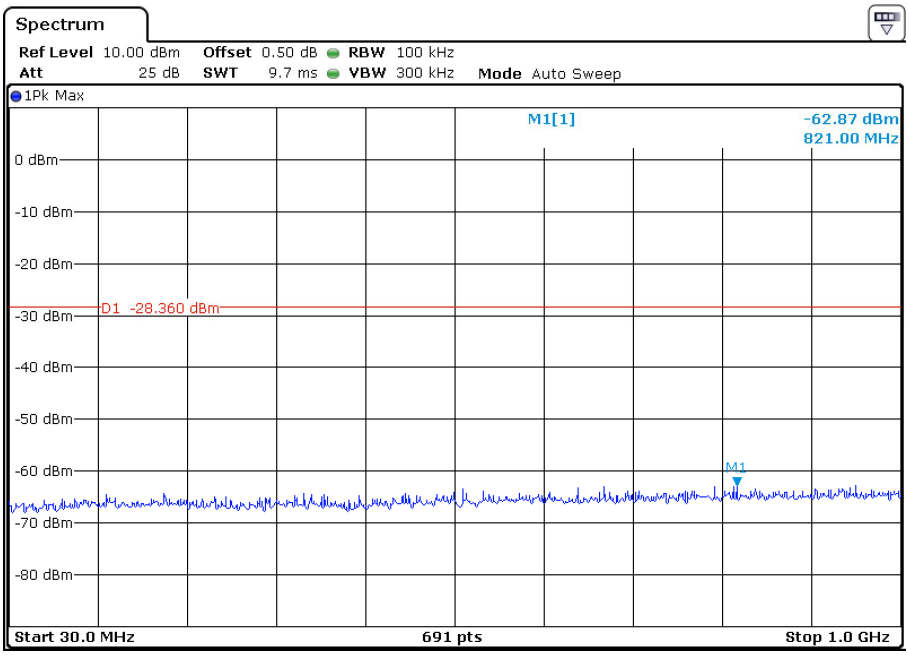
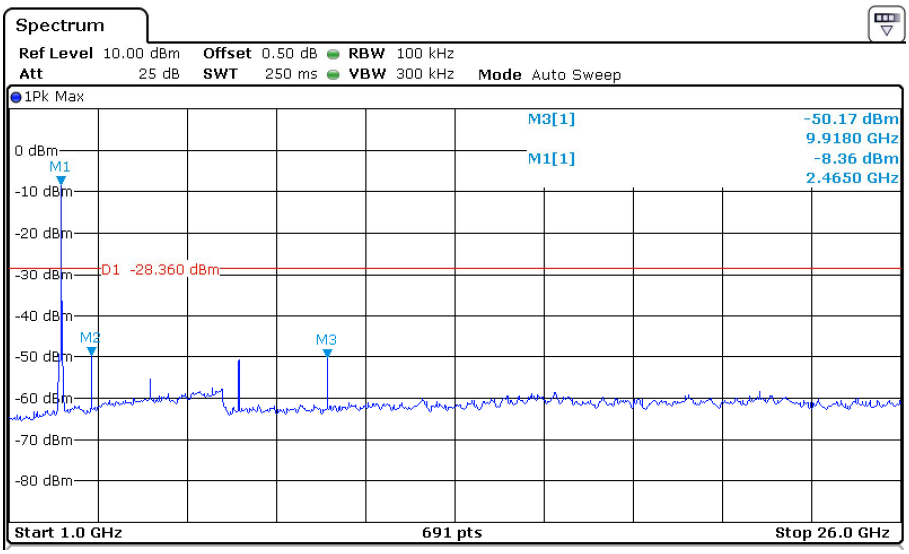
Spurious Emissions at Antenna Terminals

EUT: HG01335C
Op Condition: Operated, TX Mode (2480MHz)
Test Specification: FCC2.1051 & 15.247(d)
Comment: 3.6VDC

Test Result
☒ Passed
☐ Not Passed





Limit: 20dB below the highest level of the desired power in the passband

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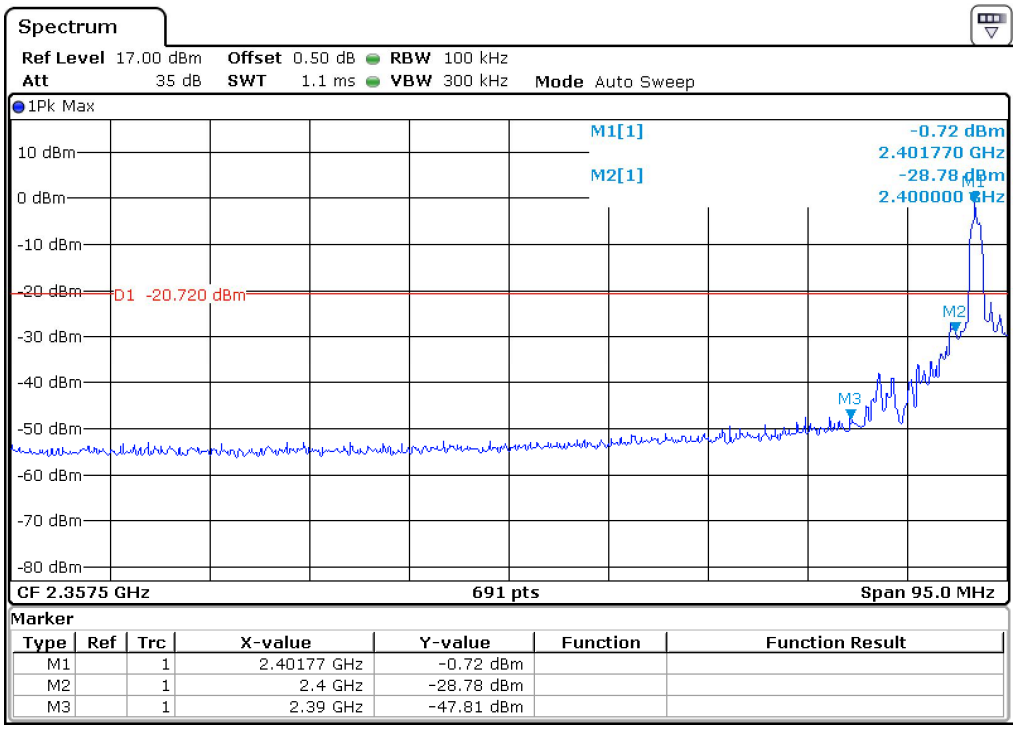
Tel: +852-2776 1323 Fax: +852-2776 1206

7.5 100kHz Bandwidth of band edges

EUT: HG01335C
Op Condition: Operated, TX Mode (2402MHz)
Test Specification: FCC15.247(d), Conducted
Comment: 3.6VDC

Test Result
☒ Passed
☐ Not Passed



Band edges	Limit
28.06 dB	> 20dB

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100kHz Bandwidth of band edges

EUT: HG01335C
Op Condition: Operated, TX Mode (2402MHz)
Test Specification: FCC15.247(d), Radiated
Comment: 3.6VDC

Test Result
☒ Passed
☐ Not Passed

Frequency MHz	Result dBµV/m	Limit dBµV/m	Margin dB	Detector
2390.000	47.40	74	-26.60	Peak
2390.000	34.18	54	-19.82	Average

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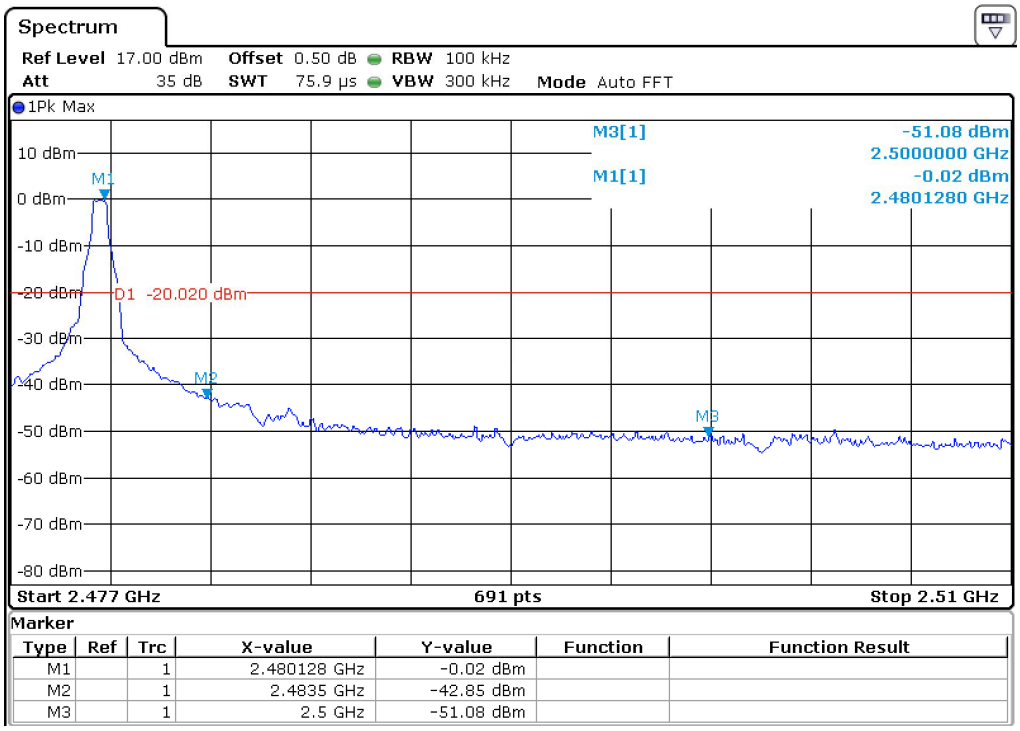
100kHz Bandwidth of band edges

EUT: HG01335C
Op Condition: Operated, TX Mode (2480MHz)
Test Specification: FCC15.247(d), Conducted
Comment: 3.6VDC

Test Result
☒ Passed
☐ Not Passed



Band edges	Limit
42.83 dB	> 20dB

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100kHz Bandwidth of band edges

EUT: HG01335C
Op Condition: Operated, TX Mode (2480MHz)
Test Specification: FCC15.247(d), Radiated
Comment: 3.6VDC

Test Result
☒ Passed
☐ Not Passed

Frequency MHz	Result dBµV/m	Limit dBµV/m	Margin dB	Detector
2483.500	51.16	74	-22.84	Peak
2483.500	36.33	54	-17.67	Average

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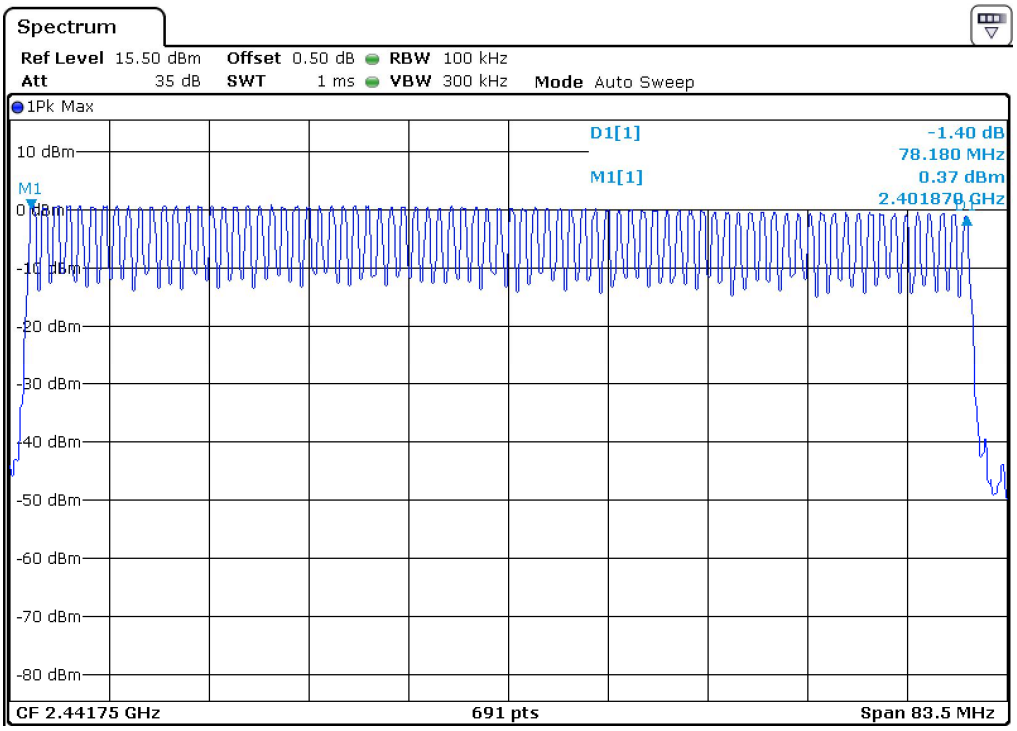
7.6 Minimum. Number of Hopping Frequencies

EUT: HG01335C
Op Condition: Operated, TX Mode (2402-2480MHz)
Test Specification: FCC15.247(a)(1)
Comment: 3.6VDC

Test Result
☒ Passed
☐ Not Passed



Hopping Channels	Limit
79	≥ 15

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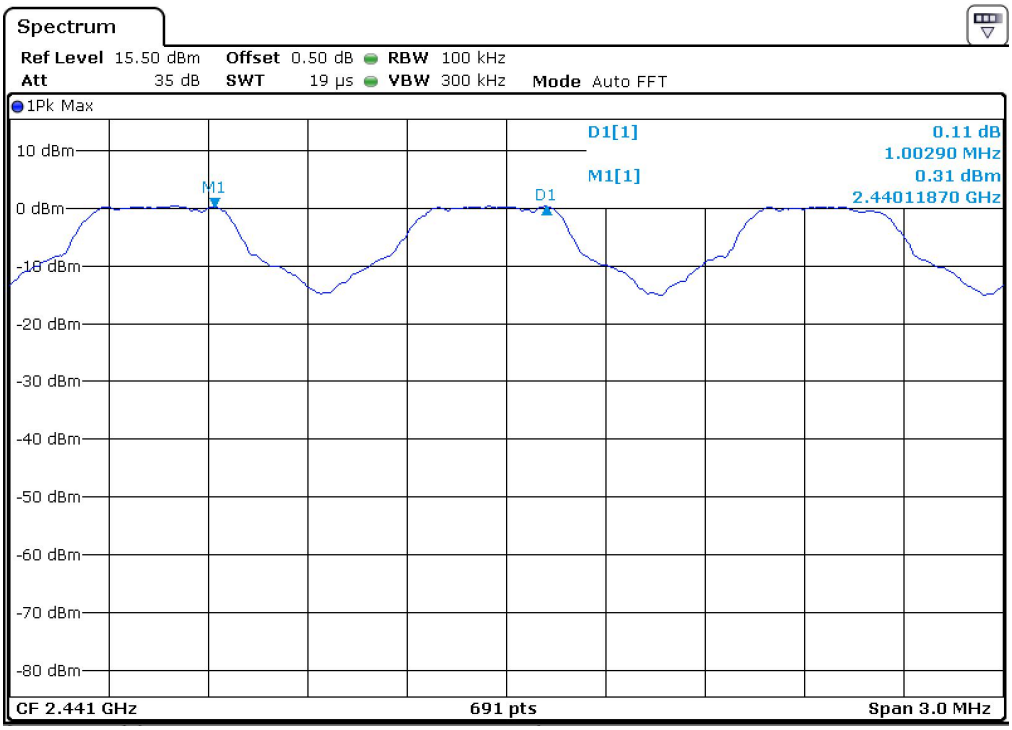
7.7 Minimum Hopping Channel Carrier Frequency Separation

EUT: HG01335C
Op Condition: Operated, TX Mode (2402-2480MHz)
Test Specification: FCC15.247(a)(1)
Comment: 3.6VDC

Test Result
☒ Passed
☐ Not Passed



Chanel Separation	Limit
1002.90 kHz	924 kHz

Limit: 2/3 of 20dB bandwidth of hopping channel

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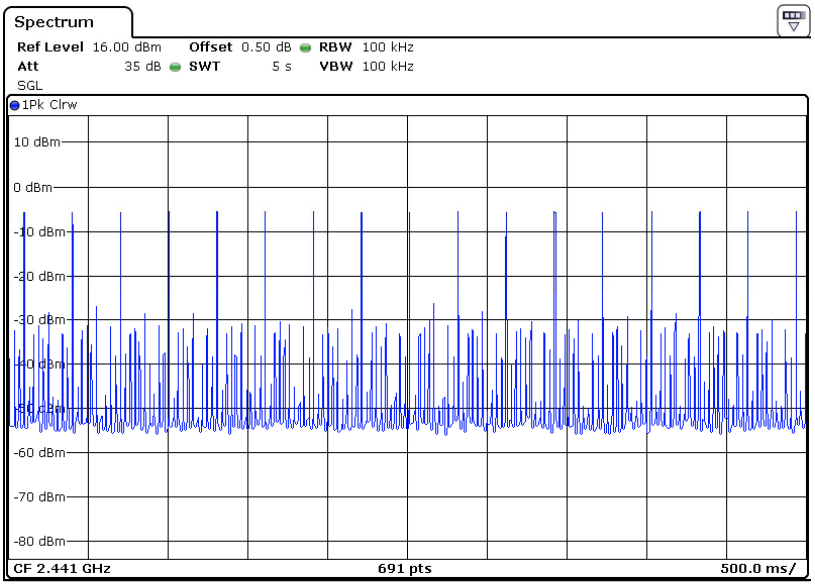
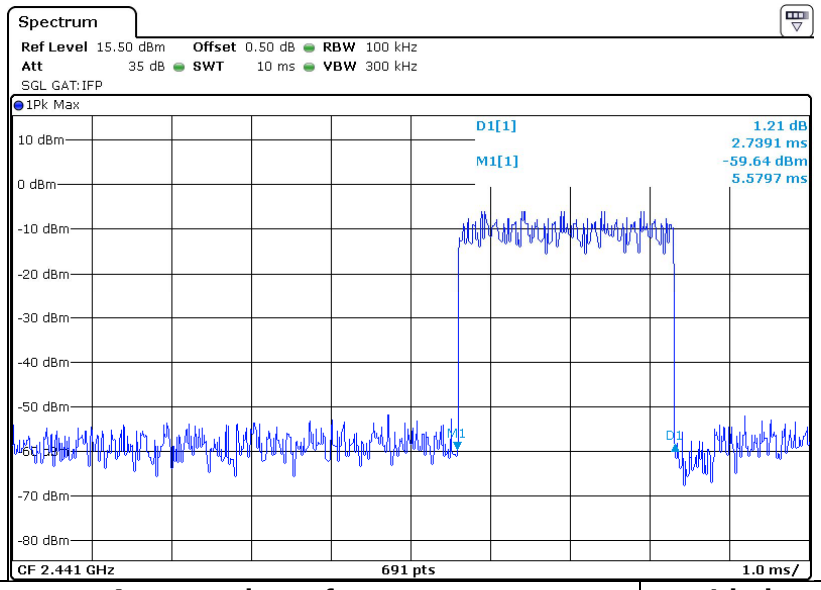
7.8 Average Channel Occupancy Time

EUT: HG01335C
Op Condition: Operated, TX Mode (2402MHz)
Test Specification: FCC15.247(a)(1)
Comment: 3.6VDC

Test Result
☒ Passed
☐ Not Passed





Average time of occupancy	Limit
Number of hops in 5 sec.: 17 Period: 0.4 x 79 Ch. = 31.6 sec. Total number of hops in 31.6 sec.: (17/5)*31.6=108 Time of single pulse: 2.739 ms Average time of occupancy: 2.739 ms x 108 = 0.2958 sec.	0.4 Seconds

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7.9 Antenna Requirement

EUT:	HG01335C
Op Condition:	Operated, TX Mode
Test Specification:	FCC15.203 & 15.247(b)
Comment:	3.6VDC

Test Result
☒ Passed
☐ Not Passed

Limit

For intentional device, according to FCC Title 47 Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC Title 47 Part 15.247(b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The antenna used in this product is PCB antenna, and the maximum gain of this antenna is 0.0 dBi.

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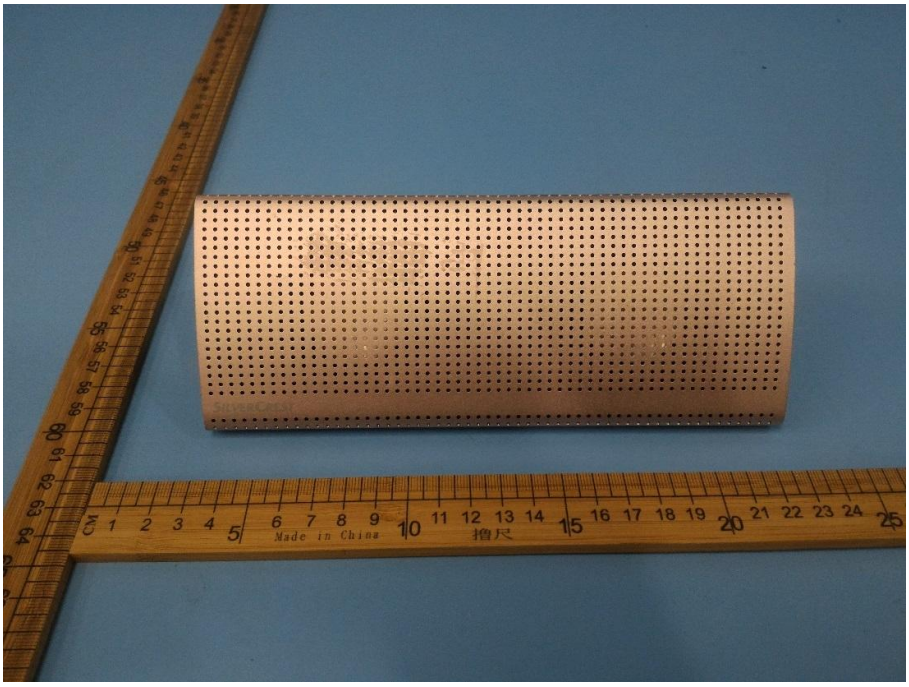
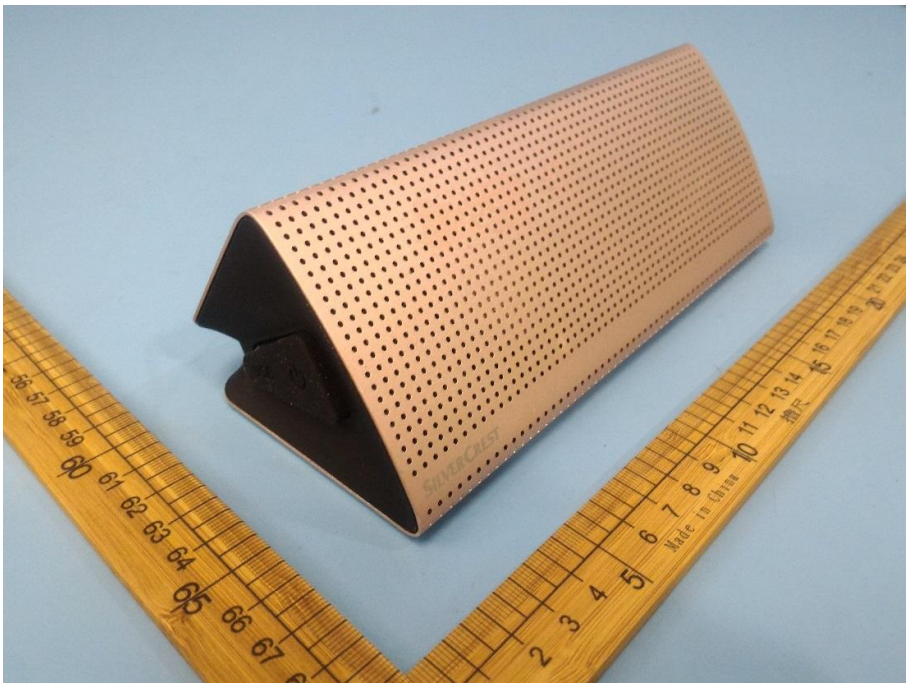
8 Appendix A - Photographs of EUT





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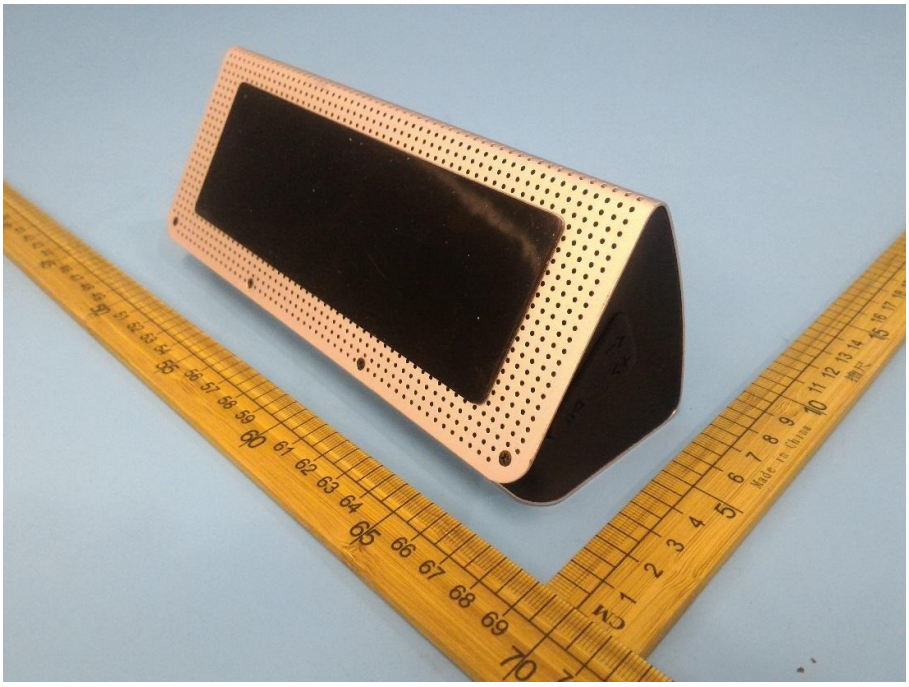
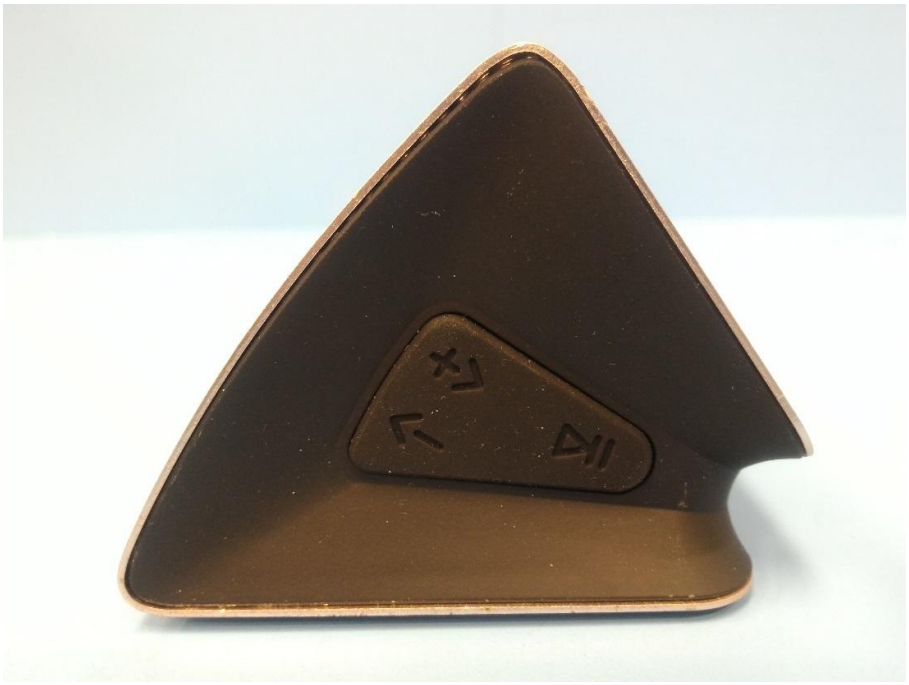
Appendix A





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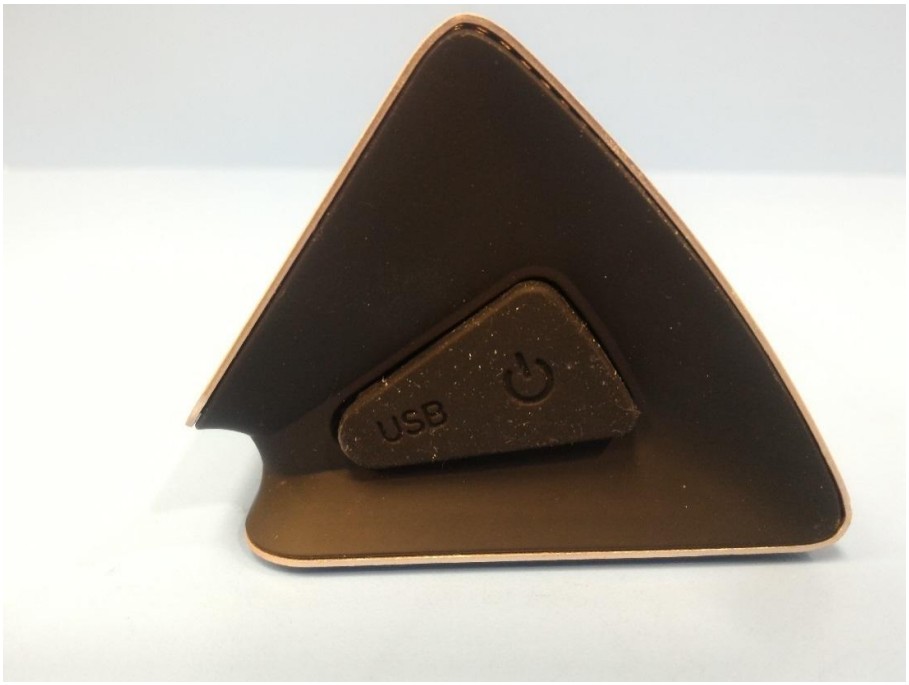
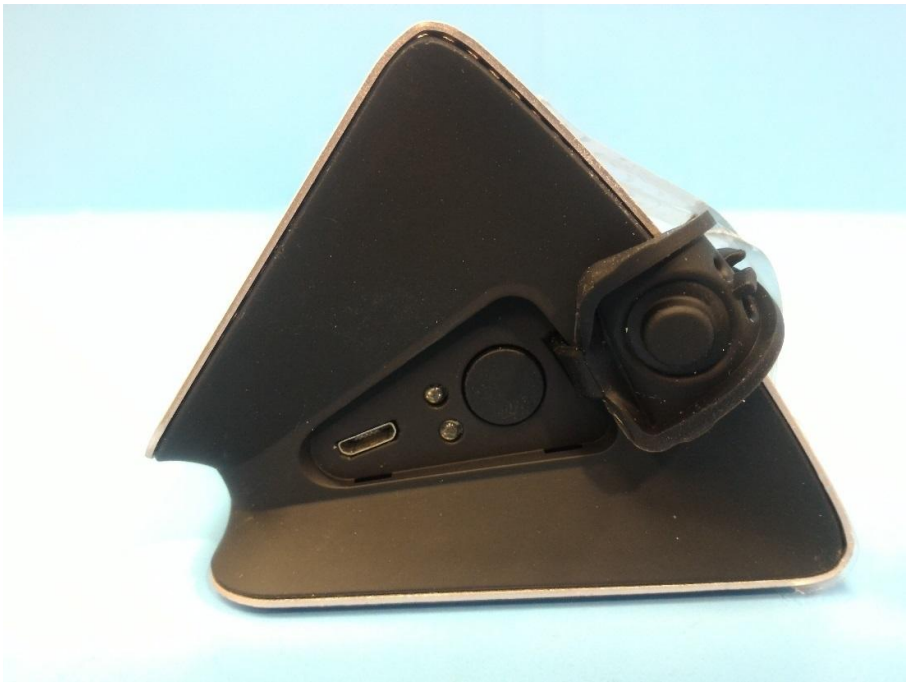
Appendix A





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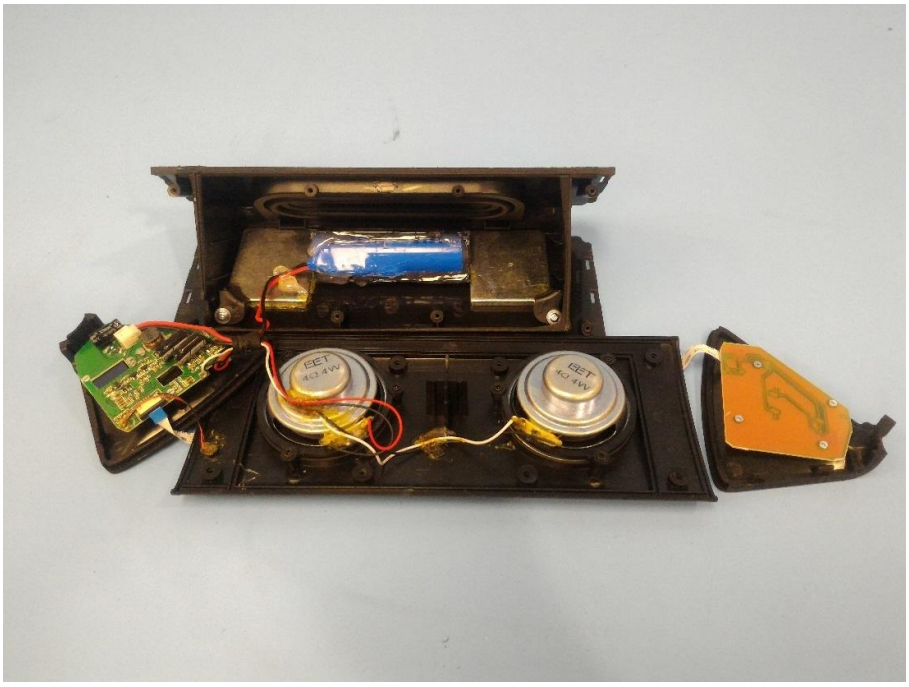
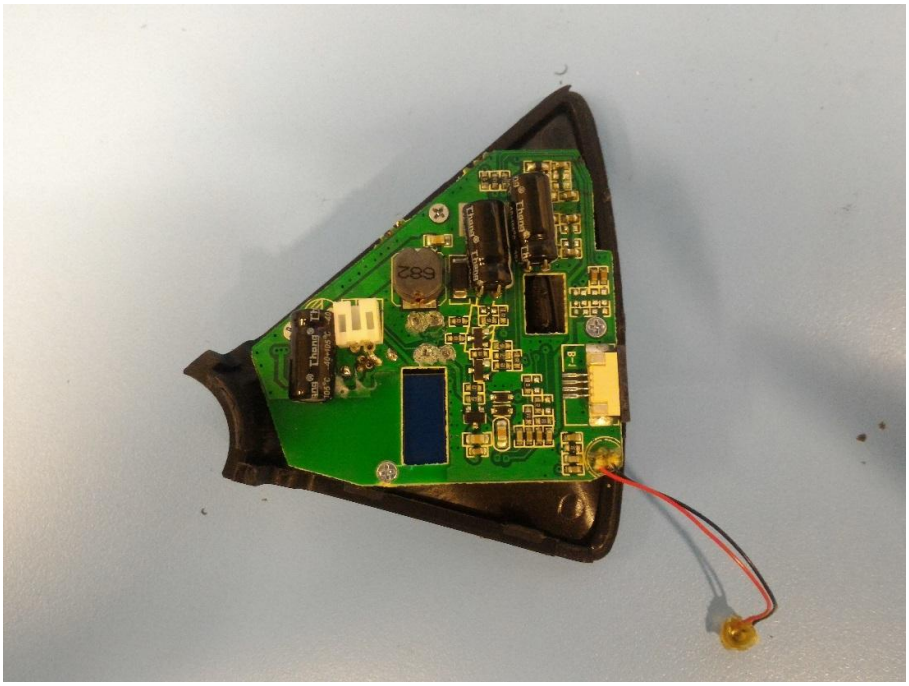
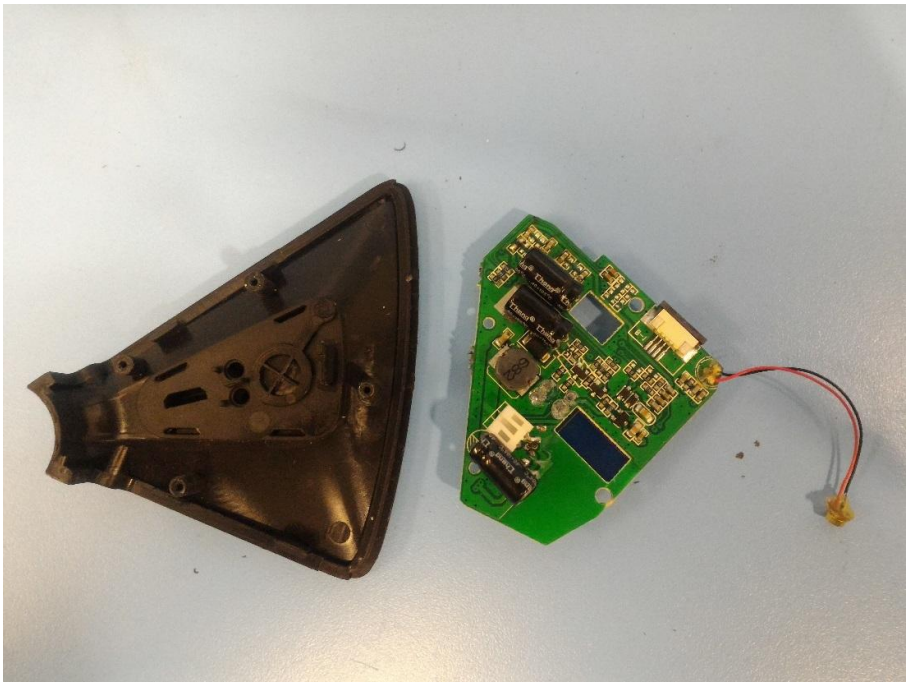
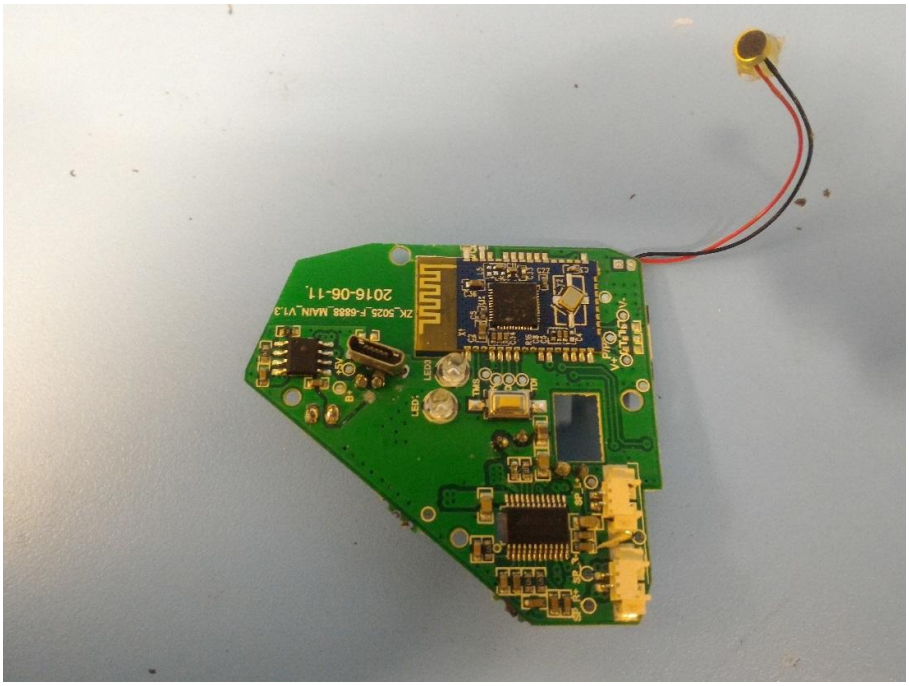




Appendix A





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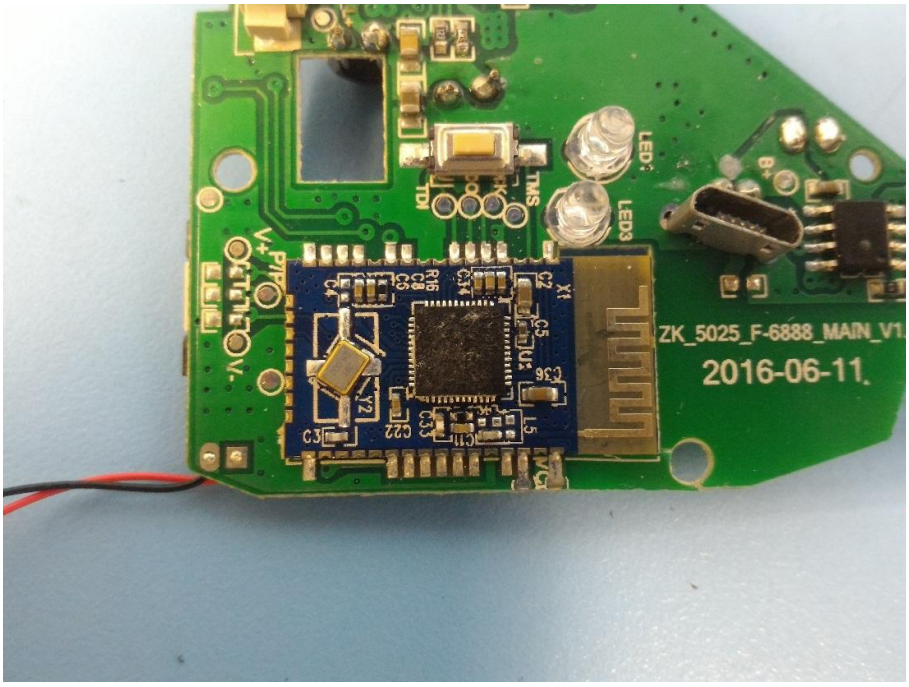
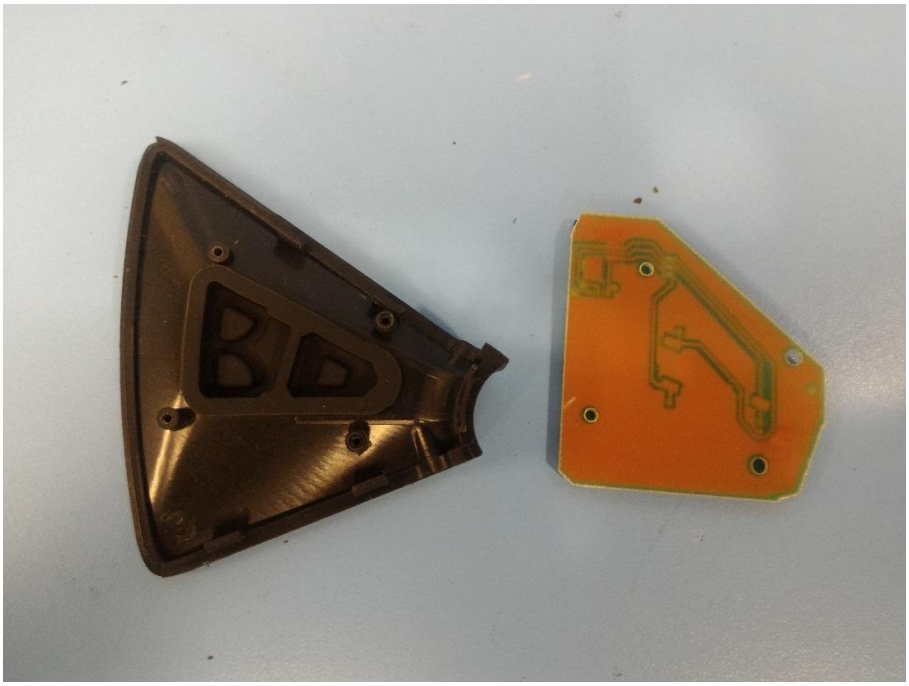
Appendix A





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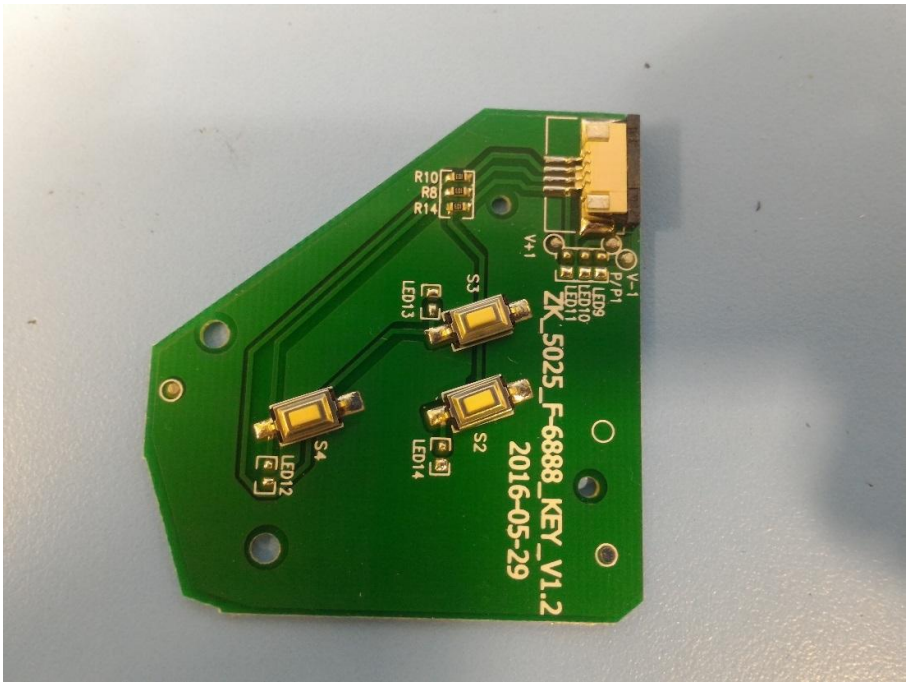
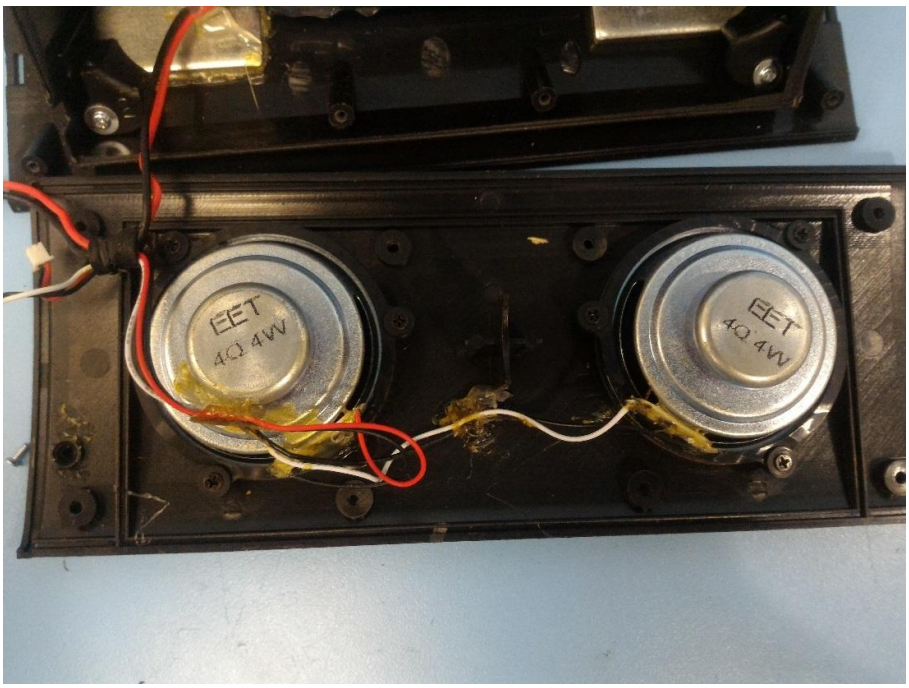
Appendix A





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Appendix A

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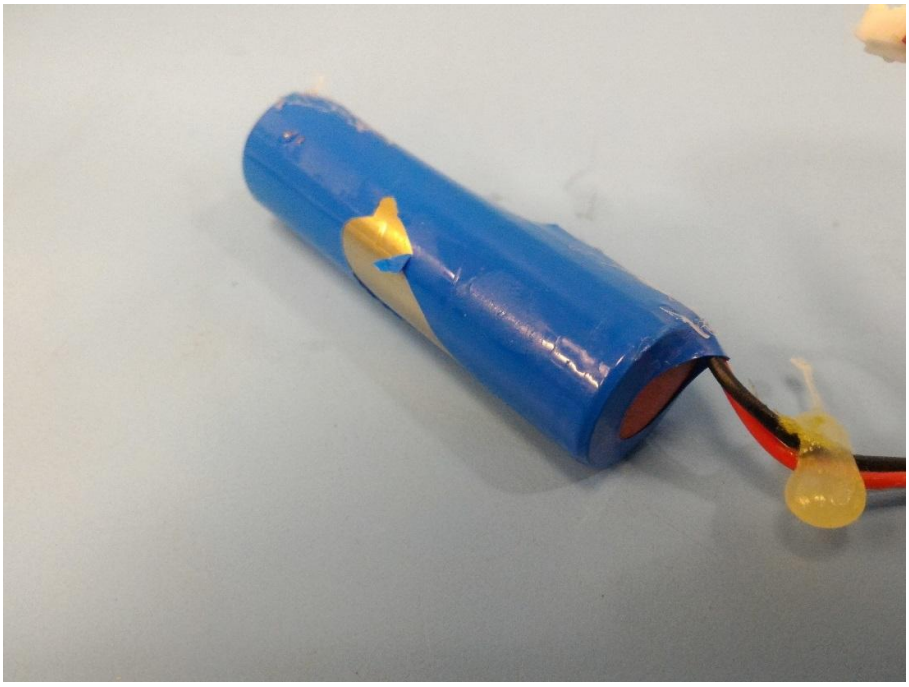
Appendix A



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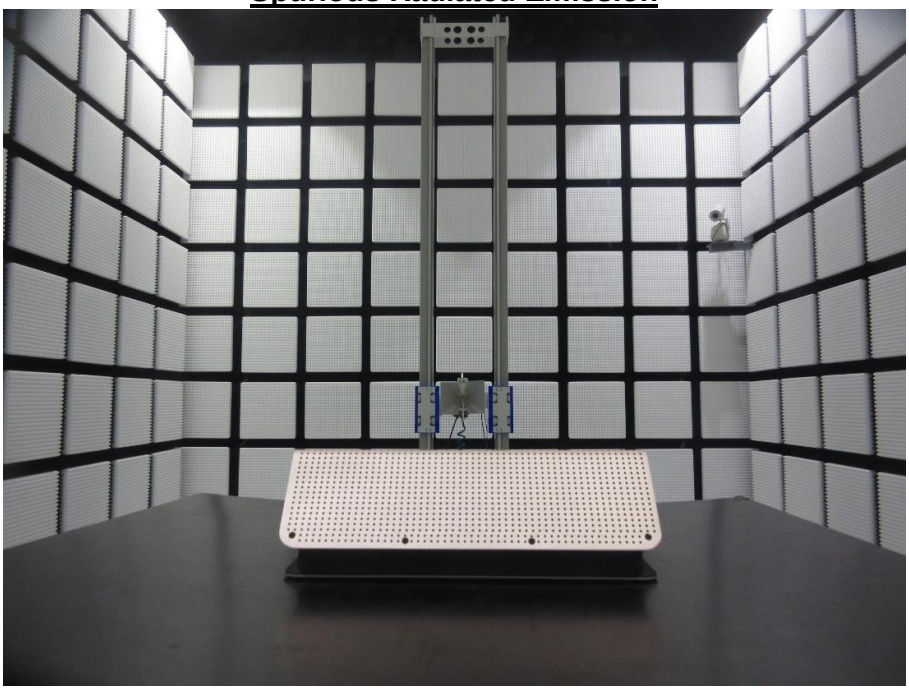
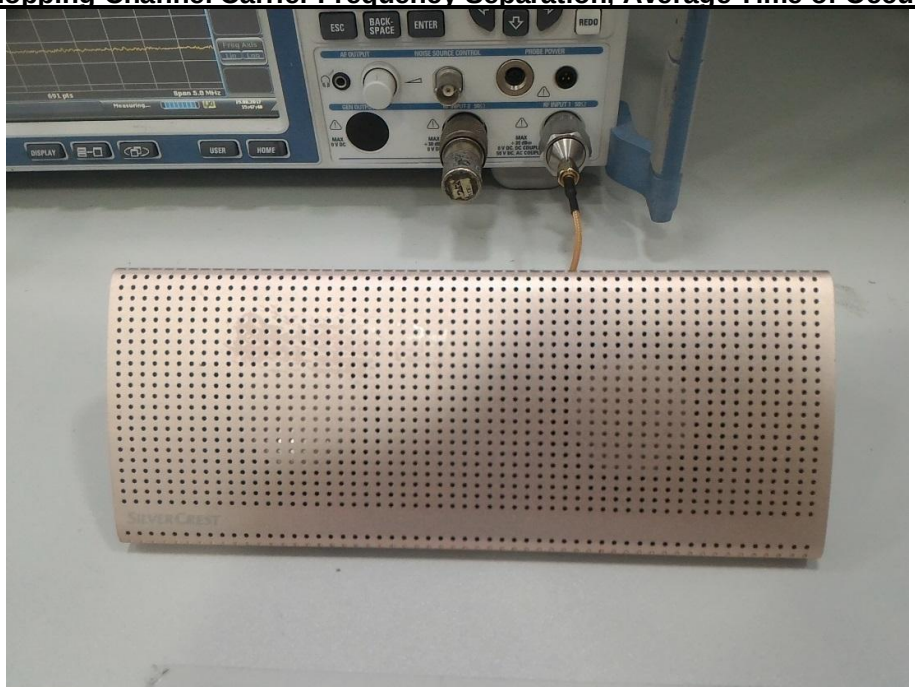
9 Appendix B - Setup Photographs of EUT

Spurious Radiated Emission



20dB & 99% Bandwidth, Peak Output Power,
Spurious Emissions at Antenna Terminals,
100kHz Bandwidth of band edges, Min. No. of Hopping Frequencies,
Min. Hopping Channel Carrier Frequency Separation, Average Time of Occupancy



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10 Appendix C - General Product Information

Radiofrequency radiation exposure evaluation

According to KDB 447498 D01v06 section 4.3.1, For frequencies between 100 MHz to 6GHz and test separation distances ≤ 50 mm, the Numeric threshold is determined as

Step a)
[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR

>> The fundamental frequency of the EUT is 2402-2480MHz,
the test separation distance is ≤ 50mm.
(Manufacturer specified the separation distance is: 5mm)

Step a)
>> Numeric threshold (2402MHz), mW / 5mm * √2.402GHz ≤ 3.0
Numeric threshold (2402MHz) ≤ 9.678mW

>> Numeric threshold (2440MHz), mW / 5mm * √2.441GHz ≤ 3.0
Numeric threshold (2440MHz) ≤ 9.601mW

>> Numeric threshold (2480MHz), mW / 5mm * √2.480GHz ≤ 3.0
Numeric threshold (2480MHz) ≤ 9.525mW

>> The power of EUT measured (2402MHz) is: 1.48dBm = 1.406mW
The power of EUT measured (2440MHz) is: 1.11dBm = 1.291mW
The power of EUT measured (2480MHz) is: 0.69dBm = 1.172mW
Which is smaller than the Numeric threshold.
Therefore, the device is exempt from stand-alone SAR test requirements.

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Appendix C

LIDL US LLC. 3500 S Clark Street, Arlington, VA 22202

To: TÜV SÜD HKG Ltd.

Attention: **Mr. Edmond Fung**
From: *Lidl US LLC.* Date: August 17, 2017
Fax No: Total Page (Cover Included): 1

Declaration Letter

Subject: Declaration Letter for Model Number

We: ***Lidl US LLC.***

Officially notify TÜV SÜD HKG Ltd. that the <<Additional Model>> have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction, with <<PRODUCT>>, <<Main Test Model>>.
The difference lies only on different color of the different models.

<<Additional Model >>: HG01335A, HG01335B

<<Main Test Model >>: HG01335C

<<Product>>: Bluetooth Speaker

Applicant: ***Lidl US LLC.***

08/17/2017
(Date)

David Matter_____
(Applicant's authorized signature and company Chop)

file: declaration letter-template

Page 1 of 1