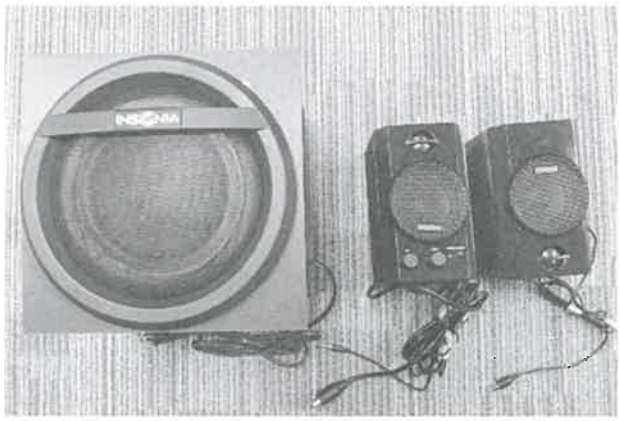
Prüfbericht-Nr.: *Test Report No.:*	**17035972 002**	**Auftrags-Nr.:** *Order No.:*	164014212	Seite 1 von 21 *Page 1 of 21*
Kunden-Referenz-Nr.: *Client Reference No.:*	N/A	**Auftragsdatum:** *Order date:*	12.05.2014	
Auftraggeber: *Client:*	Jazz Hipster Corporation 2Fd, No.512, Yuan-San Rd.C, hung-Ho City, Taipei Hsien, Taiwan			
Prüfgegenstand: *Test item:*	2.1 Bluetooth Desktop Speaker System			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	NS-PSB4521			
Auftrags-Inhalt: *Order content:*	FCC Certification(Class II Permissive Change)			
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 CFR47 FCC Part 15: Subpart B Section 15.107 CFR47 FCC Part 15: Subpart B Section 15.109 FCC KDB Publication 447498 v05r01		RSS-210 Issue 8 December 2010 RSS-Gen Issue 3 December 2010 RSS-102 Issue 4 March 2010 ICES-003 Issue 5 August 2012	

Wareneingangsdatum: *Date of receipt:*	12.05.2014
Prüfmuster-Nr.: *Test sample No.:*	A000062143
Prüfzeitraum: *Testing period:*	17.05.2014
Ort der Prüfung: *Place of testing:*	Accurate Technology Co., Ltd.
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.
Prüfergebnis*: *Test result*:*	Pass



geprüft von / *tested by:*

Tom Wang

Datum *Date*	Name / Stellung *Name / Position*	Unterschrift *Signature*
20.06.2014	Tom Wang/ Assistant Project Engineer	

kontrolliert von / *reviewed by:*

Datum *Date*	Name / Stellung *Name / Position*	Unterschrift *Signature*
20.06.2014	Sam Lin/Technical Certifier	

Sonstiges / *Other:*

This test report is for approval of Class II permissive change to approved model NS-PSB4521. Class II permissive change was made to NS-PSB4521 on non-radio circuit and PCB design, hence only EMC re-test was carried out. Refer to test resport 17035972 001 for previous detailed test results of radio spectrum requirements .

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 = mangelhaft
	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 specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

TEST SUMMARY

5.1.1 CONDUCTED EMISSIONS

RESULT: Pass

5.1.2 RADIATED EMISSIONS

RESULT: Pass

Contents

1. GENERAL REMARKS 4
1.1 COMPLEMENTARY MATERIALS 4
2. TEST SITES 4
2.1 TEST FACILITIES 4
2.2 LIST OF TEST AND MEASUREMENT INSTRUMENTS 5
2.3 TRACEABILITY 5
2.4 CALIBRATION 5
2.5 MEASUREMENT UNCERTAINTY 6
2.6 LOCATION OF ORIGINAL DATA 6
2.7 STATUS OF FACILITY USED FOR TESTING 6
3. GENERAL PRODUCT INFORMATION 7
3.1 PRODUCT FUNCTION AND INTENDED USE 7
3.2 RATINGS AND SYSTEM DETAILS 7
3.3 INDEPENDENT OPERATION MODES 7
3.4 NOISE GENERATING AND NOISE SUPPRESSING PARTS 8
3.5 SUBMITTED DOCUMENTS 8
4. TEST SET-UP AND OPERATION MODES 9
4.1 PRINCIPLE OF CONFIGURATION SELECTION 9
4.2 TEST OPERATION AND TEST SOFTWARE 9
4.3 SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT 9
4.4 COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE 9
4.5 TEST SETUP DIAGRAM 10
5. TEST RESULTS 11
5.1 EMISSIONS 11
5.1.1 Conducted emissions 11
5.1.2 Radiated emissions 14
6. PHOTOGRAPHS OF THE TEST SET-UP 19
7. LIST OF TABLES 21
8. LIST OF PHOTOGRAPHS 21

1. General Remarks

1.1 Complementary Materials

None.

2. Test Sites

2.1 Test Facilities

Accurate Technology Co., Ltd.

(FCC Registration No.: 752051)
(Test site Industry Canada No.: 5077A-2)

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

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
Conducted Emission				
Test Receiver	Rohde & Schwarz	ESCS30	100307	2015-01-11
L.I.S.N.	Schwarzbeck	NLSK8126	8126431	2015-01-11
L.I.S.N.	Rohde & Schwarz	ESH3-Z5	100310	2015-01-11
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100815	2015-01-11
50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283933	2015-01-11
RF Coaxial Cable	SUHNER	N-2m	No.3	2015-01-11
Radiated Emission				
Spectrum Analyzer	Agilent	E7405A	MY45115511	2015-01-11
Test Receiver	Rohde & Schwarz	ESCS30	100307	2015-01-11
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	2015-01-11
Loop Antenna	Schwarzbeck	FMZB1516	1516131	2015-01-11
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	2015-01-11
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	2015-01-11
50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	2015-01-11
RF Coaxial Cable	SUHNER	N-3m	No.8	2015-01-11
RF Coaxial Cable	RESENBERGER	N-3.5m	No.9	2015-01-11
RF Coaxial Cable	SUHNER	N-6m	No.10	2015-01-11
RF Coaxial Cable	RESENBERGER	N-12m	No.11	2015-01-11
RF Coaxial Cable	RESENBERGER	N-0.5m	No.12	2015-01-11
Pre-Amplifier	Rohde & Schwarz	CBLU1183540-01	3791	2015-01-11

2.3 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, 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

Table 2: Measurement Uncertainty

Parameter	Uncertainty
Conducted Emission	< ± 2.23 dB
Radiated Emission (below 1GHz)	< ± 4.42 dB
Radiated Emission (above 1GHz)	< ± 4.06 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

Accurate Technology Co., Ltd. Test facility located at F1, Bldg. A, Changyuan New Material Port Keyuan Rd., Science & Industry Park, Nanshan, Shenzhen, P.R. China and 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 a Bluetooth 2.1 speaker system used for audio entertainment in house or similar environment. It operates at 2.4GHz ISM frequency band.Class II permissive change was made to EUT on non-radio circuit and PCB design. The audio signal detection part was removed from the previous design and the Aux jack is equipped with detection function.
For details refer to the User Manual and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

Technical Specification	Value
Kind of Equipment	2.1 Bluetooth Desktop Speaker System
Type Designation	NS-PSB4521
FCC ID	TQYBSMS5322WA00
Bluetooth version	3.0 + EDR
Operating Frequency band	2402 – 2480MHz
Channel separation	1MHz
Extreme Temperature Range	-20~+45℃
Operation Voltage	AC 120V, 60Hz
Modulation	GFSK, 8DPSK, $\pi/4$ DQPSK
Antenna Gain	0dBi

3.3 Independent Operation Modes

The basic operation modes are:

A. On, Bluetooth mode
    a. Transmitting
    b. Receiving
B. On, AUX input
C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- Bill of Material
- PCB Layout
- Photo Document
- Circuit Diagram
- Instruction Manual
- Rating Label

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

Immunity: The equipment under test (EUT) was configured to have its highest possible susceptibility against the tested phenomena. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

For test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.4: 2009.
According on the model difference in chapter 3.1, only conducted emission and radiated emission was applied on model NS-PSB4521 with class II permissive change, for other test result, refer to test results in test report 17035972 001.

4.3 Special Accessories and Auxiliary Equipment

The EUT was tested together with the following accessories:

Description	Manufacturer	Part No.	S/N
iPod	Apple	A1238	8K039T1Y9ZU

The EUT was tested with following cables:

Interface(s)/Port(s):	Max. cable length, shielding	Cable classification
Line input	2 cores, non-shielded port, 3m	Audio Input

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

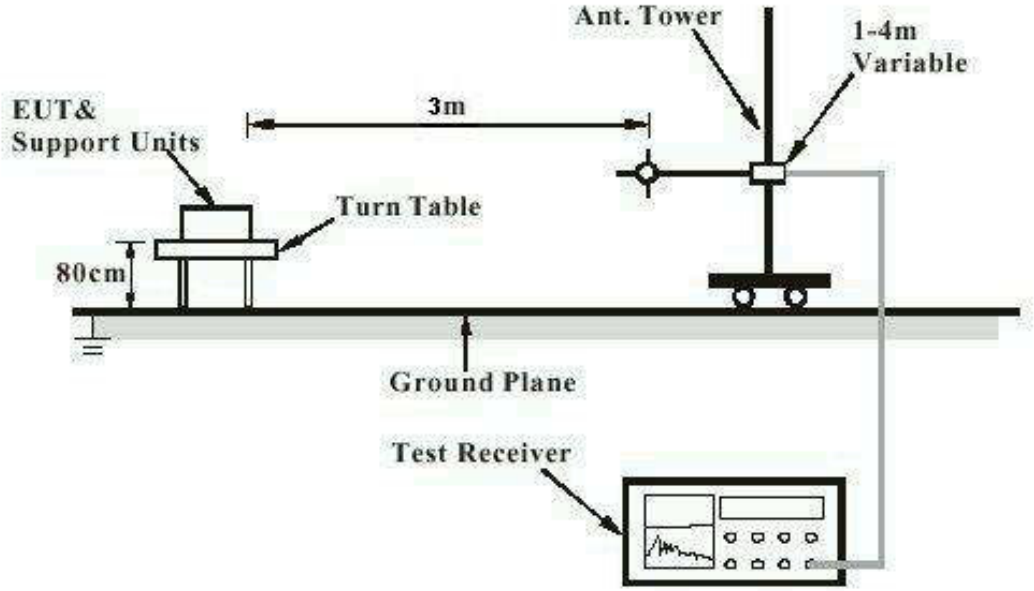
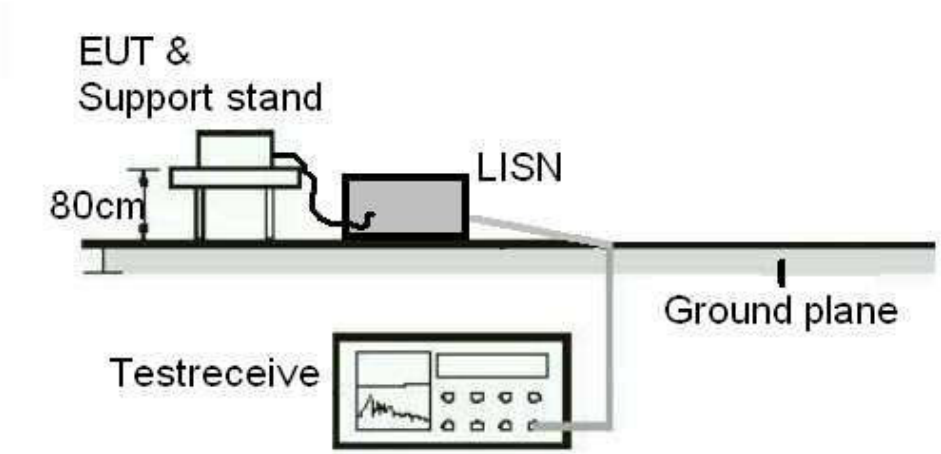


Diagram of Measurement Equipment Configuration for Conduction Measurement



5. Test Results

5.1 Emissions

5.1.1 Conducted emissions

RESULT: **Pass**

Date of testing	:	2014-05-17
Test standard	:	FCC Part 15.107 ICES-003 Issue 5 February 2012
Basic standard	:	ANSI C63.4: 2009
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.107(a) ICES-003 Issue 5 February 2012
Kind of test site	:	Shield room

Test setup

Input Voltage	:	AC 120V, 60Hz
Operation Mode	:	B
Earthing	:	Not Connected
Ambient temperature	:	25℃
Relative humidity	:	52%
Atmospheric pressure	:	101kPa

For details refer to following test plots.

Test Plot of Conducted emissions

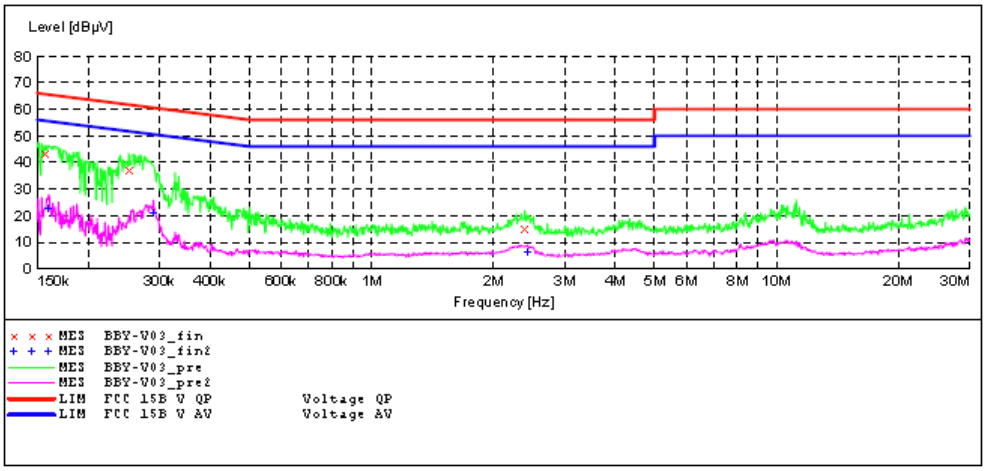
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15 B

```
EUT:                  Bluetooth Desktop Speaker System M/N:NS-PSB4521
Manufacturer:         Jazz Hipster Corporation
Operating Condition:  Aux in
Test Site:            1#Shielding Room
Operator:             Alen
Test Specification:   L 120V/60Hz
Comment:              Mains Port
Start of Test:        5/16/2014 / 11:29:57AM
```

SCAN TABLE: "V 150K-30MHz fin"

```
  Short Description:                SUB STD VTERM2 1.70
  Start      Stop       Step        Detector  Meas.     IF       Transducer
  Frequency  Frequency  Width                 Time      Bandw.
  150.0 kHz  30.0 MHz   4.5 kHz     QuasiPeak 1.0 s     9 kHz    NSLK8126 2008
                                    Average
```



MEASUREMENT RESULT: "BBY-V03_fin"

5/16/2014 11:37AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.156734	43.60	10.5	66	22.0	QP	L1	GND
0.252043	37.60	10.6	62	24.1	QP	L1	GND
2.394903	15.30	11.0	56	40.7	QP	L1	GND

MEASUREMENT RESULT: "BBY-V03_fin2"

5/16/2014 11:37AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.159893	22.60	10.5	56	32.9	AV	L1	GND
0.289837	21.00	10.6	51	29.5	AV	L1	GND
2.433452	6.20	11.0	46	39.8	AV	L1	GND

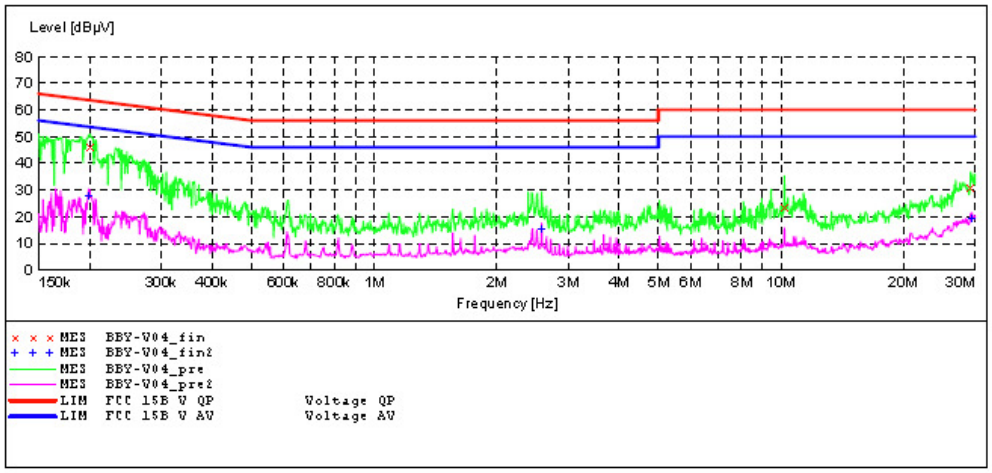
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15 B

```
EUT:                  Bluetooth Desktop Speaker System M/N:NS-PSB4521
Manufacturer:         Jazz Hipster Corporation
Operating Condition:  Aux in
Test Site:            1#Shielding Room
Operator:             Alen
Test Specification:   N 120V/60Hz
Comment:              Mains Port
Start of Test:        5/16/2014 / 11:38:08AM
```

SCAN TABLE: "V 150K-30MHz fin"

```
  Short Description:                SUB STD VTERM2 1.70
  Start      Stop       Step        Detector   Meas.     IF       Transducer
  Frequency  Frequency  Width                  Time      Bandw.
  150.0 kHz  30.0 MHz   4.5 kHz     QuasiPeak  1.0 s     9 kHz    NSLK8126 2008
                                    Average
```



MEASUREMENT RESULT: "BBY-V04_fin"

5/16/2014 11:46AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.200748	46.20	10.5	64	17.4	QP	N	GND
10.200600	23.60	11.3	60	36.4	QP	N	GND
29.263474	31.20	11.5	60	28.8	QP	N	GND

MEASUREMENT RESULT: "BBY-V04_fin2"

5/16/2014 11:46AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.199152	27.90	10.5	54	25.7	AV	N	GND
2.583619	15.30	11.0	46	30.7	AV	N	GND
29.498050	19.20	11.5	50	30.8	AV	N	GND

5.1.2 Radiated emissions

RESULT: **Pass**

Date of testing	:	2014-05-17
Test standard	:	FCC Part 15.109 ICES-003 Issue 5 February 2012
Basic standard	:	ANSI C63.4: 2009
Frequency range	:	30 – 6000MHz *
Limits	:	FCC Part 15.109(a) ICES-003 Issue 5 February 2012
Kind of test site	:	3m Semi-Anechoic Chamber

Test Setup

Input Voltage	:	AC 120V, 60Hz
Operation Mode	:	B
Earthing	:	Not Connected
Ambient temperature	:	25℃
Relative humidity	:	52%
Atmospheric pressure	:	101kPa

*- The EUT's highest frequency generated and used is less than1000MHz, hence the highest scan frequency is up to 6GHz only.

For details refer to following test plots.

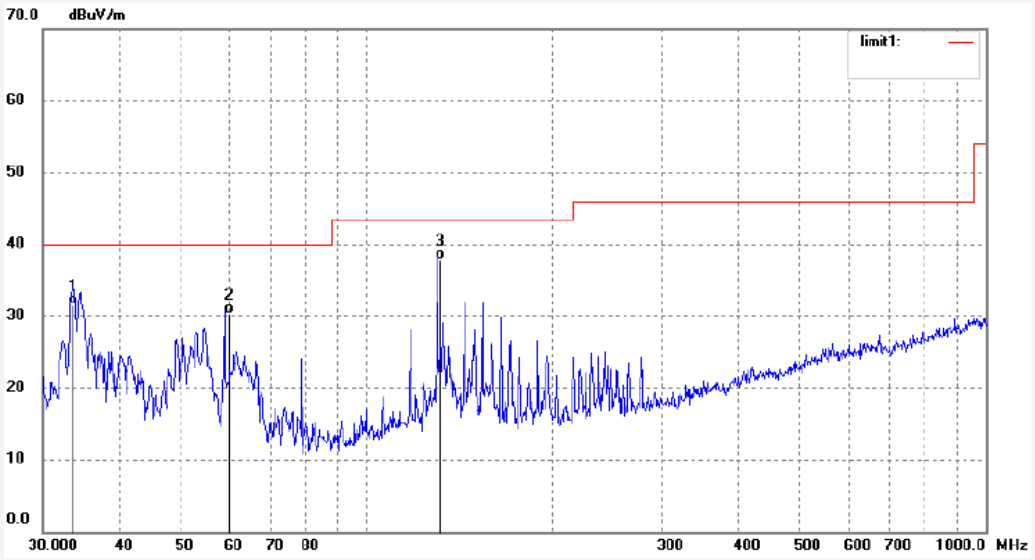
Test Plot of Radiated emissions

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.: ALEN #1983	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/05/17/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 8/49/22
EUT: Bluetooth Desktop Speaker System	Engineer Signature: Alen
Mode: Aux in	Distance:
Model: NS-PSB4521	
Manufacturer: Jazz Hipster Corporation	

Note:



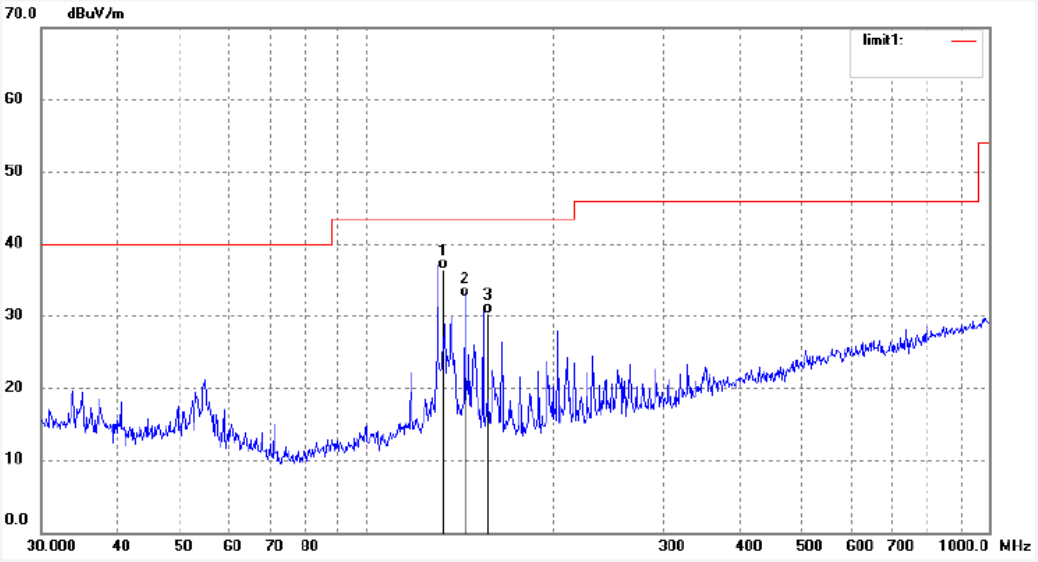
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.5700	41.79	-10.27	31.52	40.00	-8.48	QP			
2	59.9852	44.29	-13.94	30.35	40.00	-9.65	QP			
3	131.9905	51.85	-13.95	37.90	43.50	-5.60	QP			

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.: ALEN #1984	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/05/17/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 8/58/24
EUT: Bluetooth Desktop Speaker System	Engineer Signature: Alen
Mode: Aux in	Distance:
Model: NS-PSB4521	
Manufacturer: Jazz Hipster Corporation	

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	132.0500	50.38	-13.95	36.43	43.50	-7.07	QP			
2	144.0100	47.87	-15.23	32.64	43.50	-10.86	QP			
3	156.0010	45.34	-14.99	30.35	43.50	-13.15	QP			

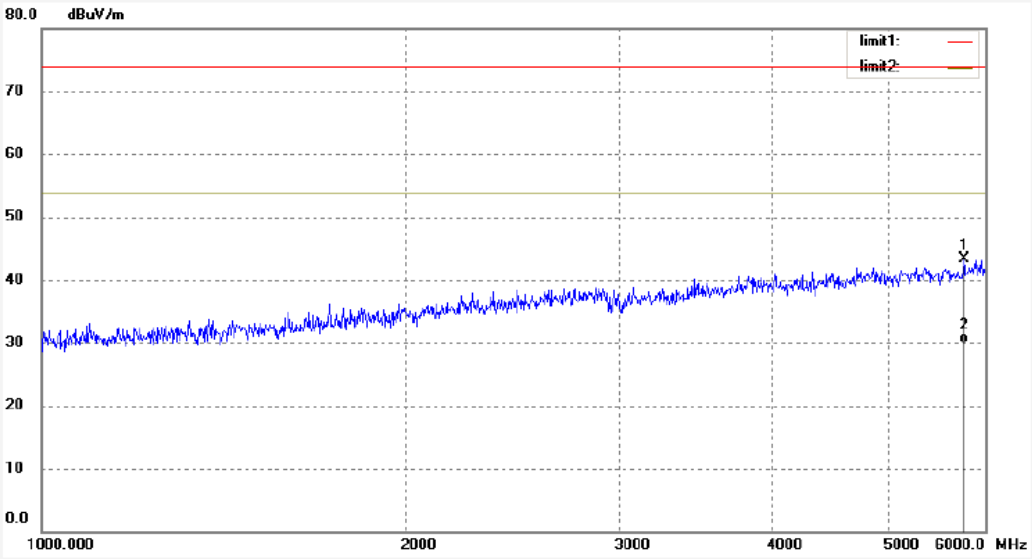
ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: ALEN #1981
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Bluetooth Desktop Speaker System
Mode: Aux in
Model: NS-PSB4521
Manufacturer: Jazz Hipster Corporation

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 14/05/17/
Time: 8/24/50
Engineer Signature: Alen
Distance:

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	5766.716	41.60	1.70	43.30	74.00	-30.70	peak			
2	5766.716	28.24	1.70	29.94	54.00	-24.06	AVG			

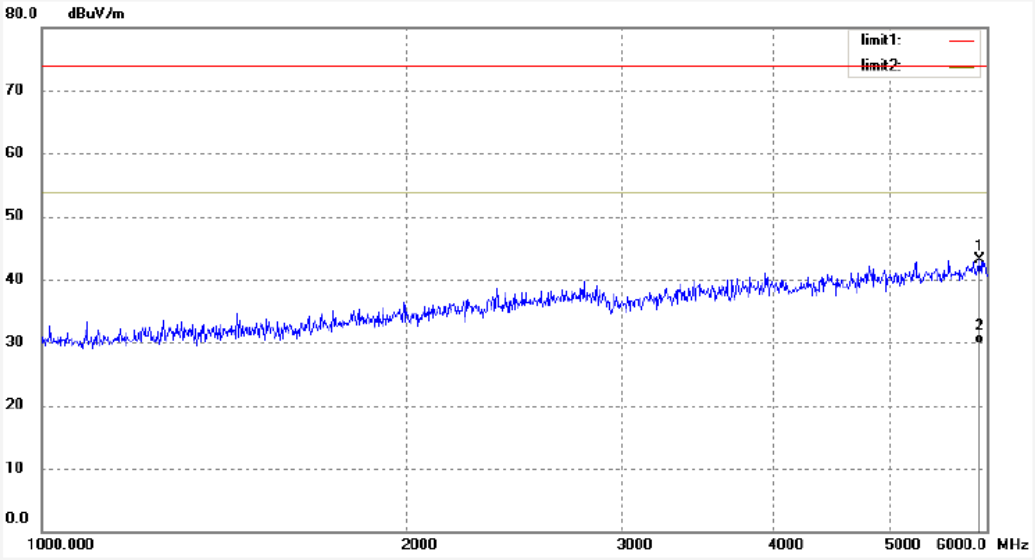
ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: ALEN #1982
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Bluetooth Desktop Speaker System
Mode: Aux in
Model: NS-PSB4521
Manufacturer: Jazz Hipster Corporation

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 14/05/17/
Time: 8/35/07
Engineer Signature: Alen
Distance:

Note:

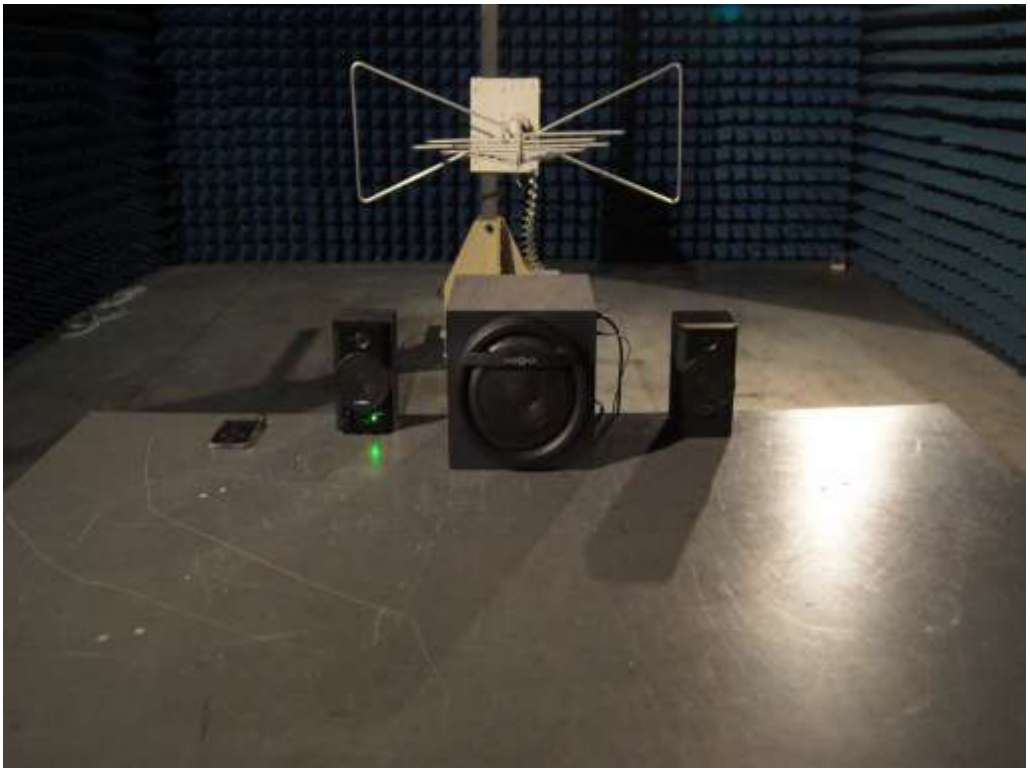


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	5924.767	41.14	2.03	43.17	74.00	-30.83	peak			
2	5924.767	27.74	2.03	29.77	54.00	-24.23	AVG			

6. Photographs of the Test Set-Up

Photograph 1: Set-up for Conducted Emissions, Aux in mode

Photograph 2: Set-up for Radiated Emissions, below 1GHz



Photograph 3: Set-up for Radiated Emissions, Above 1GHz

7. List of Tables

Table 1: List of Test and Measurement Equipment 5
Table 2: Measurement Uncertainty 6
Table 3: Technical Specification of EUT 7

8. List of Photographs

Photograph 1: Set-up for Conducted Emissions, Aux in mode 19
Photograph 2: Set-up for Radiated Emissions, below 1GHz 19
Photograph 3: Set-up for Radiated Emissions, Above 1GHz 20