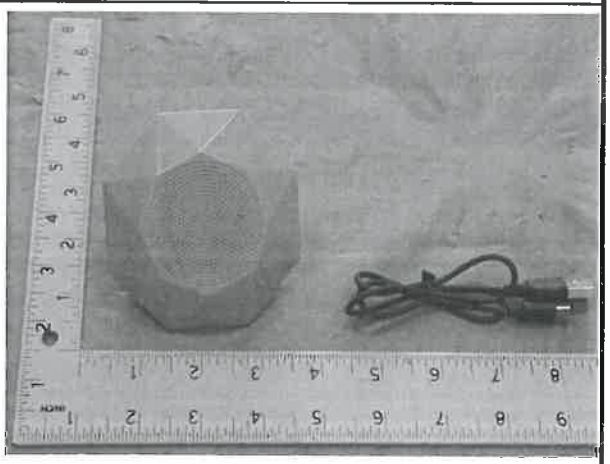
Prüfbericht-Nr.: *Test report No.:*	**50072296 001**	**Auftrags-Nr.:** *Order No.:*	164082101	Seite 1 von 29 *Page 1 of 29*
Kunden-Referenz-Nr.: *Client reference No.:*	N/A	**Auftragsdatum:** *Order date.:*	20.12.2016	
Auftraggeber: *Client:*	**THUMBS UP(UK) LTD** Unit L, Braintree Industrial Estate, Brain Tree Road, South Ruislip, HA4 0EJ, United Kingdom			
Prüfgegenstand: *Test item:*	Diamond Bluetooth Speaker			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	DIABTSPKP-PRM, DIABTSPKW-PRM (PRIMARK)			
Auftrags-Inhalt: *Order content:*	FCC approval			
Prüfgrundlage: *Test specification:*	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209 FCC KDB Publication 447498 v06 CFR47 FCC Part 15: Subpart B Section 15.107 CFR47 FCC Part 15: Subpart B Section 15.109			
Wareneingangsdatum: *Date of receipt:*	20.12.2016			
Prüfmuster-Nr.: *Test sample No.:*	A000480801-001 to A000480801-003			
Prüfzeitraum: *Testing period:*	19.01.2017 - 22.02.2017			
Ort der Prüfung: *Place of testing:*	Shenzhen Accurate Technology Co., Ltd.			
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: *Test result*:*	Pass			



geprüft von / *tested by:*

Datum *Date*	Name/Stellung *Name/Position*	Unterschrift *Signature*
21.03.2017	Alex Lan / Project Engineer	

kontrolliert von / *reviewed by:*

Datum *Date*	Name/Stellung *Name/Position*	Unterschrift *Signature*
21.03.2017	Owen Tian / Technical Certifier	

Sonstiges / *Other:*

FCC ID: 2AHHEDIABTSPKPRM

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery:*	Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged:*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhalt
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	1 = very good	2 = good	3 = satisfactory	4 = sufficient	5 = poor
	P(ass) = passed a.m. test specifications(s)		F(ail) = failed a.m. test specifications(s)	N/A = not applicable	N/T = not tested

TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT
RESULT: Passed

5.1.2 PEAK OUTPUT POWER
RESULT: Passed

5.1.3 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100KHZ BANDWIDTH
RESULT: Passed

5.1.4 SPURIOUS EMISSION
RESULT: Passed

5.1.5 20DB BANDWIDTH
RESULT: Passed

5.1.6 FREQUENCY SEPARATION
RESULT: Passed

5.1.7 NUMBER OF HOPPING FREQUENCY
RESULT: Passed

5.1.8 TIME OF OCCUPANCY
RESULT: Passed

5.1.9 CONDUCTED EMISSIONS
RESULT: Passed

5.1.10 RADIATED EMISSION
RESULT: Passed

6.1.1 ELECTROMAGNETIC FIELDS
RESULT: Pass

Contents

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:
Appendix 1: Test Result

2 Test Sites

2.1 Test Facilities

Shenzhen Accurate Technology Co., Ltd.

F1, Bldg. A, Changyuan New Meterial Port, Keyuan Rd., Science & Industry Park Nanshan District, Shenzhen 518057, P.R. China

FCC Registration No.: 752051

Test site Industry Canada No.: 5077A-2

The tests at the test site have been conducted under the supervision of a TÜV engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Spurious emission and Radiated emission				
Spectrum Analyzer	Rohde&Schwarz	FSV40	101495	2018-01-06
Test Receiver	Rohde&Schwarz	ESCS30	100307	2018-01-06
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	2018-01-09
Loop Antenna	Schwarzbeck	FMZB1516	1516131	2018-01-09
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	2018-01-09
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	2018-01-09
RF Switching Unit+PreAMP	Compliance Direction	RSU-M2	38322	2018-01-06
Pre-Amplifier	Rohde&Schwarz	CBLU11835 40-01	3791	2018-01-06
Radio Test Suite				
Spectrum Analyzer	Rohde & Schwarz	FSV40	101495	2018-01-06
Conducted Emission				
Test Receiver	Rohde & Schwarz	ESCS30	100307	2018-01-06
L.I.S.N.	Schwarzbeck	NLSK8126	8126431	2018-01-06
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100815	2018-01-06
50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283933	2018-01-06

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements are ±3dB.

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix 1 of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The Shenzhen Accurate Technology Co., Ltd. test facility located at F1, Bldg. A, Changyuan New Meterial Port, Keyuan Rd., Science & Industry Park Nanshan District, Shenzhen 518057, P.R. China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is Diamond Bluetooth Speaker which supports Bluetooth function.
According to the declaration of the applicant, the electrical circuit design, PCB layout and components used are identical for all models, only the model name and appearance are different.
For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Rating of EUT

Kind of Equipment:	Diamond Bluetooth Speaker
Type Designation:	DIABTSPKP-PRM, DIABTSPKW-PRM
Trade Mark:	PRIMARK
FCC ID	2AHHEDIABTSPKPRM

Table 3: Technical Specification of Bluetooth (BDR & EDR)

Technical Specification	**Value**
Operating Frequency band	2402 – 2480 MHz
Bluetooth Core Version	4.1, single mode
Channel Number	79 channels
Channel separation	1MHz
Extreme Temperature Range	-20ºC to +55ºC
Operating Voltage	DC 3.7V, 200mAh via built-in lithium Battery DC 5V, 500mA via Micro USB interface for Charging
Battery	Model: WHT502030 Ratings: 3.7V, 200mAh, 0.74Wh
Modulation	GFSK, 8DPSK, π/4DQPSK
Antenna Type	Internal Antenna, Non-User Replaceable
Antenna Gain	0dBi

Table 4: RF channel and frequency of Bluetooth (BDR & EDR mode)

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402.00	20	2422.00	40	2442.00	60	2462.00
1	2403.00	21	2423.00	41	2443.00	61	2463.00
2	2404.00	22	2424.00	42	2444.00	62	2464.00
3	2405.00	23	2425.00	43	2445.00	63	2465.00
4	2406.00	24	2426.00	44	2446.00	64	2466.00
5	2407.00	25	2427.00	45	2447.00	65	2467.00
6	2408.00	26	2428.00	46	2448.00	66	2468.00
7	2409.00	27	2429.00	47	2449.00	67	2469.00
8	2410.00	28	2430.00	48	2450.00	68	2470.00
9	2411.00	29	2431.00	49	2451.00	69	2471.00
10	2412.00	30	2432.00	50	2452.00	70	2472.00
11	2413.00	31	2433.00	51	2453.00	71	2473.00
12	2414.00	32	2434.00	52	2454.00	72	2474.00
13	2415.00	33	2435.00	53	2455.00	73	2475.00
14	2416.00	34	2436.00	54	2456.00	74	2476.00
15	2417.00	35	2437.00	55	2457.00	75	2477.00
16	2418.00	36	2438.00	56	2458.00	76	2478.00
17	2419.00	37	2439.00	57	2459.00	77	2479.00
18	2420.00	38	2440.00	58	2460.00	78	2480.00
19	2421.00	39	2441.00	59	2461.00		

3.3 Independent Operation Modes

The basic operation modes are:

A. On, Bluetooth Transmitting mode (BDR & EDR)
   1. low channel
   2. middle channel
   3. high channel

B. On, Bluetooth hopping mode
C. On, Play with Aux-in
D. Charging
E. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- Technical Description
- PCB Layout
- Photo Document
- Circuit Diagram
- Instruction Manual
- Rating Label

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.4: 2014 and ANSI C63.10: 2013.
According to section 3.1, all tests were applied on model DIABTSPKP-PRM in this test report.

4.3 Special Accessories and Auxiliary Equipment

The EUT was tested with following accessories:

Description	Manufacturer	Type	S/N
iPhone6S PLUS	Apple	ML6D2 CH/A	C35QJ76JGRWM
Notebook	LENOVO	ThinkPad X240	N/A
Printer	HP	HP LaserJet 1015	CNFG030424

4.4 Countermeasures to achieve EMC Compliance

The test sample, which has been tested, contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

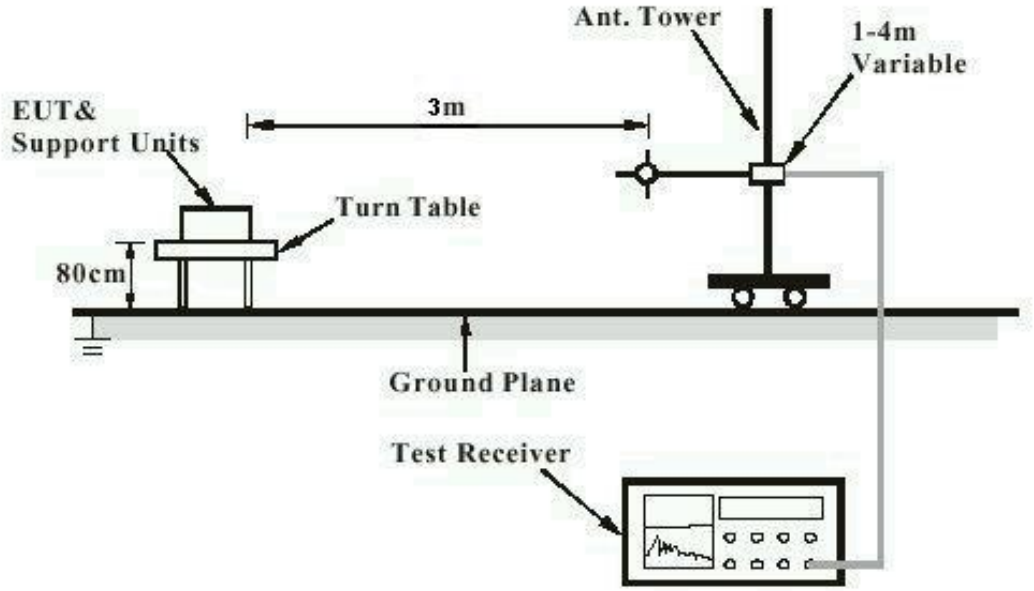


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

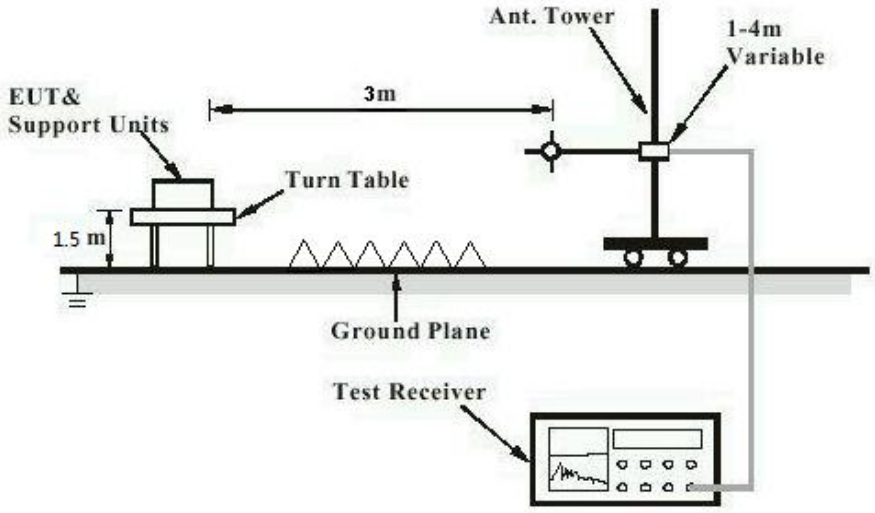


Diagram of Measurement Equipment Configuration for Mains Conduction Measurement

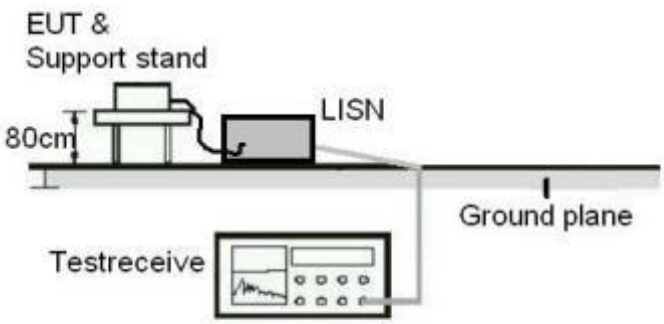
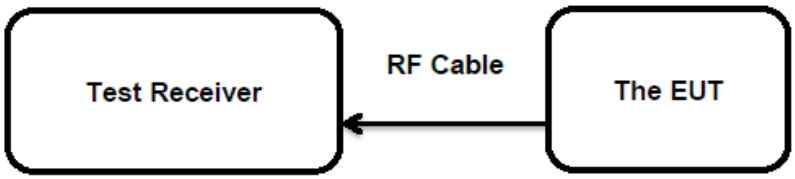


Diagram of Measurement Equipment Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Passed**

Test standard	:	FCC Part 15.247(b)(4) and Part 15.203
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is 0dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT photo for details.

5.1.2 Peak Output Power

RESULT: **Passed**

Test date	:	2017-02-07
Test standard	:	FCC Part 15.247(b)(1)
Basic standard	:	ANSI C63.10: 2013
Limit	:	FHSS < 1 Watts
Kind of test site	:	Shielded room

Test setup

Test Channel	:	Low/ Middle/ High
Operation Mode	:	A
Ambient temperature	:	25℃
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

Table 5: Test result of Peak Output Power

Test Mode	Channel Frequency (MHz)	Measured Peak Output Power		Limit (W)
		(dBm)	(W)	
BDR	2402	-3.67	0.00043	< 1
	2441	-4.55	0.00035	
	2480	-5.32	0.00029	
EDR	2402	-3.82	0.00041	< 1
	2441	-4.74	0.00034	
	2480	-5.56	0.00028	

Note: The cable loss is taken into account in results.

5.1.3 Conducted spurious emissions measured in 100kHz Bandwidth

RESULT: **Passed**

Date of testing	:	2017-02-22
Test standard	:	FCC part 15.247(d)
Basic standard	:	ANSI C63.10: 2013
Limit	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	:	Shield room

Test setup

Test Channel	:	Low/ High
Operation mode	:	A
Ambient temperature	:	25℃
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

All emissions are more than 20dB below fundamental, details refer to Appendix 1, and compliance is achived as well.

5.1.4 Spurious Emission

RESULT: **Passed**

Date of testing	:	2017-02-17
Test standard	:	FCC part 15.247(d) FCC Part 15.205
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.247(d)
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Test Channel	:	Low/ Middle/ High
Operation mode	:	A
Ambient temperature	:	25℃
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

Remark:
During the pretest the EUT was rotated through three orthogonal axes to determine the attitude that maximizes the emissions. After that the EUT was manually handled to find the orientation that has the maximum emission, which is the orientation shown in the test setup photos.
Testing was carried out within frequency range 9 kHz to the tenth harmonics.

For details refer to Appendix 1.

5.1.5 20dB Bandwidth

RESULT: **Passed**

Date of testing	:	2017-02-07
Test standard	:	FCC Part 15.247(a)(1)
Basic standard	:	ANSI C63.10: 2013
Kind of test site	:	Shielded room

Test setup

Test Channel	:	Low/ Middle/ High
Operation Mode	:	A
Ambient temperature	:	25℃
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

Table 6: Test result of 20dB Bandwidth

Test Mode	Channel Frequency (MHz)	20dB Bandwidth (kHz)	2/3 of 20dB Bandwidth (kHz)	Limit (MHz)
BDR	2402	1085.4	723.600	/
	2441	1081.0	720.667	
	2480	1081.0	720.667	
EDR	2402	1332.8	888.533	/
	2441	1371.9	914.600	
	2480	1367.6	911.733	

5.1.6 Frequency Separation

RESULT: **Passed**

Date of testing	:	2017-02-07
Test standard	:	FCC part 15.247(a)(1)
Basic standard	:	ANSI C63.4: 2003
Limit	:	≥ 25kHz or 2/3 of 20dB bandwidth, whichever is greater

Test setup

Test Channel	:	Low/ Middle/ High
Operation Mode	:	B
Ambient temperature	:	25℃
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

Table 7: Test result of Frequency Separation

Channel	Channel Frequency (MHz)	Measured Channel Separation (KHz)	Limit (kHz)	Result
Low Channel	2402	1002.9	≥ 25kHz or 2/3 of 20dB bandwidth	Pass
Adjacency Channel	2403			
Mid Channel	2441	1002.9	≥ 25kHz or 2/3 of 20dB bandwidth	Pass
Adjacency Channel	2442			
High Channel	2480	1002.9	≥ 25kHz or 2/3 of 20dB bandwidth	Pass
Adjacency Channel	2479			

5.1.7 Number of hopping frequency

RESULT: **Passed**

Date of testing	:	2017-02-07
Test standard	:	FCC part 15.247(a)(1)(iii)
Basic standard	:	ANSI C63.10: 2013
Limits	:	≥ 15 non-overlapping channels
Kind of test site	:	Shield room

Test setup

Test Channel	:	Low/ Middle/ High
Operation Mode	:	B
Ambient temperature	:	25℃
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

Table 8: Test result of Number of hopping frequency

Frequency Range	Measured Quantity of Hopping Channel	Limit	Result
2400 to 2483.5 MHz	79	≥15	Pass

5.1.8 Time of Occupancy

RESULT: **Passed**

Date of testing	:	2017-02-07
Test standard	:	FCC part 15.247(a)(1)(iii)
Basic standard	:	ANSI C63.10: 2013
Limits	:	<0.4s
Kind of test site	:	Shield room

Test setup

Test Channel	:	Low/ Middle/ High
Operation Mode	:	A
Ambient temperature	:	25℃
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

Table 9: Test result of Time of Occupancy

Test Mode	Channel	Data Packet	Pulse width (ms)	Measured Dwell time(s)	Limit (s)
BDR mode	2402	DH1	0.399	0.128	< 0.4s
		DH3	1.681	0.269	
		DH5	2.978	0.318	
	2441	DH1	0.384	0.123	
		DH3	1.739	0.278	
		DH5	3.065	0.327	
	2480	DH1	0.442	0.141	
		DH3	1.739	0.278	
		DH5	2.957	0.315	
EDR mode	2402	3DH1	0.384	0.123	
		3DH3	1.739	0.278	
		3DH5	3.044	0.325	
	2441	3DH1	0.442	0.141	
		3DH3	1.681	0.269	
		3DH5	2.978	0.318	
	2480	3DH1	0.391	0.125	
		3DH3	1.739	0.278	
		3DH5	3.022	0.322	

Note:

Dwell time = Pulse width x (Hopping rate / Number of channels) x Period

Period = 0.4 (seconds/ channel) x 79 (channel) = 31.6 seconds

5.1.9 Conducted emissions

RESULT: **Passed**

Date of testing	:	2017-02-20
Test standard	:	FCC Part 15.107(a) & FCC Part 15.207(a)
Basic standard	:	ANSI C63.10: 2013 & ANSI C63.4: 2014
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.207(a) & FCC Part 15.207(a)
Kind of test site	:	Shield room

Test setup

Input Voltage	:	AC 120V, 60Hz via AC/DC Adapter of Notebook
Operation Mode	:	B+D, C+D
Earthing	:	Not connected
Ambient temperature	:	25℃
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

For details refer to Appendix 1.

5.1.10 Radiated Emission

RESULT: **Passed**

Date of testing	:	2016-02-08
Test standard	:	FCC Part 15.109(a) & FCC Part 15.209(a)
Basic standard		ANSI C63.4: 2014
Frequency range	:	30 - 6000MHz
Classification	:	Class B
Limit	:	FCC Part 15.109(a) & FCC Part 15.209(a)
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Input Voltage	:	DC 3.7V, 200mAh via built-in lithium Battery DC 5V, 500mA via Micro USB interface for Charging
Operation mode	:	C, D
Earthing	:	Not connected
Ambient temperature	:	23℃
Relative humidity	:	48%
Atmospheric pressure	:	101 kPa

Test data refer to Appendix 1.

6 Safety Human Exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

RESULT: **Pass**

Test Specification

Test standard : FCC KDB Publication 447498 v06

Measurement Record:

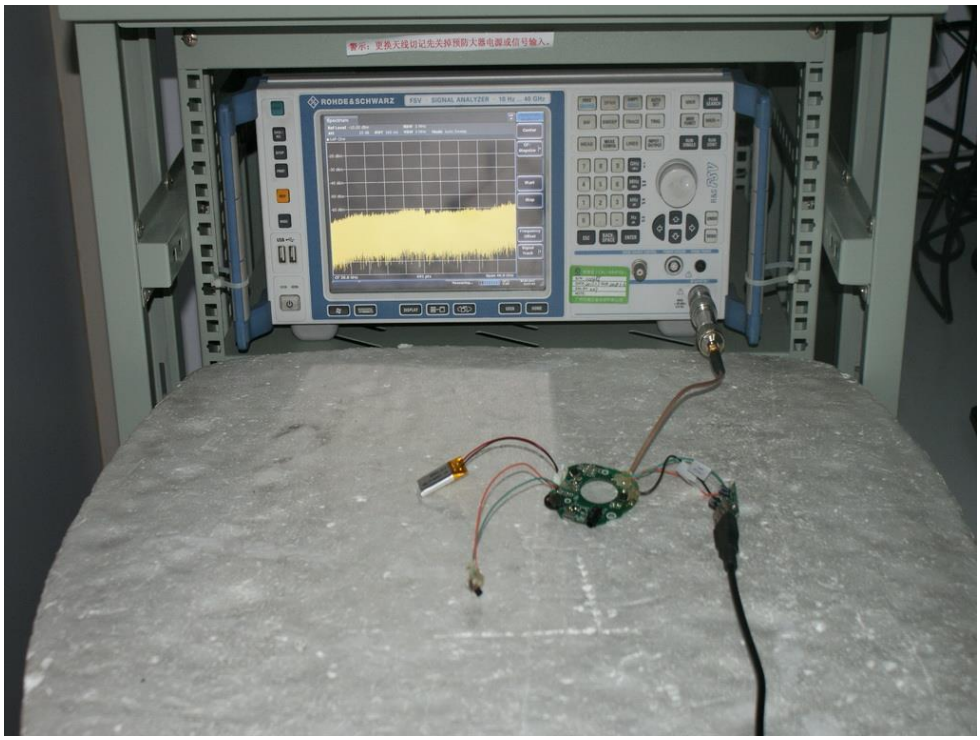
The minimum distance for the EUT is 5mm.

Since maximum peak output power of the transmitter is -3.67 dBm ≈ 0.43 mW <10 mW.

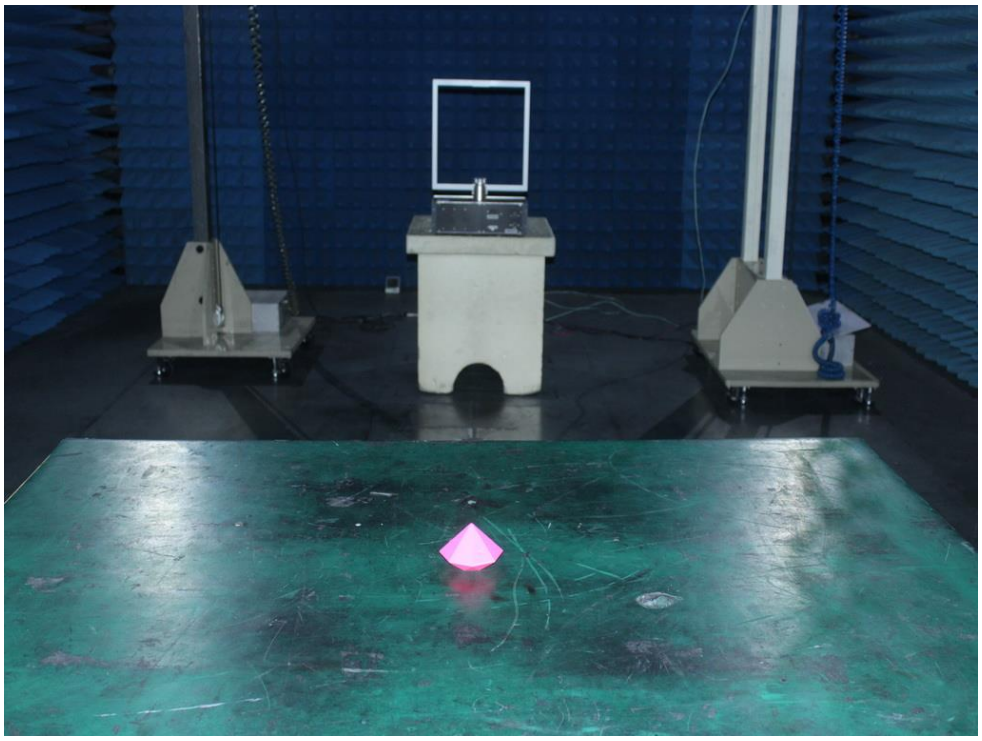
Hence the EUT is excluded from SAR evaluation according to FCC KDB Publication 447498 D01 General RF Exposure Guidance v06.

7 Photographs of the Test Set-Up

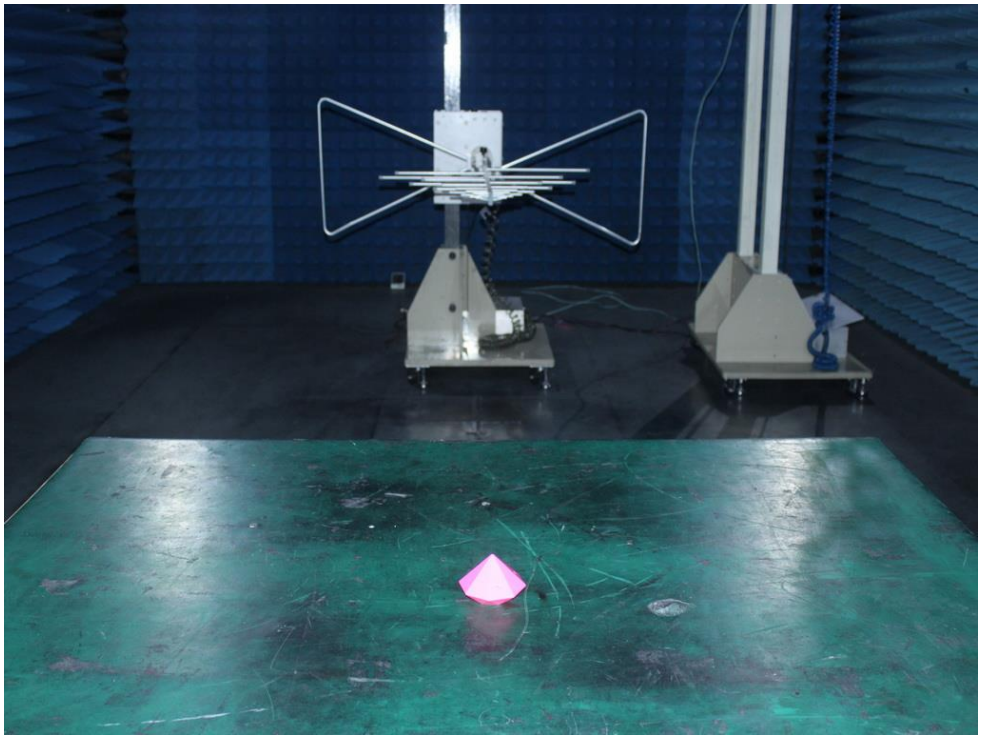
Photograph 1: Set-up for Radio Spectrum Test



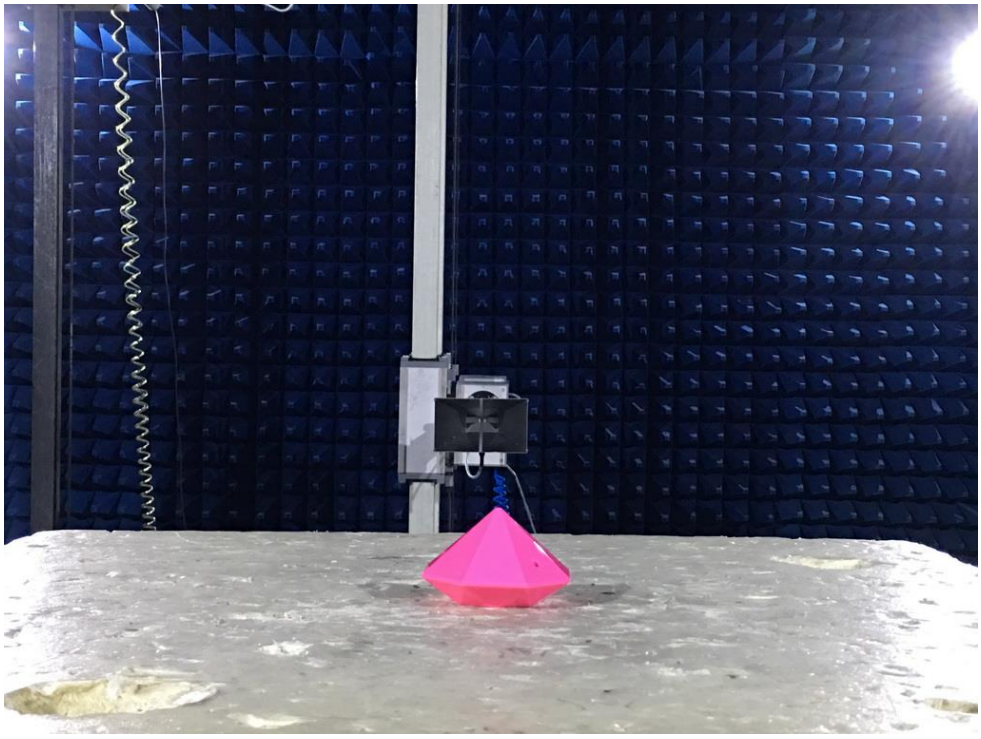
Photograph 2: Set-up for Spurious Emissions (9kHz-30MHz)



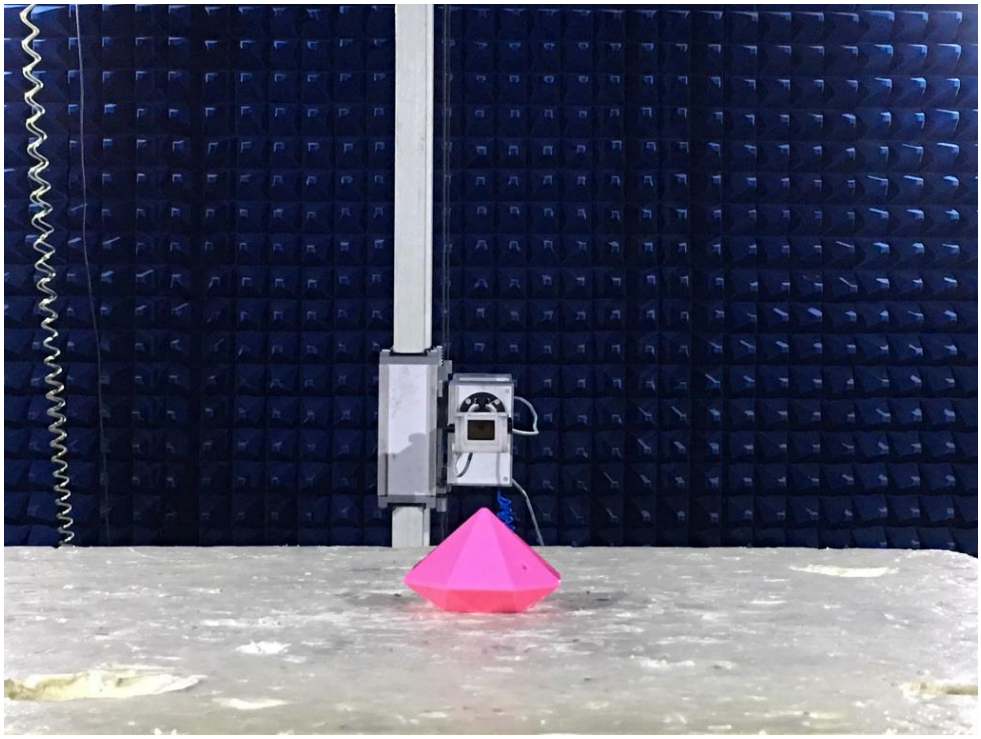
Photograph 3: Set-up for Spurious Emissions (30MHz-1GHz)



Photograph 4: Set-up for Spurious Emissions (1GHz-18GHz)

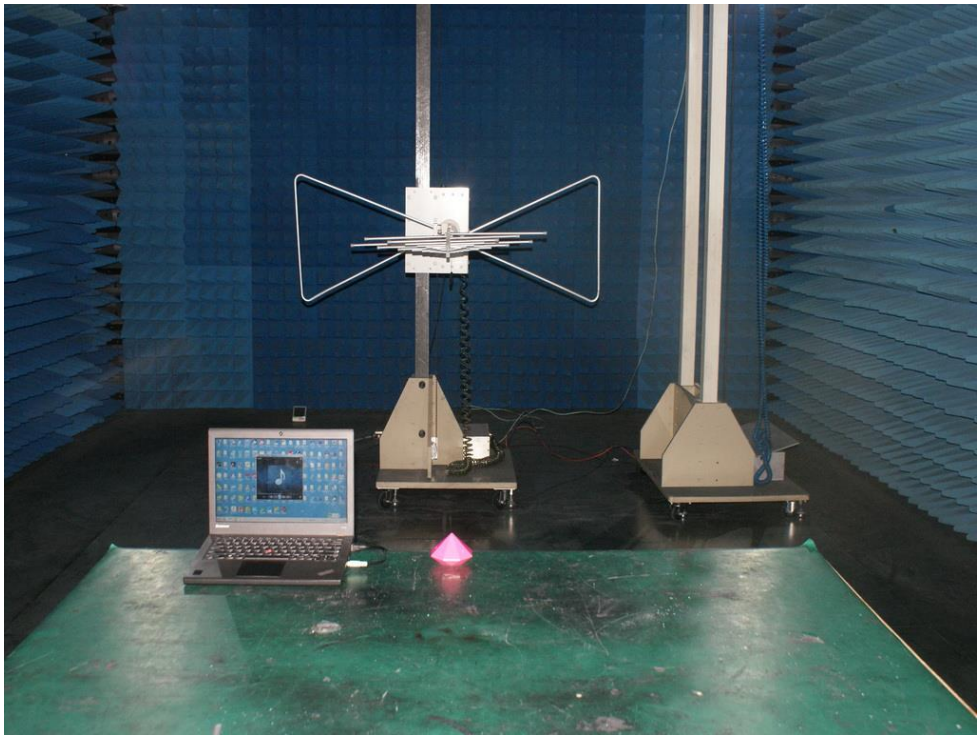


Photograph 5: Set-up for Spurious Emissions (18GHz-26GHz)



Photograph 6: Set-up for Conducted Emissions

Photograph 7: Set-up for Radiated Emissions, below 1GHz



Photograph 8: Set-up for Radiated Emissions, above 1GHz

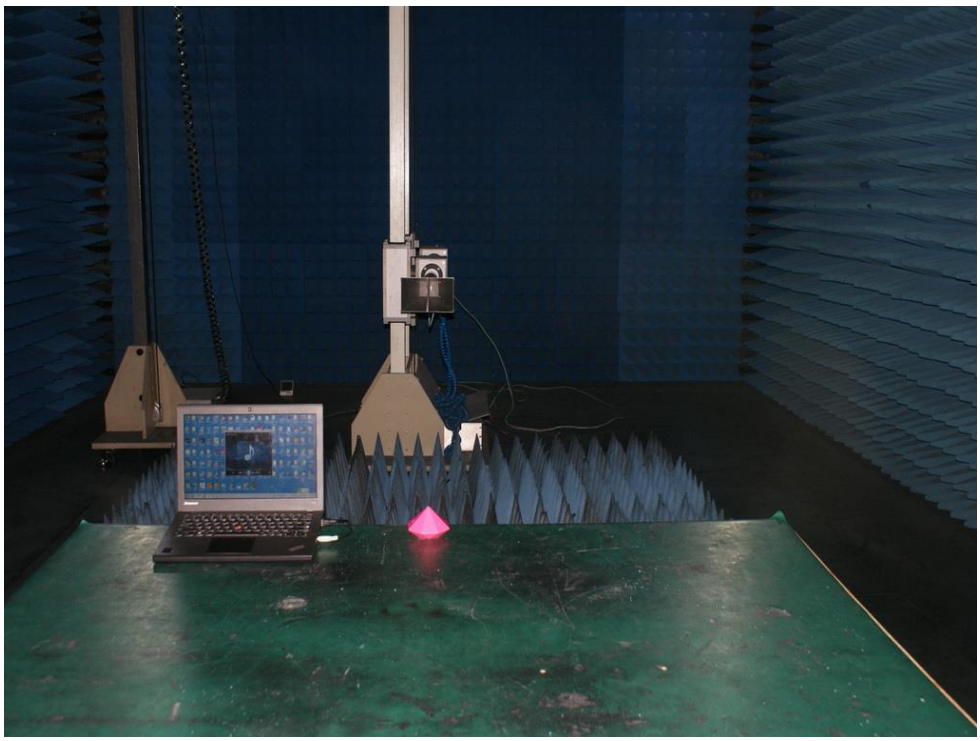


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Figure 1: Test figure of spurious emissions, mode A.1, X polarity (9kHz – 30MHz)

ACCURATE TECHNOLOGY CO.,LTD

FCC Class B 3m Radiated

EUT:	Diamond Bluetooth Speaker M/N:DIABTSPKPPRM
Manufacturer:	THUMBS UP(UK) LTD
Operating Condition:	TX 2402MHz
Test Site:	2# Chamber
Operator:	LGWADE
Test Specification:	DC 3.7V
Comment:	X
Start of Test:	2017-2-17 /

SCAN TABLE: "LFRE Fin"

Short Description: _SUB_STD_VTERM2 1.70

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M

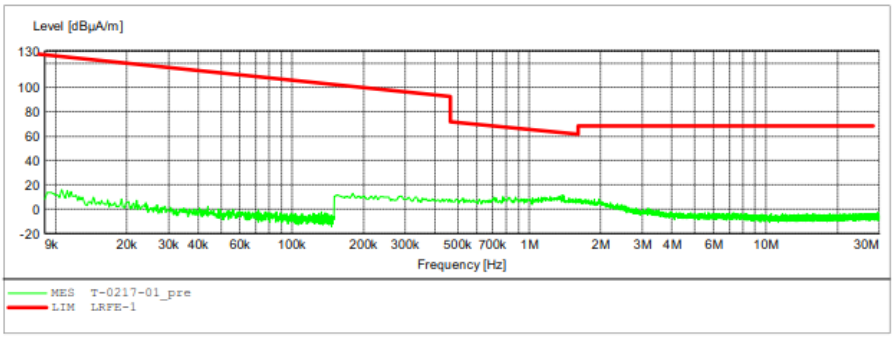


Figure 2: Test figure of spurious emissions, mode A.1, Y polarity (9kHz – 30MHz)

ACCURATE TECHNOLOGY CO.,LTD

FCC Class B 3m Radiated

EUT:	Diamond Bluetooth Speaker M/N:DIABTSPKPPRM
Manufacturer:	THUMBS UP(UK) LTD
Operating Condition:	TX 2402MHz
Test Site:	2# Chamber
Operator:	LGWADE
Test Specification:	DC 3.7V
Comment:	Y
Start of Test:	2017-2-17 /

SCAN TABLE: "LFRE Fin"

Short Description: _SUB_STD_VTERM2 1.70

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M

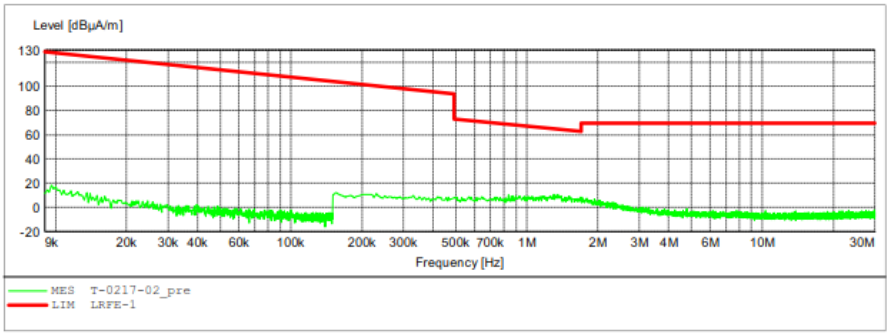


Figure 3: Test figure of spurious emissions, mode A.1, Z polarity (9kHz – 30MHz)

ACCURATE TECHNOLOGY CO.,LTD

FCC Class B 3m Radiated

EUT:	Diamond Bluetooth Speaker M/N:DIABTSPKPPRM
Manufacturer:	THUMBS UP(UK) LTD
Operating Condition:	TX 2402MHz
Test Site:	2# Chamber
Operator:	LGWADE
Test Specification:	DC 3.7V
Comment:	Z
Start of Test:	2017-2-17 /

SCAN TABLE: "LFRE Fin"

Short Description: _SUB_STD_VTERM2 1.70

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M

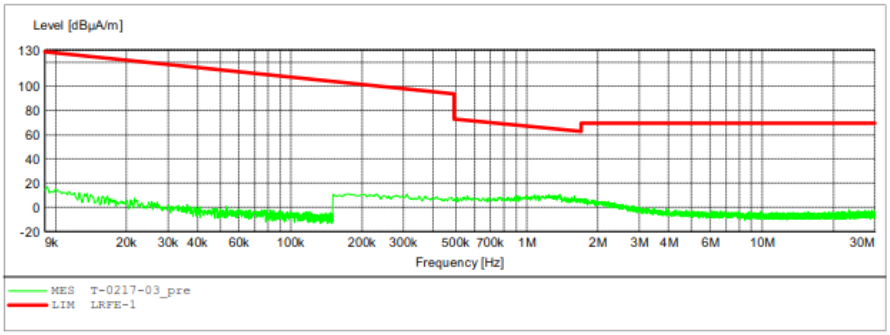
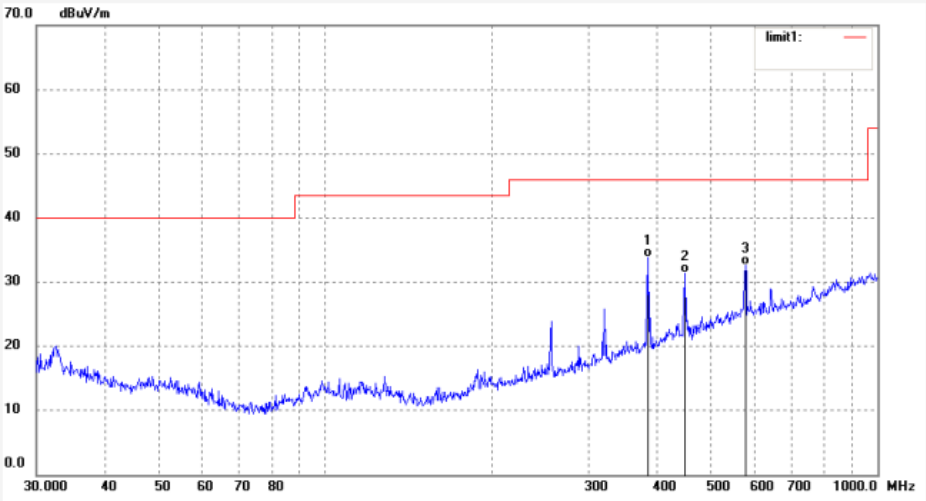


Figure 4: Test figure of spurious emissions, mode A.1, Horizontal polarity (30MHz – 1GHz)

ATC®
ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: LGW2017 #1084	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 3.7V
Test item: Radiation Test	Date: 17/02/08/
Temp.(C)/Hum.(%) 23 C / 48 %	Time:
EUT: Diamond Bluetooth Speaker	Engineer Signature: LGWADE
Mode: TX 2402MHz	Distance: 3m
Model: DIABTSPKPPRM	
Manufacturer: THUMBS UP(UK) LTD	

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	383.9318	40.73	-6.94	33.79	46.00	-12.21	QP			
2	447.9821	36.74	-5.38	31.36	46.00	-14.64	QP			
3	576.6443	35.31	-2.60	32.71	46.00	-13.29	QP			

Figure 5: Test figure of spurious emissions, mode A.1, Vertical polarity (30MHz – 1GHz)

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ACCURATE TECHNOLOGY CO., LTD.
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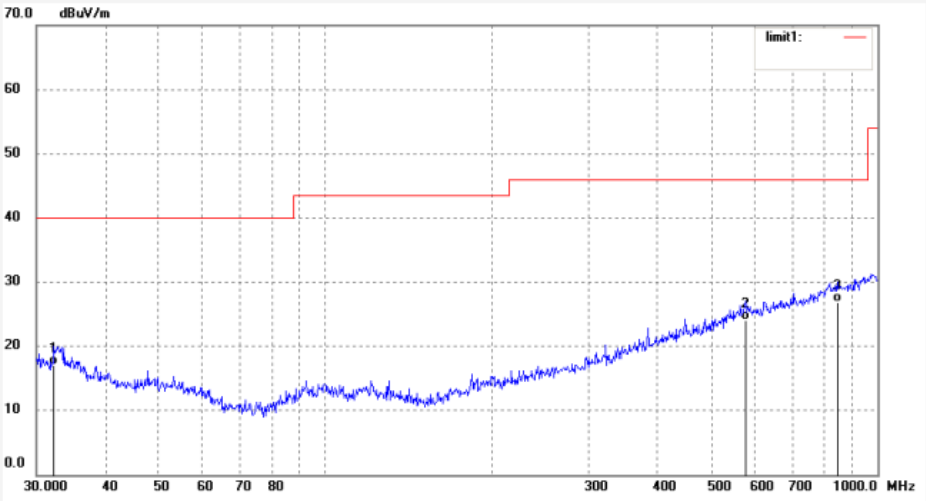
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: LGW2017 #1085
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Diamond Bluetooth Speaker
Mode: TX 2402MHz
Model: DIABTSPKPPRM
Manufacturer: THUMBS UP(UK) LTD

Polarization: Vertical
Power Source: DC 3.7V
Date: 17/02/08/
Time:
Engineer Signature: LGWADE
Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.2924	26.71	-9.61	17.10	40.00	-22.90	QP			
2	576.6443	26.67	-2.60	24.07	46.00	-21.93	QP			
3	845.0878	25.41	1.53	26.94	46.00	-19.06	QP			

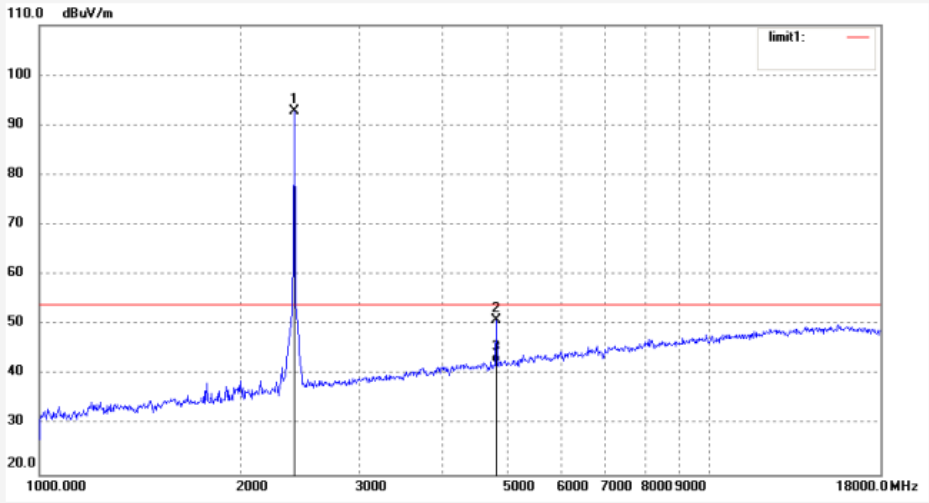
Figure 6: Test figure of spurious emissions, mode A.1, Horizontal polarity (1GHz –18GHz)

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: LGW2017 #1052
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Diamond Bluetooth Speaker
Mode: TX 2402MHz
Model: DIABTSPKPPRM
Manufacturer: THUMBS UP(UK) LTD

Polarization: Horizontal
Power Source: DC 3.7V
Date: 17/02/08/
Time:
Engineer Signature: LGWADE
Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.000	94.29	-1.61	92.68	/	/	peak			
2	4804.025	45.99	4.90	50.89	74.00	-23.11	peak			
3	4804.025	37.44	4.90	42.34	54.00	-11.66	AVG			

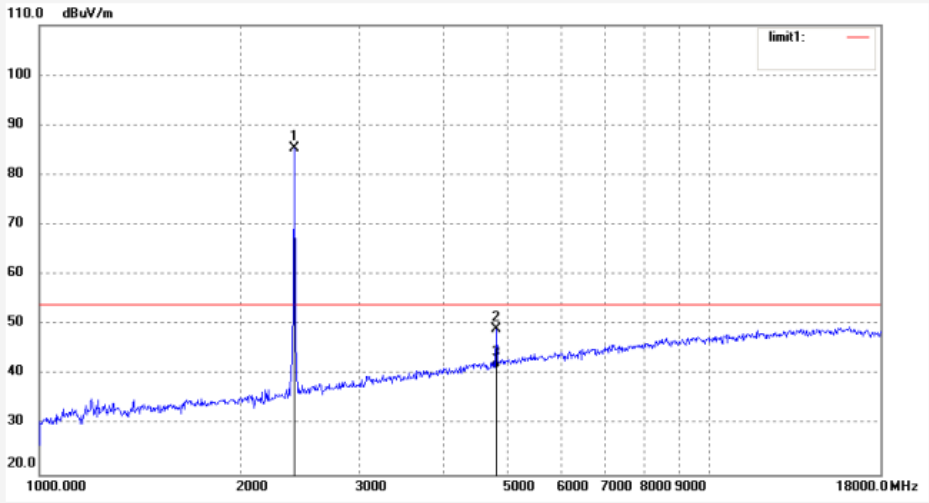
Figure 7: Test figure of spurious emissions, mode A.1, Vertical polarity (1GHz – 18GHz)

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: LGW2017 #1053
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Diamond Bluetooth Speaker
Mode: TX 2402MHz
Model: DIABTSPKPPRM
Manufacturer: THUMBS UP(UK) LTD

Polarization: Vertical
Power Source: DC 3.7V
Date: 17/02/08/
Time:
Engineer Signature: LGWADE
Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.000	86.90	-1.61	85.29	/	/	peak			
2	4804.027	44.32	4.90	49.22	74.00	-24.78	peak			
3	4804.027	36.44	4.90	41.34	54.00	-12.66	AVG			

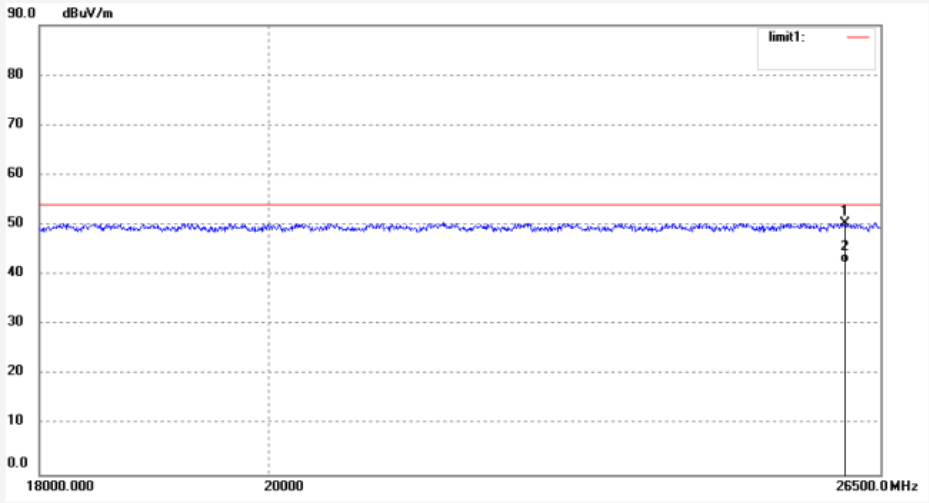
Figure 8: Test figure of spurious emissions, mode A.1, Horizontal polarity (18GHz –25GHz)

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: LGW2017 #1063	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 3.7V
Test item: Radiation Test	Date: 17/02/08/
Temp.(C)/Hum.(%) 23 C / 48 %	Time:
EUT: Diamond Bluetooth Speaker	Engineer Signature: LGWADE
Mode: TX 2402MHz	Distance: 3m
Model: DIABTSPKPPRM	
Manufacturer: THUMBS UP(UK) LTD	

Note:



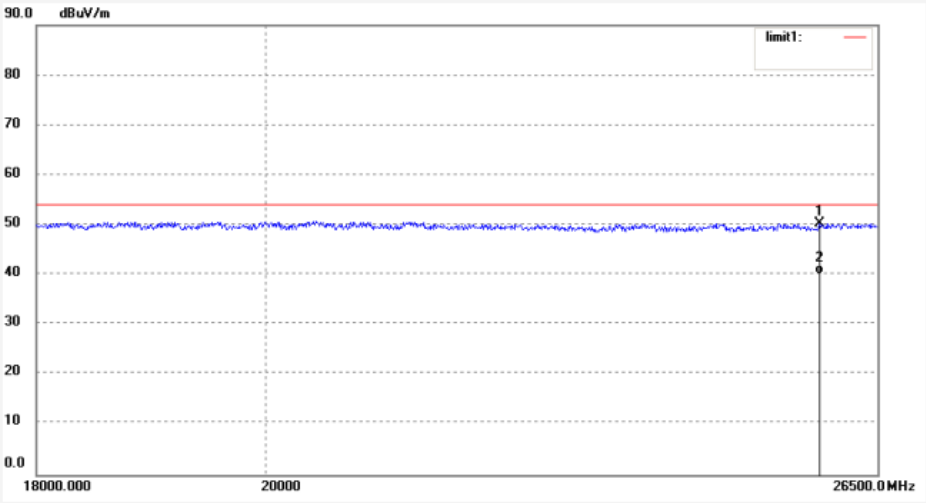
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	26072.999	10.09	40.28	50.37	74.00	-23.63	peak			
2	26072.999	2.06	40.28	42.34	54.00	-11.66	AVG			

Figure 9: Test figure of spurious emissions, mode A.1, Vertical polarity (18GHz – 25GHz)

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: LGW2017 #1062	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: DC 3.7V
Test item: Radiation Test	Date: 17/02/08/
Temp.(C)/Hum.(%) 23 C / 48 %	Time:
EUT: Diamond Bluetooth Speaker	Engineer Signature: LGWADE
Mode: TX 2402MHz	Distance: 3m
Model: DIABTSPKPPRM	
Manufacturer: THUMBS UP(UK) LTD	

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	25802.139	9.20	41.02	50.22	74.00	-23.78	peak			
2	25802.139	-0.78	41.02	40.24	54.00	-13.76	AVG			

Figure 10: Test figure of spurious emissions, mode A.2, X polarity (9kHz – 30MHz)

ACCURATE TECHNOLOGY CO.,LTD

FCC Class B 3m Radiated

EUT: Diamond Bluetooth Speaker M/N:DIABTSPKPPRM
Manufacturer: THUMBS UP(UK) LTD
Operating Condition: TX 2441MHz
Test Site: 2# Chamber
Operator: LGWADE
Test Specification: DC 3.7V
Comment: X
Start of Test: 2017-2-17 /

SCAN TABLE: "LFRE Fin"

Short Description: _SUB_STD_VTERM2 1.70

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M