

Prüfbericht-Nr.: Test Report No.:	16066048 001	Auftrags-Nr.: Order No.:	174031589	Seite 1 von 31 Page 1 of 31
Kunden-Referenz-Nr.: Client Reference No.:	441404	Auftragsdatum: Order date.:	03 Feb, 2015	
Auftraggeber: Client:	Bang & Olufsen a/s Peter Bangs Vej 15 7600 Struer Denmark			
Prüfgegenstand: Test item:	Bluetooth Speaker	FCC ID: FCC ID:	TTUBEOPPLAYS3	
Bezeichnung / Typ-Nr.: Identification / Type No.:	BeoPlay S3			
Auftrags-Inhalt: Order content:	TUV Rheinland - EMC service			
Prüfgrundlage: Test specification:	FCC Part 15: 2013-10 Subpart C section 15.207, 15.209 and 15.247 ANSI C63.4: 2003			
Wareingangsdatum: Date of receipt:	16 Apr, 2015	Vertrauliche Informationen Confidential Information		
Prüfmuster-Nr.: Test sample No.:	Engineering samples			
Prüfzeitraum: Testing period:	Refer to test report			
Ort der Prüfung: Place of testing:	Refer to section 2.1			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Guangdong) Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
18 May, 2015 Amy Wang / Project Engineer		22, May 2015 Max Y. C. Yao / Department Manager		
Datum Date	Name/Stellung Name/Position	Unterschrift Signature	Datum Date	Name/Stellung Name/Position
Sonstiges / Other:				
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 P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) Legend: 1 = very good 2 = good 3 = satisfactory P(ass) = passed a.m. test specifications(s) F(ail) = failed a.m. test specifications(s)		4 = ausreichend 5 = mangelhaft N/A = nicht anwendbar N/T = nicht getestet 4 = sufficient 5 = poor N/A = not applicable N/T = not tested		
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Passed

5.1.2 PEAK OUTPUT POWER

RESULT: Passed

5.1.3 CONDUCTED POWER SPECTRAL DENSITY

RESULT: Passed

5.1.4 6dB BANDWIDTH

RESULT: Passed

5.1.5 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 kHz BANDWIDTH

RESULT: Passed

5.1.6 SPURIOUS EMISSION

RESULT: Passed

5.1.7 20dB BANDWIDTH

RESULT: Passed

5.1.8 FREQUENCY SEPARATION

RESULT: Passed

5.1.9 NUMBER OF HOPPING FREQUENCY

RESULT: Passed

5.1.10 TIME OF OCCUPANCY

RESULT: Passed

5.1.11 CONDUCTED EMISSIONS

RESULT: Passed

6.1.1 ELECTROMAGNETIC FIELDS

RESULT: Passed

Contents

1	GENERAL REMARKS	5
1.1	COMPLEMENTARY MATERIALS	5
2	TEST SITES	5
2.1	TEST FACILITIES	5
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS	6
2.3	TRACEABILITY.....	8
2.4	CALIBRATION.....	8
2.5	MEASUREMENT UNCERTAINTY.....	8
2.6	LOCATION OF ORIGINAL DATA.....	8
2.7	STATUS OF FACILITY USED FOR TESTING	8
3	GENERAL PRODUCT INFORMATION.....	9
3.1	PRODUCT FUNCTION AND INTENDED USE.....	9
3.2	RATINGS AND SYSTEM DETAILS	9
3.3	INDEPENDENT OPERATION MODES	12
3.4	NOISE GENERATING AND NOISE SUPPRESSING PARTS	12
3.5	SUBMITTED DOCUMENTS	12
4	TEST SET-UP AND OPERATION MODES.....	13
4.1	PRINCIPLE OF CONFIGURATION SELECTION.....	13
4.2	TEST OPERATION AND TEST SOFTWARE	13
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	13
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE.....	13
4.5	TEST SET-UP	14
5	TEST RESULTS	16
5.1	TRANSMITTER REQUIREMENT & TEST SUITES	16
5.1.1	Antenna Requirement.....	16
5.1.2	Peak Output Power.....	17
5.1.3	Conducted Power Spectral Density.....	19
5.1.4	6dB Bandwidth.....	20
5.1.5	Conducted Spurious Emissions Measured in 100 kHz Bandwidth.....	21
5.1.6	Spurious Emission.....	22
5.1.7	20dB Bandwidth.....	23
5.1.8	Frequency Separation	24
5.1.9	Number of Hopping Frequency	25
5.1.10	Time of Occupancy.....	26
5.1.11	Conducted Emissions	28

6	SAFETY HUMAN EXPOSURE	29
6.1	RADIO FREQUENCY EXPOSURE COMPLIANCE	29
6.1.1	<i>Electromagnetic Fields</i>	29
7	PHOTOGRAPHS OF THE TEST SET-UP	30
8	LIST OF TABLES.....	31
9	LIST OF PHOTOGRAPHS	31

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

1) EST Technology Co., Ltd.

Santun(guantai Road), Houjie Town, DongGuan City, GuangDong, China.

Test item: others

FCC Registration No. 989591

2) Compliance Certification Services (Shenzhen) Inc.

No. 10-1 Mingkeda Logistics Park, No.18 Huanguan South RD. Guan lan Town, Baoan Distr, Shenzhen, China

Test item: Spurious Emission (9KHz – 30MHz)

FCC Registration No. 441872

The tests at these test sites have been conducted under the supervision of a TÜV Rheinland engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

EST Technology Co., Ltd.

Conducted Emission				
Equipment	Manufacturer	Model No.	Serial No.	Cal Until
EMI Test Receiver	R&S	ESHS30	832354	29 May, 2015
Artificial Mains Network	R&S	ENV216	101260	29 May, 2015
Pulse Limiter	R&S	ESH3-Z2	101100	29 May, 2015
Radiated Emission (30MHz – 1000MHz)				
Equipment	Manufacturer	Model No.	Serial No.	Cal Until
EMI Test Receiver	R&S	ESVS10	100004	29 May, 2015
Spectrum Analyzer	Agilent	E4411B	MY50140697	29 May, 2015
Bilog Antenna	Teseq	CBL 6111D	25872	29 May, 2015
Signal Amplifier	Agilent	310N	187037	29 May, 2015
Radiated Emission (Above 1GHz)				
Equipment	Manufacturer	Model No.	Serial No.	Cal Until
Horn Antenna	Schwarzbeck	BBHA 9120 D	BBHA9120D1002	27 June, 2015
Signal Amplifier	Schwarzbeck	BBV9718	9718-212	27 June, 2015
Spectrum Analyzer	Agilent	E4408B	MY44211139	27 June, 2015
Radio Test Suite				
Equipment	Manufacturer	Model No.	Serial No.	Cal Until
Spectrum Analyzer	Agilent	E4408B	MY44211139	27 June, 2015
Signal and Spectrum Analyzer	R&S	FSV	103173	05 Oct, 2015

Prüfbericht - Nr.: 16066048 001
Test Report No.

Seite 7 von 31
Page 7 of 31

Compliance Certification Services (Shenzhen) Inc.

Radiated Emission (9KHz – 30MHz)

Equipment	Manufacturer	Model No.	Serial No.	Cal Until
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	03 Jan, 2016
EMI TEST RECEIVER	R&S	ESCI	100783	03 Jan, 2016
Loop Antenna	Com-power	AL-130	121044	03 Jan, 2016
Turn Table	N/A	N/A	N/A	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R
Controller	CT	N/A	N/A	N.C.R
Temp. / Humidity Meter	Anymetre	JR913	N/A	03 Jan, 2016
Antenna Tower	SUNOL	TLT2	N/A	N.C.R
Test S/W	FARAD	LZ-RF / CCS-SZ-3A2		

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 basis using in house standards or comparisons.

2.5 Measurement Uncertainty

Uncertainty for conducted emissions measurements is 2.54dB.

Uncertainty for radiated emissions measurements is 1.8194dB (9KHz-30MHz), 3.62dB (30M-1GHz) and 4.11dB (> 1GHz)

The reported expanded uncertainty is based on a standard uncertainty multiply by a coverage factor $k=2$, providing a level of confidence of approximately 95%.

2.6 Location of original data

The original copies of 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 (Guangdong) file for certification follow-up purposes.

2.7 Status of facility used for testing

1) EST Technology Co., Ltd.

Santun(guantai Road), Houjie Town, DongGuan City, GuangDong, China. is listed on the US Federal Communications Commission list of facilities approved to perform measurements, the register No. 989591.

2) Compliance Certification Services (Shenzhen) Inc.

No. 10-1 Mingkeda Logistics Park, No.18 Huanguan South RD. Guan lan Town, Baoan Distr, Shenzhen, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements, the register No. 441872.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a “Bluetooth Speaker” with Bluetooth 4.0 dual mode, which is intended to enable Bluetooth connectivity with Notebook or smart phone, and play the music from Bluetooth device.

For more details refer to the Technical Documentation or User manual.

3.2 Ratings and System Details

Table 2: Rating of EUT

Kind of Equipment	Bluetooth Speaker
Type Designation	BeoPlay S3
FCC ID	TTUBEOPPLAYS3

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

Technical Specification	Value
Operating Frequency band	2402 – 2480 MHz
Bluetooth Core Version	4.0 Dual mode
Channel separation	1MHz
Extreme Temperature Range	-10°C to +55°C
Operation Voltage	100~240Vac, 50/60Hz;
Modulation	GFSK, 8DPSK, $\pi/4$ DQPSK
Antenna Type	Internal Antenna, Non-User Replaceable
Antenna Gain	3.14 dBi
RF Output Power	0.00163W (2.131dBm)

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	/	/

Table 5: Technical Specification of Bluetooth (low energy)

Technical Specification	Value
Operating Frequency band	2402 – 2480 MHz
Bluetooth Core Version	4.0 Dual mode
Channel separation	2MHz
Extreme Temperature Range	-10°C to +55°C
Operation Voltage	100~240Vac, 50/60Hz;
Modulation	GFSK
Antenna Type	Internal Antenna, Non-User Replaceable
Antenna Gain	3.14 dBi
RF Output Power	0.00313W (4.96 dBm)

Table 6: RF channel and frequency of Bluetooth low energy

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402.00	10	2422.00	20	2442.00	30	2462.00
1	2404.00	11	2424.00	21	2444.00	31	2464.00
2	2406.00	12	2426.00	22	2446.00	32	2466.00
3	2408.00	13	2428.00	23	2448.00	33	2468.00
4	2410.00	14	2430.00	24	2450.00	34	2470.00
5	2412.00	15	2432.00	25	2452.00	35	2472.00
6	2414.00	16	2434.00	26	2454.00	36	2474.00
7	2416.00	17	2436.00	27	2456.00	37	2476.00
8	2418.00	18	2438.00	28	2458.00	38	2478.00
9	2420.00	19	2440.00	29	2460.00	39	2480.00

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Traditional Bluetooth
 - 1. Transmitting on low channel
 - 2. Transmitting on middle channel
 - 3. Transmitting on high channel
- B. On, Bluetooth low energy
 - 1. Transmitting on low channel
 - 2. Transmitting on middle channel
 - 3. Transmitting on high channel
- C. On, Traditional Bluetooth on Hopping channel
- D. On, Bluetooth connecting mode
- E. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- 1. Block Diagram
- 2. Circuit Diagram
- 3. Operation Description
- 4. PCB Layout
- 5. BOM
- 6. FCC label and location
- 7. User Manual
- 8. Internal Photos
- 9. External Photos
- 10. Application form

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: 2003.

4.3 Special Accessories and Auxiliary Equipment

None.

4.4 Countermeasures to achieve EMC Compliance

The test sample, which has been tested, contained the noise suppression parts as described in the technical document. No additional measures were employed to achieve compliance.

4.5 Test set-up

Diagram of Measurement Configuration for Radiation Test

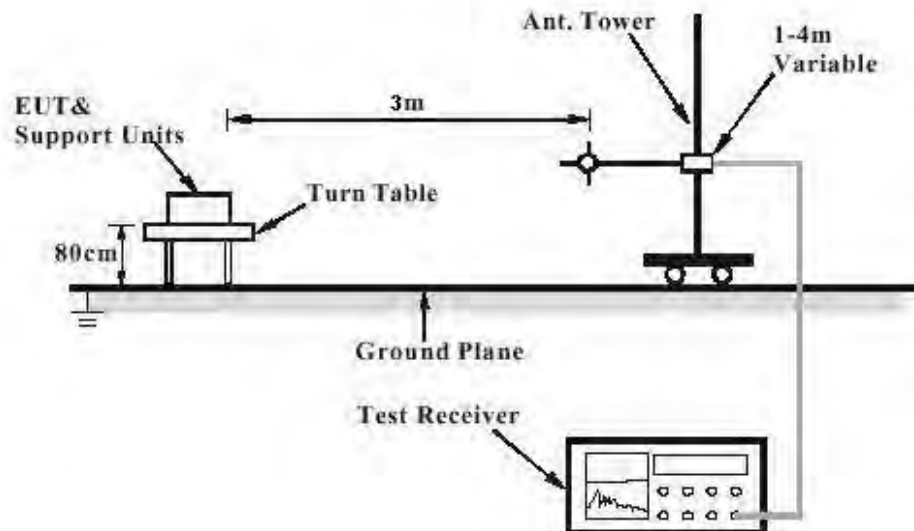


Diagram of Measurement Configuration for Mains Conduction Measurement

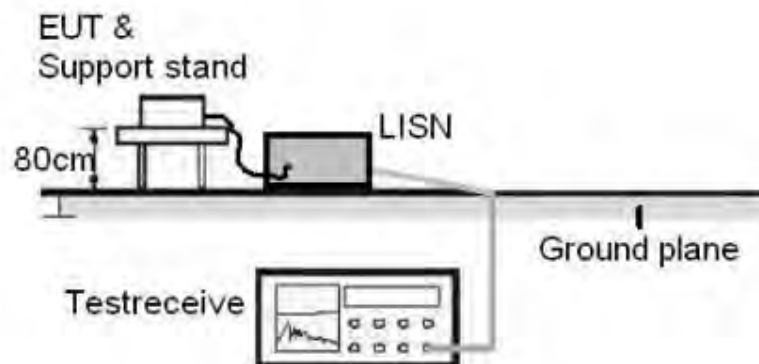
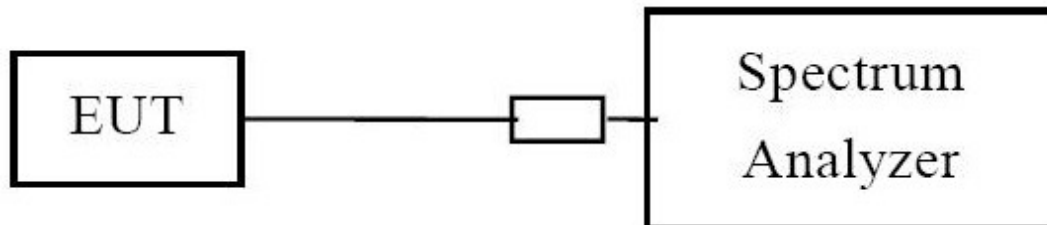


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Passed**

Test Specification

Test standard	: FCC Part 15.247(b)(4) and Part 15.203
Limits	: 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 3.14 dBi, 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.

For more details, refer to EUT photo.

5.1.2 Peak Output Power

RESULT:

Passed

Test Specification

Test standard	: FCC Part 15.247(b)(1) & (b)(3)
Basic standard	: ANSI C63.4: 2003
Limits	: BDR/ EDR: 0.125 Watts BLE: 1 Watt
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 26 Feb, 2015 & 30 Mar, 2015
Power supply	: 120Vac, 60Hz
Operation mode	: A, B (See 3.3)
Test channel	: Low / Middle / High
Ambient temperature	: 25 °C
Relative Humidity	: 60 %
Atmospheric pressure	: 101 kPa

Table 7: Test result of Peak Output Power, BDR

Channel	Channel Frequency (MHz)	Peak Output Power		Limit (W)
		(dBm)	(W)	
Low Channel	2402	-1.944	0.00064	0.125
Middle Channel	2441	0.775	0.00120	0.125
High Channel	2480	2.057	0.00161	0.125

Table 8: Test result of Peak Output Power, EDR

Channel	Channel Frequency (MHz)	Peak Output Power		Limit (W)
		(dBm)	(W)	
Low Channel	2402	-1.990	0.00063	0.125
Middle Channel	2441	0.569	0.00114	0.125
High Channel	2480	2.131	0.00163	0.125

Table 9: Test result of Peak Output Power, low energy

Channel	Channel Frequency (MHz)	Peak Output Power		Limit (W)
		(dBm)	(W)	
Low Channel	2402	3.750	0.00237	1
Middle Channel	2440	4.460	0.00279	1
High Channel	2480	4.960	0.00313	1

5.1.3 Conducted Power Spectral Density

RESULT:

Passed

Test Specification

Test standard : FCC Part 15.247(e)
Basic standard : ANSI C63.4: 2003
Limits : 8 dBm/3kHz
Kind of test site : Shielded Room

Test Setup

Date of testing : 30 Mar, 2015
Power supply : 120Vac, 60Hz
Operation mode : B (See 3.3)
Test channel : Low / Middle / High
Ambient temperature : 25 °C
Relative Humidity : 60 %
Atmospheric pressure : 101 kPa

Table 10: Test result of Power Spectral Density, low energy

Channel	Channel Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)
Low Channel	2402	-8.953	8
Middle Channel	2440	-7.725	8
High Channel	2480	-6.619	8

5.1.4 6dB Bandwidth

RESULT:

Passed

Test Specification

Test standard : FCC Part 15.247(a)(2)
Basic standard : ANSI C63.4: 2003
Limits : More than 500 KHz
Kind of test site : Shielded Room

Test Setup

Date of testing : 30 Mar, 2015
Power supply : 120Vac, 60Hz
Operation mode : B (See 3.3)
Test channel : Low / Middle / High
Ambient temperature : 25 °C
Relative Humidity : 60 %
Atmospheric pressure : 101 kPa

Table 11: Test result of 6dB Bandwidth, low energy

Channel	Channel Frequency (MHz)	-6dB Bandwidth (kHz)	Limit (kHz)	Result
Low Channel	2402	763	500	Pass
Mid Channel	2440	765	500	Pass
High Channel	2480	755	500	Pass

5.1.5 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT:

Passed

Test Specification

Test standard	: FCC Part 15.247(d)
Basic standard	: ANSI C63.4: 2003
Limits	: 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	: Shielded Room
-------------------	-----------------

Test Setup

Date of testing	: 30 Mar, 2015 & 09 Apr, 2015
Power supply	: 120Vac, 60Hz
Operation mode	: A, B, C (See 3.3)
Test channel	: Low / Middle / High
Ambient temperature	: 23.6 °C
Relative Humidity	: 56 %
Atmospheric pressure	: 101 kPa

All emissions are more than 20dB below fundamental, compliance is achieved as well.

For the measurement records, refer to the appendix 1.

5.1.6 Spurious Emission

RESULT:

Passed

Test Specification

Test standard	: FCC Part 15.247(d), FCC Part 15.205
Basic standard	: ANSI C63.4: 2003
Limits	: Refer to 15.209(a) of FCC part 15.247(d)
Kind of test site	: 3m Semi-anechoic chamber

Test Setup

Date of testing	: Refer to the appendix 1.
Power supply	: 120Vac, 60Hz
Operation mode	: A, B (See 3.3)
Test channel	: Low / Middle / High
Ambient temperature	: Refer to the appendix 1.
Relative Humidity	: Refer to the appendix 1.
Atmospheric pressure	: Refer to the appendix 1.

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 9kHz to the tenth harmonics.

For the measurement records, refer to the appendix 1.

5.1.7 20dB Bandwidth

RESULT:

Passed

Test Specification

Test standard : FCC Part 15.247(a)(1)
Basic standard : ANSI C63.4: 2003
Kind of test site : Shielded Room

Test Setup

Date of testing : 30 Mar, 2015
Power supply : 120Vac, 60Hz
Operation mode : A (See 3.3)
Test channel : Low / Middle / High
Ambient temperature : 25 °C
Relative Humidity : 60 %
Atmospheric pressure : 101 kPa

Table 12: Test result of 20dB Bandwidth, BDR mode

Channel	Channel Frequency (MHz)	20dB Bandwidth (kHz)	Limit (MHz)	Result
Low Channel	2402	943	/	Pass
Mid Channel	2441	942	/	Pass
High Channel	2480	939	/	Pass

Table 13: Test result of 20dB Bandwidth, EDR mode

Channel	Channel Frequency (MHz)	20dB Bandwidth (kHz)	Limit (MHz)	Result
Low Channel	2402	1263	/	Pass
Mid Channel	2441	1261	/	Pass
High Channel	2480	1262	/	Pass

5.1.8 Frequency Separation

RESULT:

Passed

Test Specification

Test standard : FCC Part 15.247(a)(1)
Basic standard : ANSI C63.4: 2003
Limits : $\geq 25\text{kHz}$ or $2/3$ of 20dB bandwidth, whichever is greater
Kind of test site : Shielded Room

Test Setup

Date of testing : 30 Mar, 2015
Power supply : 120Vac, 60Hz
Operation mode : A (See 3.3)
Test channel : Low / Middle / High
Ambient temperature : $25\text{ }^{\circ}\text{C}$
Relative Humidity : 60 %
Atmospheric pressure : 101 kPa

Table 14: Test result of Frequency Separation

Channel	Channel Frequency (MHz)	Measured Channel Separation (MHz)	Limit (kHz)	Result
Low Channel	2402	1.0	≥ 25kHz or 2/3 of 20dB bandwidth	Pass
Adjacency Channel	2403			
Mid Channel	2441	1.0		Pass
Adjacency Channel	2442			
High Channel	2480	1.0		Pass
Adjacency Channel	2479			

5.1.9 Number of Hopping Frequency

RESULT:

Passed

Test Specification

Test standard : FCC part 15.247(a)(1)(iii)
Basic standard : ANSI C63.4: 2003
Limits : ≥ 15 non-overlapping channels
Kind of test site : Shielded Room

Test Setup

Date of testing : 30 Mar, 2015
Power supply : 120Vac, 60Hz
Operation mode : C (See 3.3)
Ambient temperature : 25 °C
Relative Humidity : 60 %
Atmospheric pressure : 101 kPa

Table 15: Test result of Number of hopping frequency

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

5.1.10 Time of Occupancy

RESULT:

Passed

Test Specification

Test standard : FCC part 15.247(a)(1)(iii)
Basic standard : ANSI C63.4: 2003
Limits : 0.4s
Kind of test site : Shielded Room

Test Setup

Date of testing : 30 Mar, 2015
Power supply : 120Vac, 60Hz
Operation mode : A (See 3.3)
Test channel : Low / Middle / High
Ambient temperature : 25 °C
Relative Humidity : 60 %
Atmospheric pressure : 101 kPa

Table 16: Test result of Time of Occupancy, BDR mode

Channel	Data Mode	Pulse width (ms)	Measured Dwell time (s)	Limit (s)	Result
Low Channel	DH1	0.44	0.141	0.4	Pass
	DH3	1.73	0.277	0.4	Pass
	DH5	2.95	0.315	0.4	Pass
Mid Channel	DH1	0.45	0.144	0.4	Pass
	DH3	1.69	0.270	0.4	Pass
	DH5	2.98	0.318	0.4	Pass
High Channel	DH1	0.47	0.150	0.4	Pass
	DH3	1.72	0.275	0.4	Pass
	DH5	3.03	0.323	0.4	Pass

Table 17: Test result of Time of Occupancy, EDR mode

Channel	Data Mode	Pulse width (ms)	Measured Dwell time (s)	Limit (s)	Result
Low Channel	DH1	0.49	0.157	0.4	Pass
	DH3	1.71	0.274	0.4	Pass
	DH5	2.97	0.317	0.4	Pass
Mid Channel	DH1	0.46	0.147	0.4	Pass
	DH3	1.72	0.275	0.4	Pass
	DH5	3.03	0.323	0.4	Pass
High Channel	DH1	0.46	0.147	0.4	Pass
	DH3	1.73	0.277	0.4	Pass
	DH5	3.00	0.320	0.4	Pass

Note:

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

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

5.1.11 Conducted Emissions

RESULT:

Passed

Test Specification

Test standard	: FCC part 15.207
Basic standard	: ANSI C63.4: 2003
Frequency range	: 0.15 – 30MHz
Limits	: FCC Part 15.207(a)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 11 Apr, 2015
Power supply	: 120Vac, 60Hz
Operation mode	: D (See 3.3)
Earthing	: Not connected
Ambient temperature	: 24 °C
Relative Humidity	: 58 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix 1.

6 Safety Human exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

RESULT:

Passed

Test Specification

Test standard : FCC KDB Publication 447498 v05r02

The maximum peak output power of the transmitter is 3.13 mW, only, which less than 20mW.

The minimum distance for the EUT is 5mm, since maximum peak output power of the transmitter is 3.13 mW <10 mW, hence the EUT is excluded from SAR evaluation according to FCC KDB Publication 447498 D01 General RF Exposure Guidance v05r02.

7 Photographs of the Test Set-Up

Photograph 1: Set-up for Spurious Emissions (9kHz - 30MHz)

Refer to set-up photo documents for details.

Photograph 2: Set-up for Spurious Emissions (30MHz-1GHz)

Refer to set-up photo documents for details.

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

Refer to set-up photo documents for details.

Photograph 4: Set-up for Conducted Emissions

Refer to set-up photo documents for details.

8 List of Tables

Table 1: List of Test and Measurement Equipment	6
Table 2: Rating of EUT	9
Table 3: Technical Specification of Bluetooth (BDR & EDR)	10
Table 4: RF channel and frequency of Bluetooth (BDR & EDR mode)	10
Table 5: Technical Specification of Bluetooth (low energy)	11
Table 6: RF channel and frequency of Bluetooth low energy	11
Table 7: Test result of Peak Output Power, BDR.....	18
Table 8: Test result of Peak Output Power, EDR.....	18
Table 9: Test result of Peak Output Power, low energy.....	18
Table 10: Test result of Power Spectral Density, low energy	19
Table 11: Test result of 6dB Bandwidth, low energy	20
Table 12: Test result of 20dB Bandwidth, BDR mode.....	23
Table 13: Test result of 20dB Bandwidth, EDR mode.....	23
Table 14: Test result of Frequency Separation	24
Table 15: Test result of Number of hopping frequency	25
Table 16: Test result of Time of Occupancy, BDR mode.....	26
Table 17: Test result of Time of Occupancy, EDR mode.....	27

9 List of Photographs

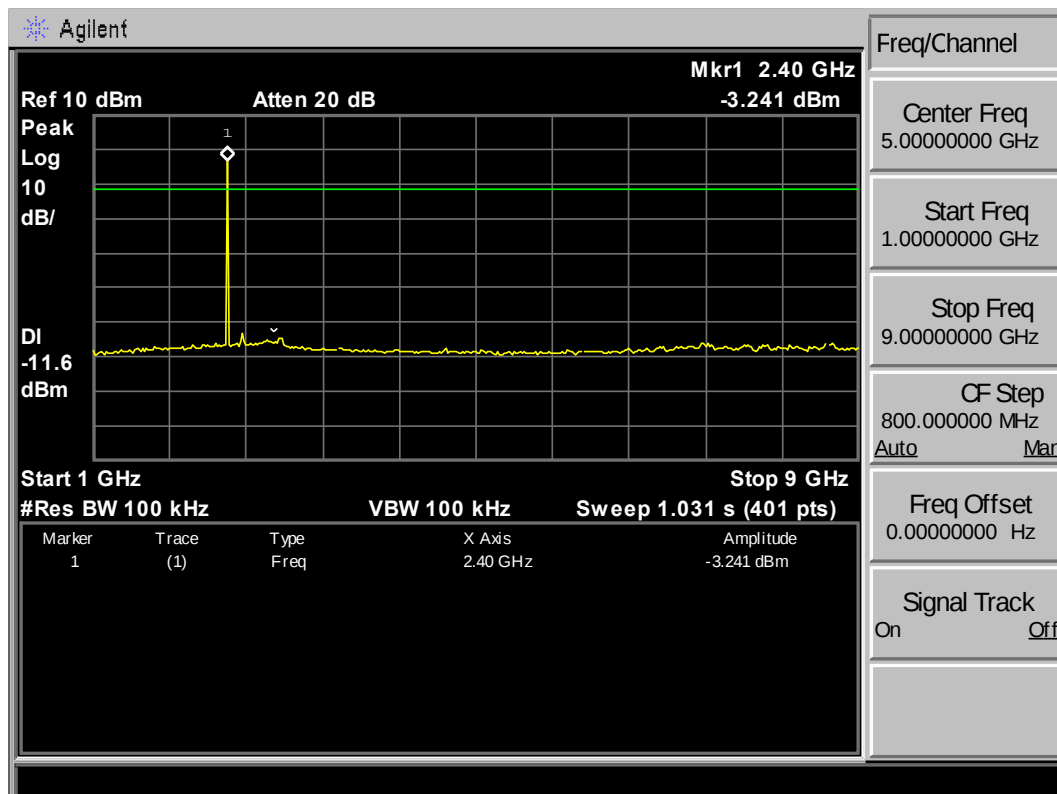
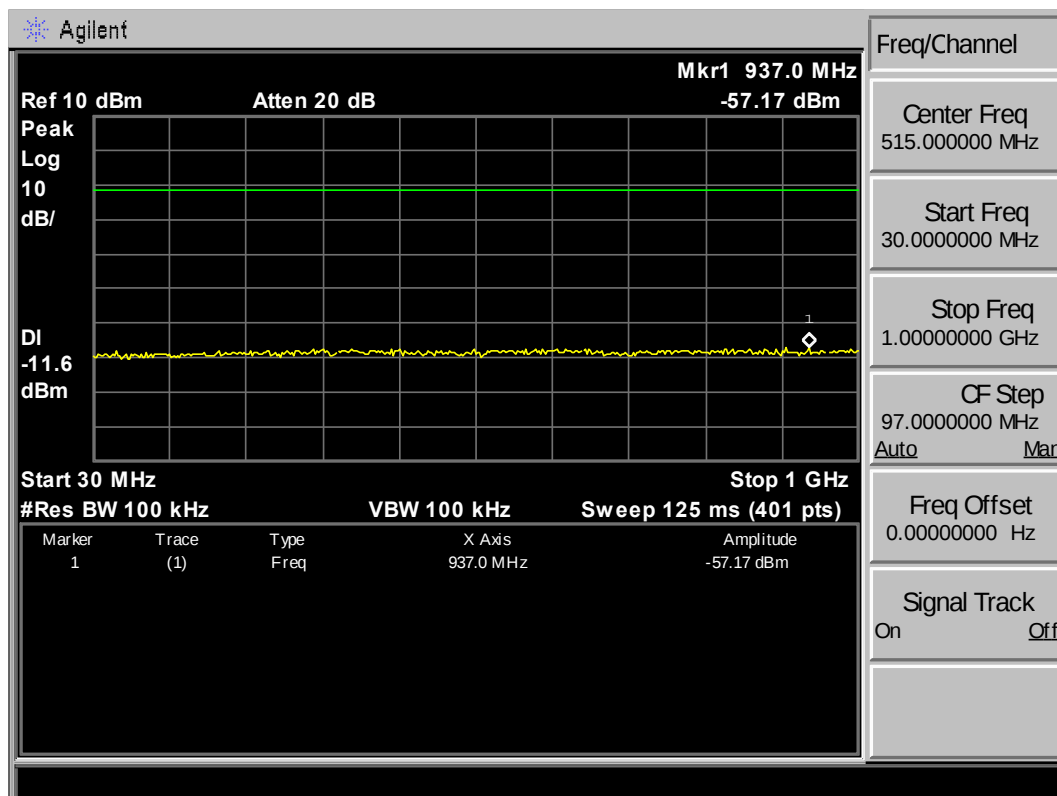
Photograph 1: Set-up for Spurious Emissions (9kHz - 30MHz)	30
Photograph 2: Set-up for Spurious Emissions (30MHz-1GHz)	30
Photograph 3: Set-up for Spurious Emissions (above 1GHz)	30
Photograph 4: Set-up for Conducted Emissions	30

List of Figures

Figure 1: Test figure of Conducted Spurious Emissions, BDR (Low)	3
Figure 2: Test figure of Conducted Spurious Emissions, BDR (Mid)	4
Figure 3: Test figure of Conducted Spurious Emissions, BDR (High)	6
Figure 4: Test figure of Conducted Spurious Emissions, EDR (Low)	7
Figure 5: Test figure of Conducted Spurious Emissions, EDR (Mid)	9
Figure 6: Test figure of Conducted Spurious Emissions, EDR (High)	11
Figure 7: Test figure of Conducted Spurious Emissions, BLE (Low)	12
Figure 8: Test figure of Conducted Spurious Emissions, BLE (Mid)	14
Figure 9: Test figure of Conducted Spurious Emissions, BLE (High)	15
Figure 10: Test figure of Band Edge, BDR (Low)	17
Figure 11: Test figure of Band Edge, BDR (High)	17
Figure 12: Test figure of Band Edge, EDR (Low)	18
Figure 13: Test figure of Band Edge, EDR (High)	18
Figure 14: Test figure of Band Edge, BLE (Low)	19
Figure 15: Test figure of Band Edge, BLE (High)	19
Figure 16: Test figure of Spurious Emissions (9kHz – 30MHz), BDR (Low)	20
Figure 17: Test figure of Spurious Emissions (30MHz – 1GHz), BDR (Low), H	22
Figure 18: Test figure of Spurious Emissions (30MHz – 1GHz), BDR (Low), V	23
Figure 19: Test figure of Spurious Emissions (1GHz – 25GHz), BDR (Low), H	24
Figure 20: Test figure of Spurious Emissions (1GHz – 25GHz), BDR (Low), V	26
Figure 21: Test figure of Spurious Emissions (9kHz – 30MHz), BDR (Mid)	28
Figure 22: Test figure of Spurious Emissions (30MHz – 1GHz), BDR (Mid), H	30
Figure 23: Test figure of Spurious Emissions (30MHz – 1GHz), BDR (Mid), V	31
Figure 24: Test figure of Spurious Emissions (1GHz – 25GHz), BDR (Mid), H	32
Figure 25: Test figure of Spurious Emissions (1GHz – 25GHz), BDR (Mid), V	34
Figure 26: Test figure of Spurious Emissions (9kHz – 30MHz), BDR (High)	36
Figure 27: Test figure of Spurious Emissions (30MHz – 1GHz), BDR (High), H	38
Figure 28: Test figure of Spurious Emissions (30MHz – 1GHz), BDR (High), V	39
Figure 29: Test figure of Spurious Emissions (1GHz – 25GHz), BDR (High), H	40
Figure 30: Test figure of Spurious Emissions (1GHz – 25GHz), BDR (High), V	42
Figure 31: Test figure of Spurious Emissions (9kHz – 30MHz), EDR (Low)	44
Figure 32: Test figure of Spurious Emissions (30MHz – 1GHz), EDR (Low), H	46
Figure 33: Test figure of Spurious Emissions (30MHz – 1GHz), EDR (Low), V	47
Figure 34: Test figure of Spurious Emissions (1GHz – 25GHz), EDR (Low), H	48
Figure 35: Test figure of Spurious Emissions (1GHz – 25GHz), EDR (Low), V	50
Figure 36: Test figure of Spurious Emissions (9kHz – 30MHz), EDR (Mid)	52
Figure 37: Test figure of Spurious Emissions (30MHz – 1GHz), EDR (Mid), H	54
Figure 38: Test figure of Spurious Emissions (30MHz – 1GHz), EDR (Mid), V	55
Figure 39: Test figure of Spurious Emissions (1GHz – 25GHz), EDR (Mid), H	56
Figure 40: Test figure of Spurious Emissions (1GHz – 25GHz), EDR (Mid), V	58
Figure 41: Test figure of Spurious Emissions (9kHz – 30MHz), EDR (High)	60
Figure 42: Test figure of Spurious Emissions (30MHz – 1GHz), EDR (High), H	62
Figure 43: Test figure of Spurious Emissions (30MHz – 1GHz), EDR (High), V	63
Figure 44: Test figure of Spurious Emissions (1GHz – 25GHz), EDR (High), H	64
Figure 45: Test figure of Spurious Emissions (1GHz – 25GHz), EDR (High), V	66
Figure 46: Test figure of Spurious Emissions (9kHz – 30MHz), BLE (Low)	68
Figure 47: Test figure of Spurious Emissions (30MHz – 1GHz), BLE (Low), H	70
Figure 48: Test figure of Spurious Emissions (30MHz – 1GHz), BLE (Low), V	71
Figure 49: Test figure of Spurious Emissions (1GHz – 25GHz), BLE (Low), H	72
Figure 50: Test figure of Spurious Emissions (1GHz – 25GHz), BLE (Low), V	74
Figure 51: Test figure of Spurious Emissions (9kHz – 30MHz), BLE (Mid)	76
Figure 52: Test figure of Spurious Emissions (30MHz – 1GHz), BLE (Mid), H	76

Figure 53: Test figure of Spurious Emissions (30MHz – 1GHz), BLE (Mid), V.....	79
Figure 54: Test figure of Spurious Emissions (1GHz –25GHz), BLE (Mid), H	80
Figure 55: Test figure of Spurious Emissions (1GHz –25GHz), BLE (Mid), V.....	82
Figure 56: Test figure of Spurious Emissions (9kHz – 30MHz), BLE (High).....	84
Figure 57: Test figure of Spurious Emissions (30MHz – 1GHz), BLE (High), H.....	86
Figure 58: Test figure of Spurious Emissions (30MHz – 1GHz), BLE (High), V.....	87
Figure 59: Test figure of Spurious Emissions (1GHz –25GHz), BLE (High), H.....	88
Figure 60: Test figure of Spurious Emissions (1GHz –25GHz), BLE (High), V.....	90
Figure 61: Test figure of Radiated Emissions in Restricted Bands, BDR (Low), H	92
Figure 62: Test figure of Radiated Emissions in Restricted Bands, BDR (Low), V.....	93
Figure 63: Test figure of Radiated Emissions in Restricted Bands, BDR (High), H.....	94
Figure 64: Test figure of Radiated Emissions in Restricted Bands, BDR (High), V.....	95
Figure 65: Test figure of Radiated Emissions in Restricted Bands, EDR (Low), H.....	96
Figure 66: Test figure of Radiated Emissions in Restricted Bands, EDR (Low), V.....	97
Figure 67: Test figure of Radiated Emissions in Restricted Bands, EDR (High), H.....	98
Figure 68: Test figure of Radiated Emissions in Restricted Bands, EDR (High), V.....	99
Figure 69: Test figure of Radiated Emissions in Restricted Bands, BLE (Low), H.....	100
Figure 70: Test figure of Radiated Emissions in Restricted Bands, BLE (Low), V.....	101
Figure 71: Test figure of Radiated Emissions in Restricted Bands, BLE (High), H	102
Figure 72: Test figure of Radiated Emissions in Restricted Bands, BLE (High), V	103
Figure 73: Test figure of Conducted Emissions, Mode C line live	104
Figure 74: Test figure of Conducted Emissions, Mode C line neutral	105

Figure 1: Test figure of Conducted Spurious Emissions, BDR (Low)



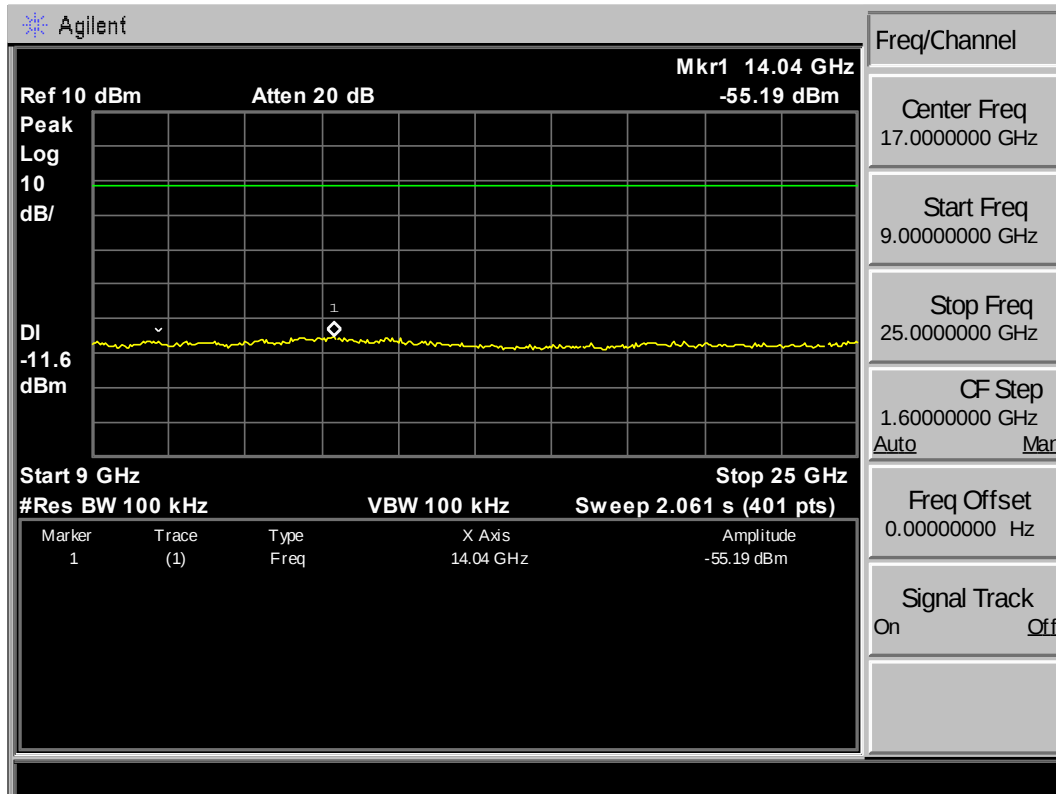
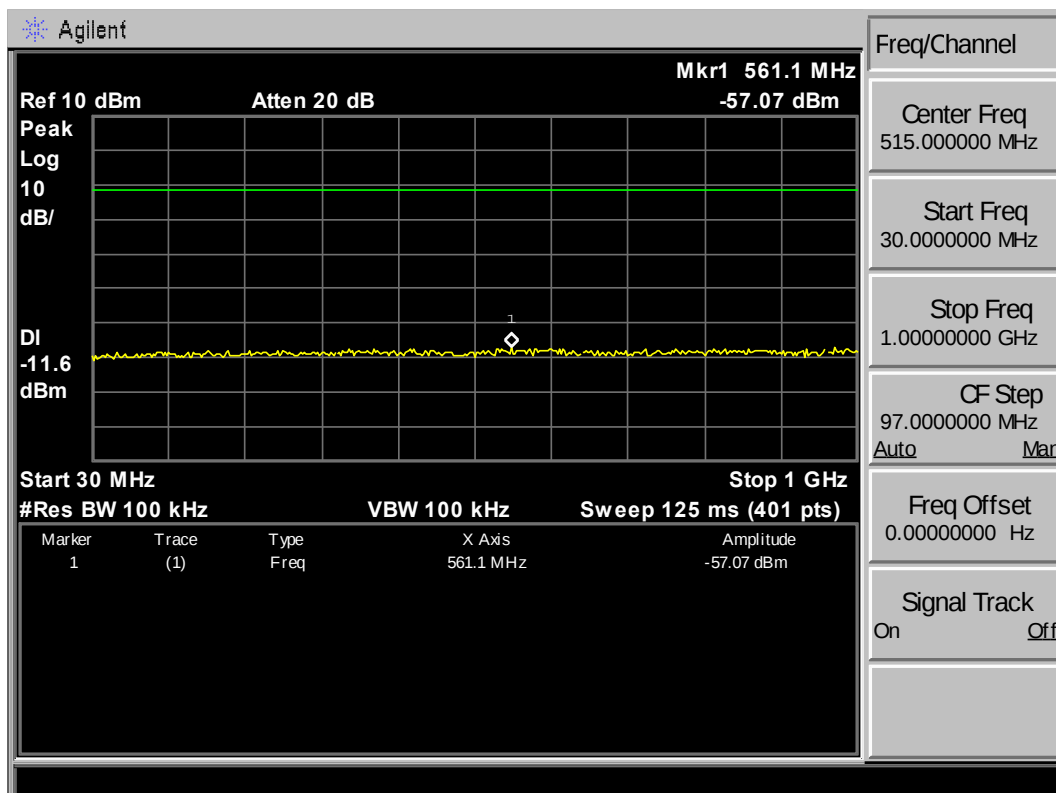


Figure 2: Test figure of Conducted Spurious Emissions, BDR (Mid)



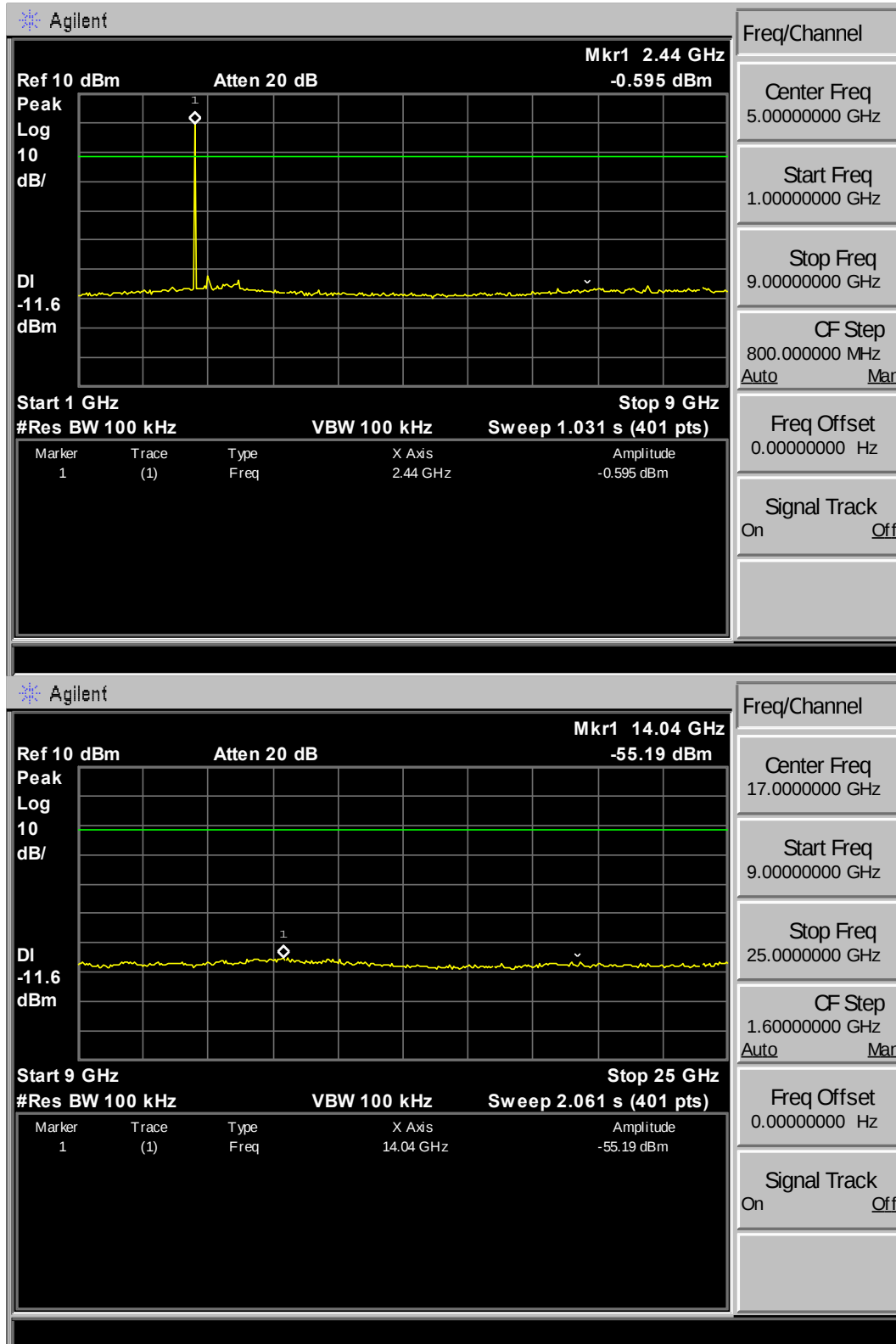
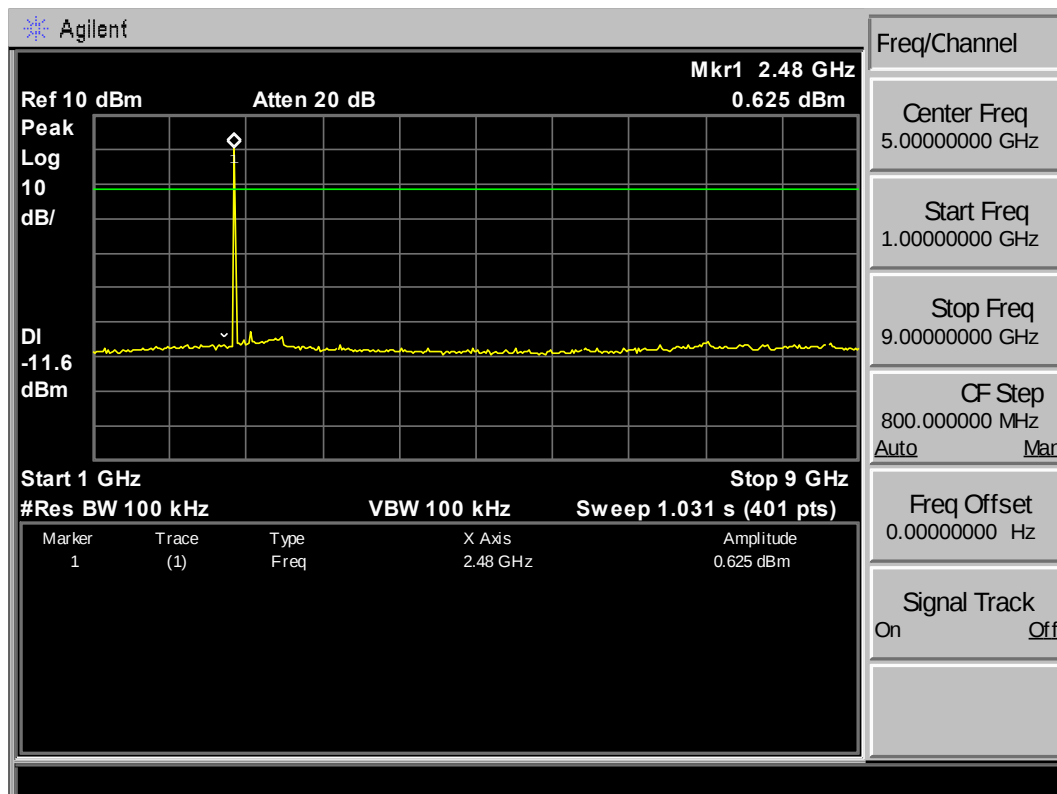
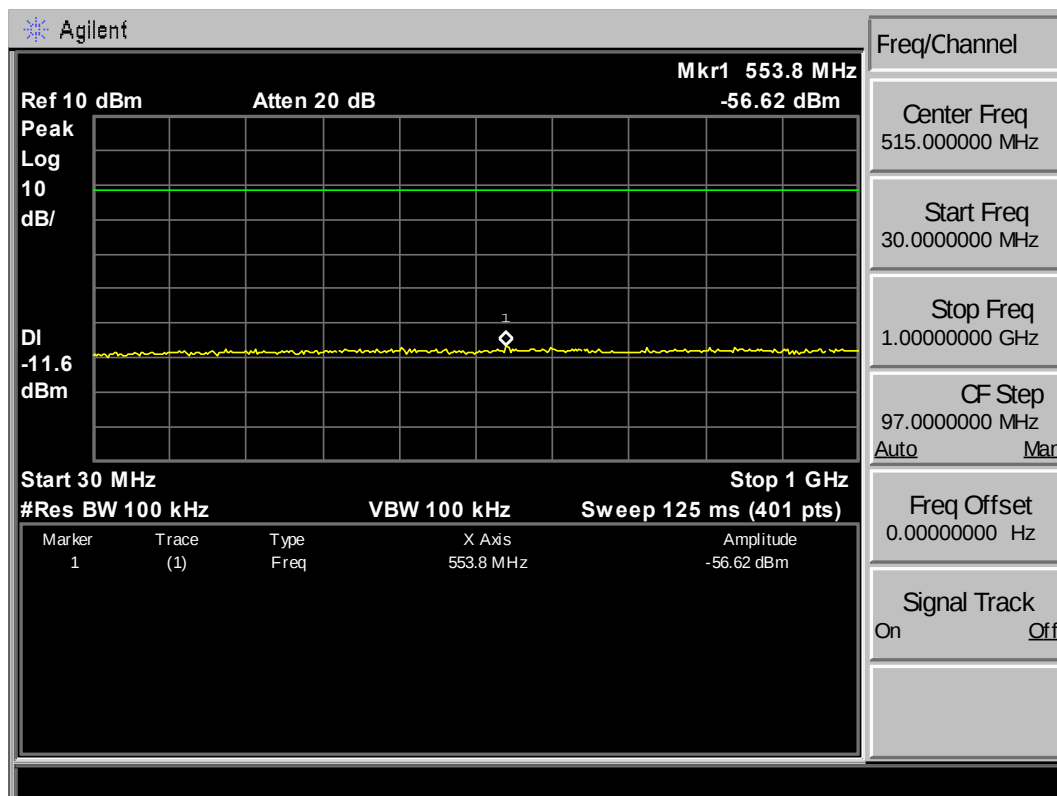


Figure 3: Test figure of Conducted Spurious Emissions, BDR (High)



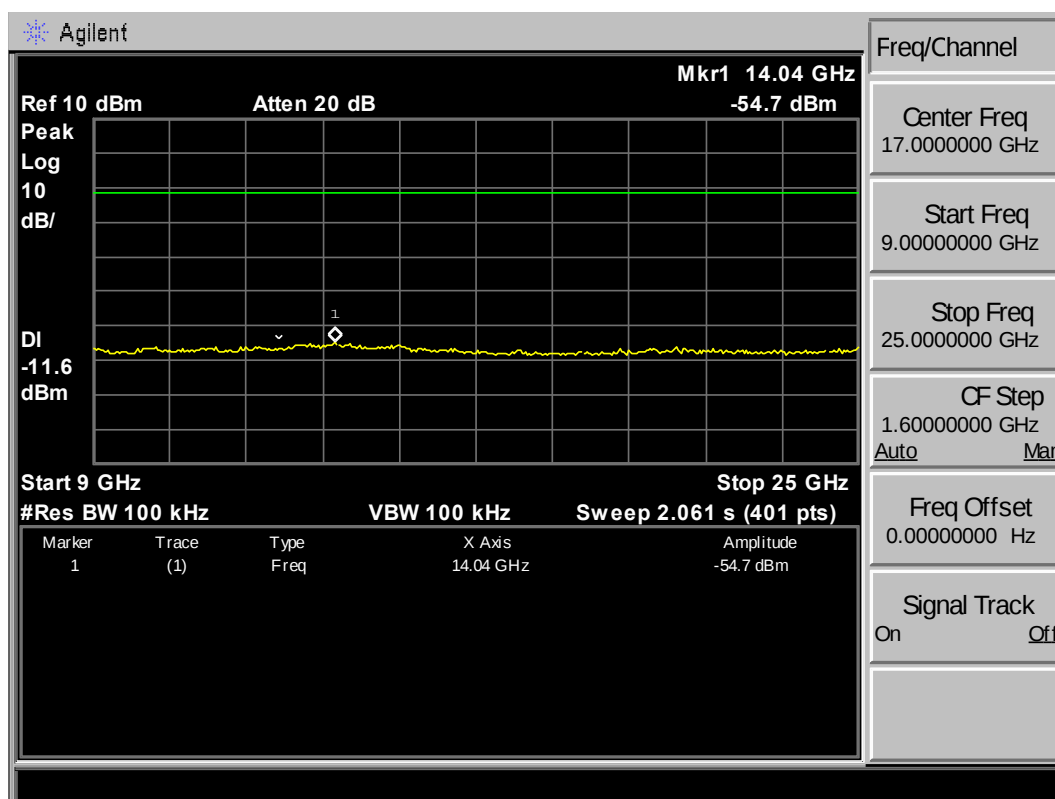
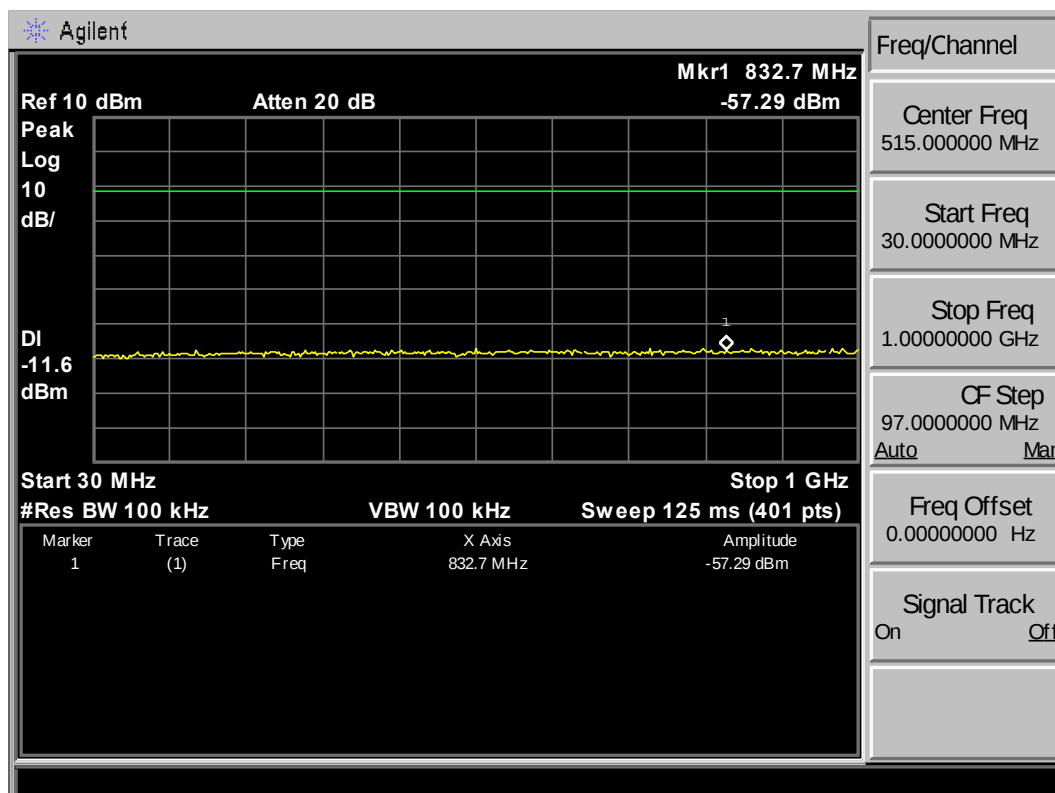
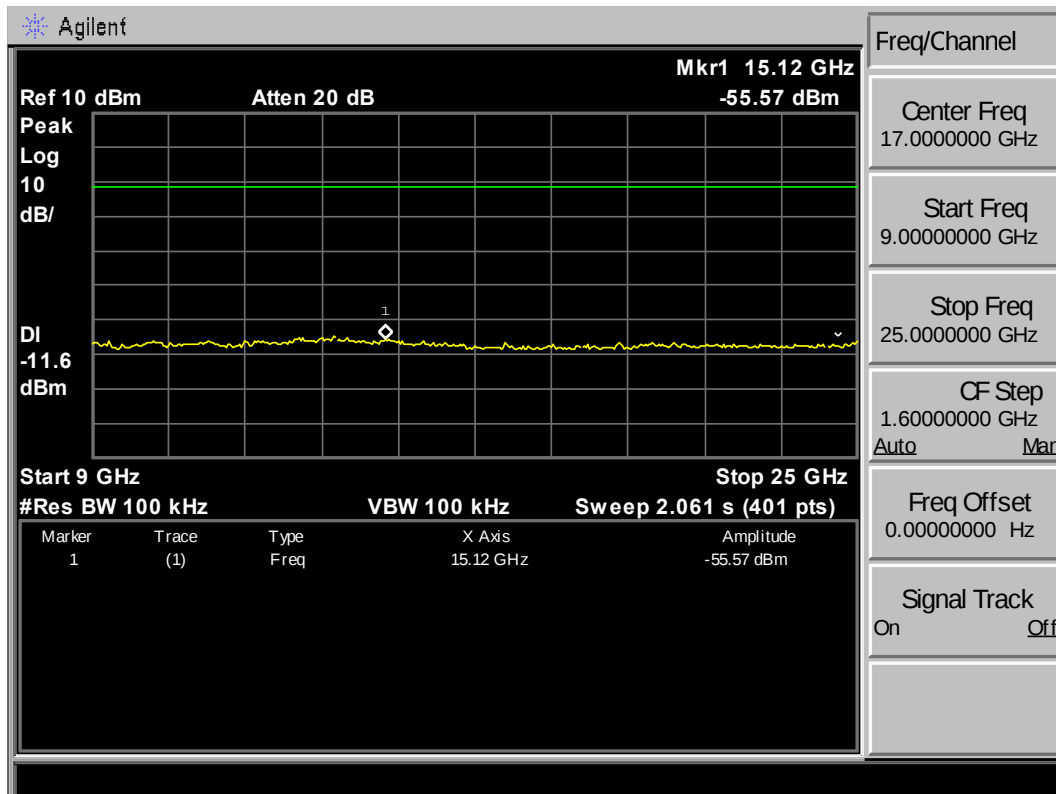
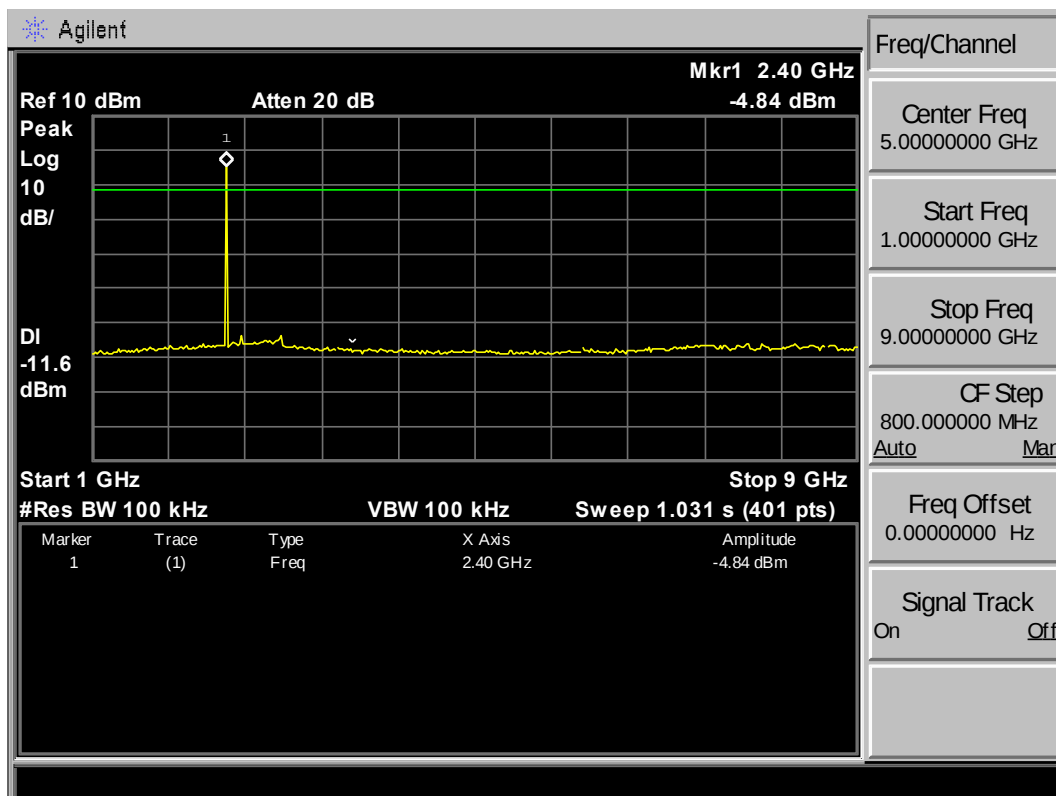


Figure 4: Test figure of Conducted Spurious Emissions, EDR (Low)





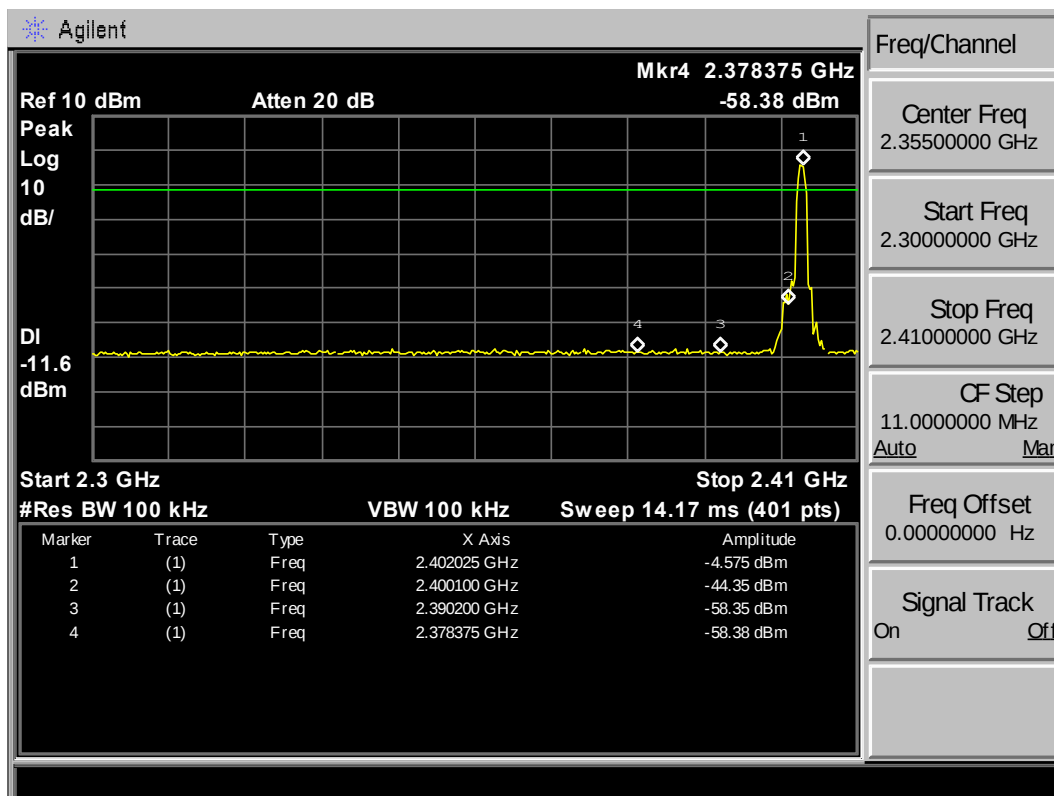
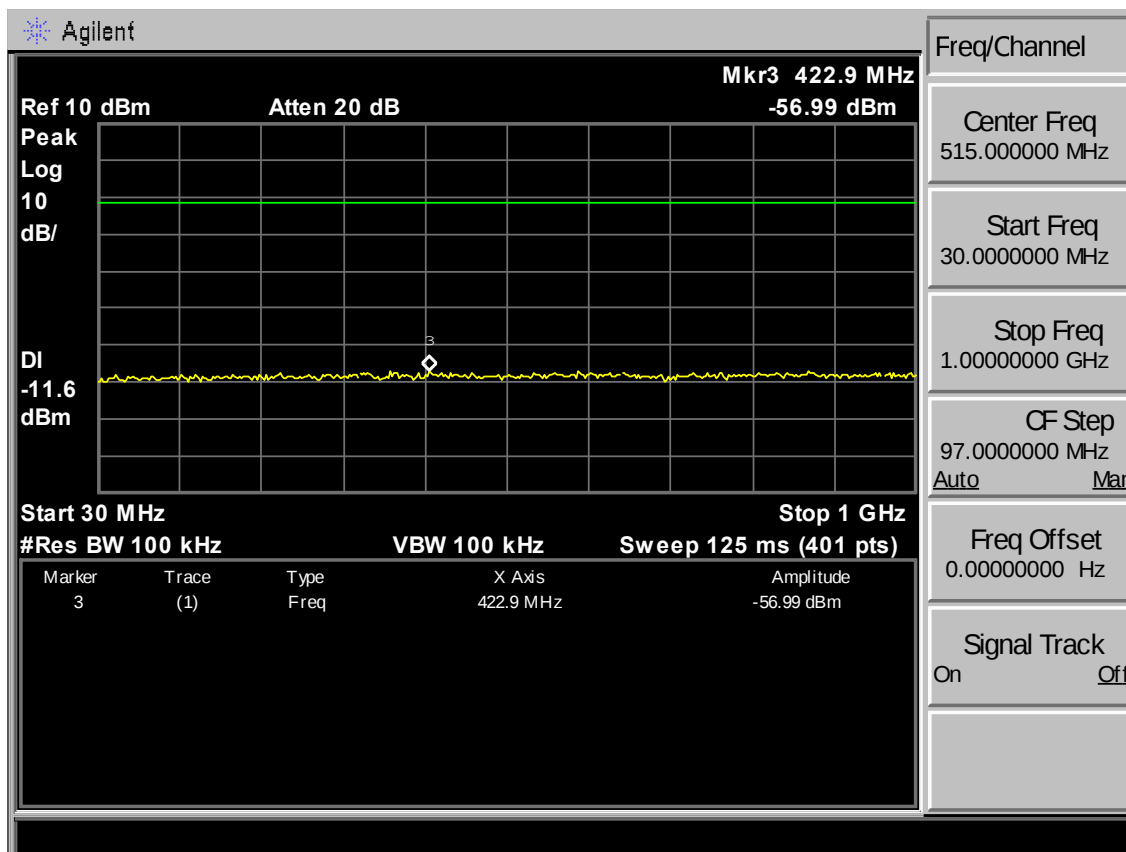


Figure 5: Test figure of Conducted Spurious Emissions, EDR (Mid)



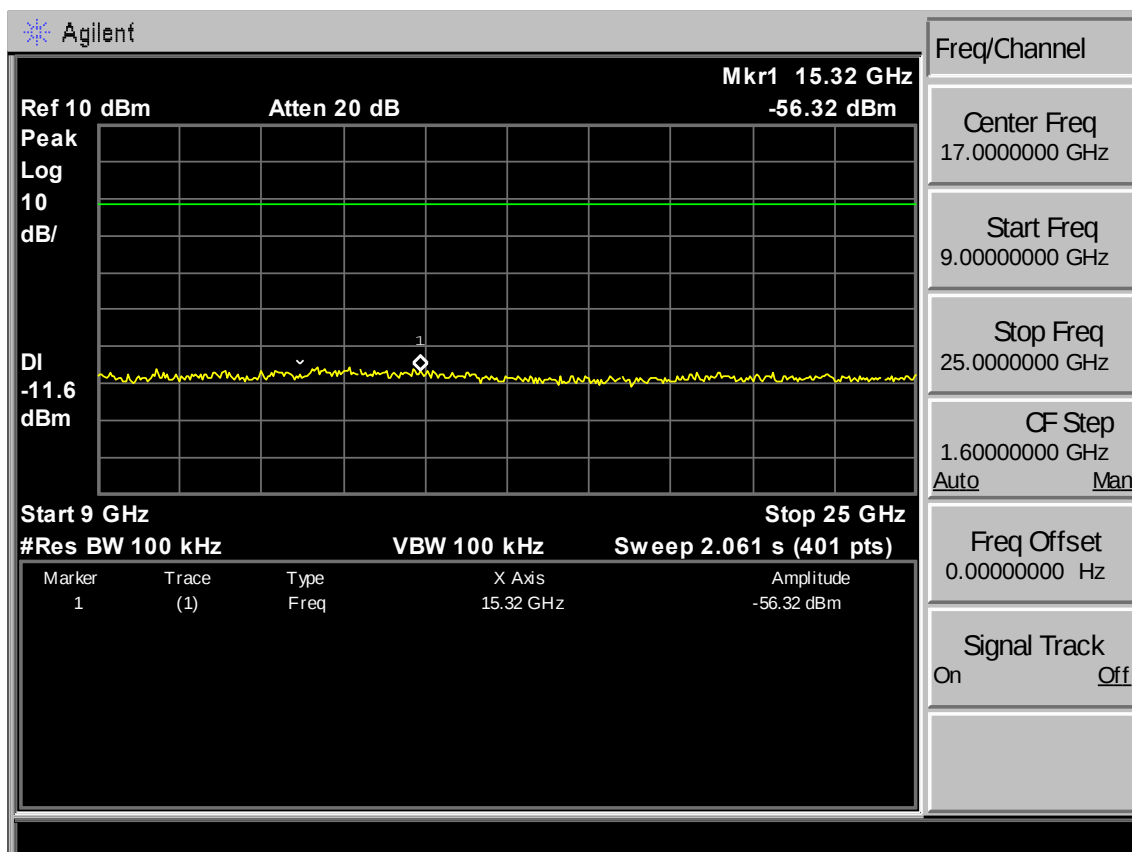
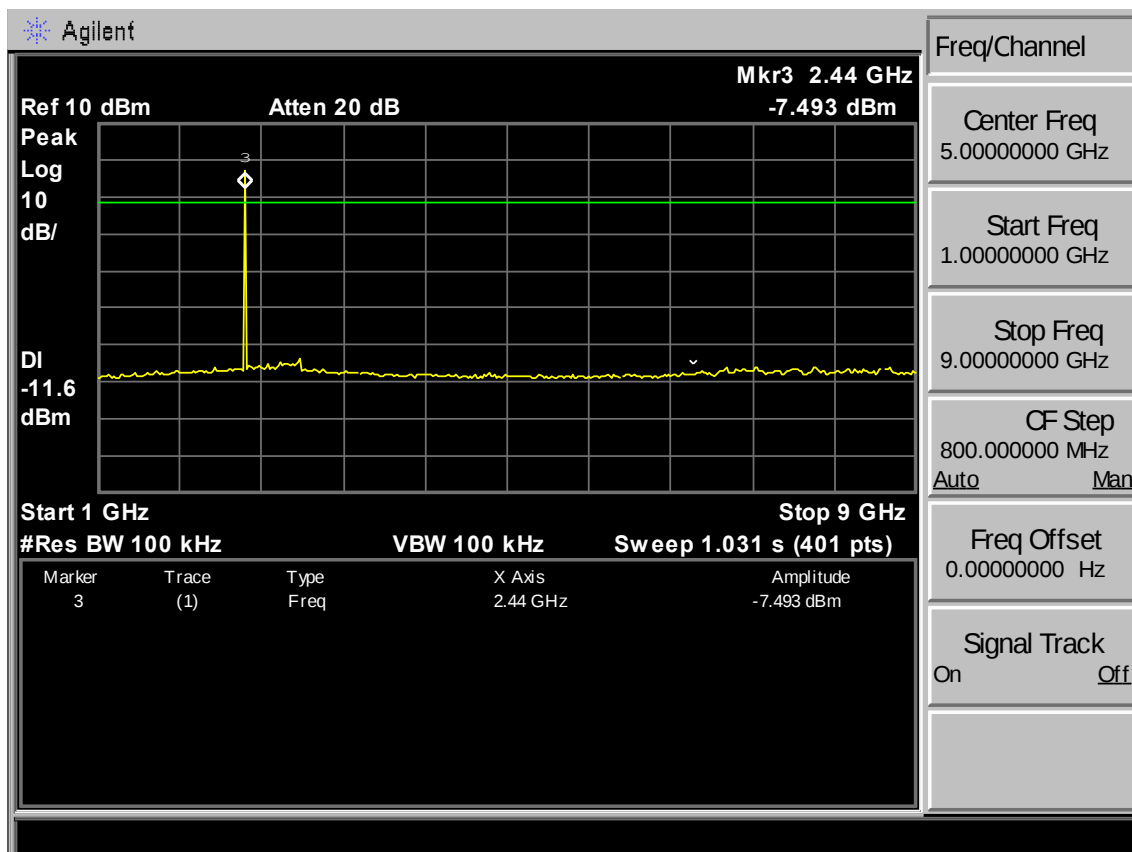
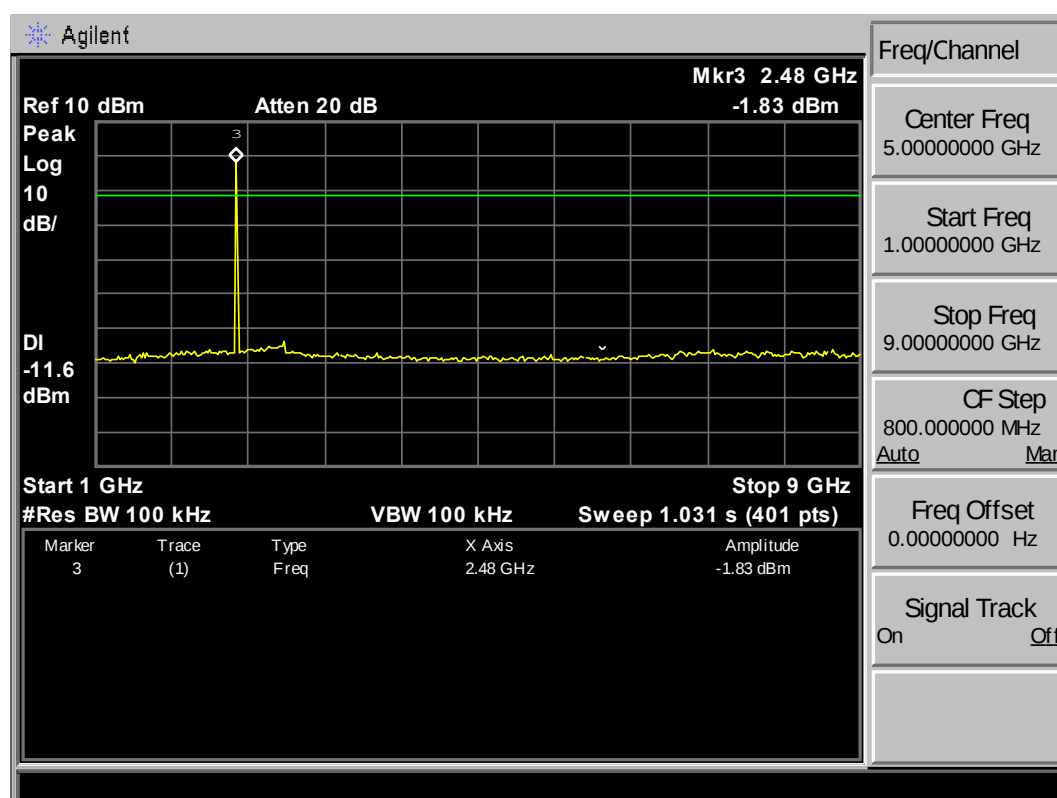
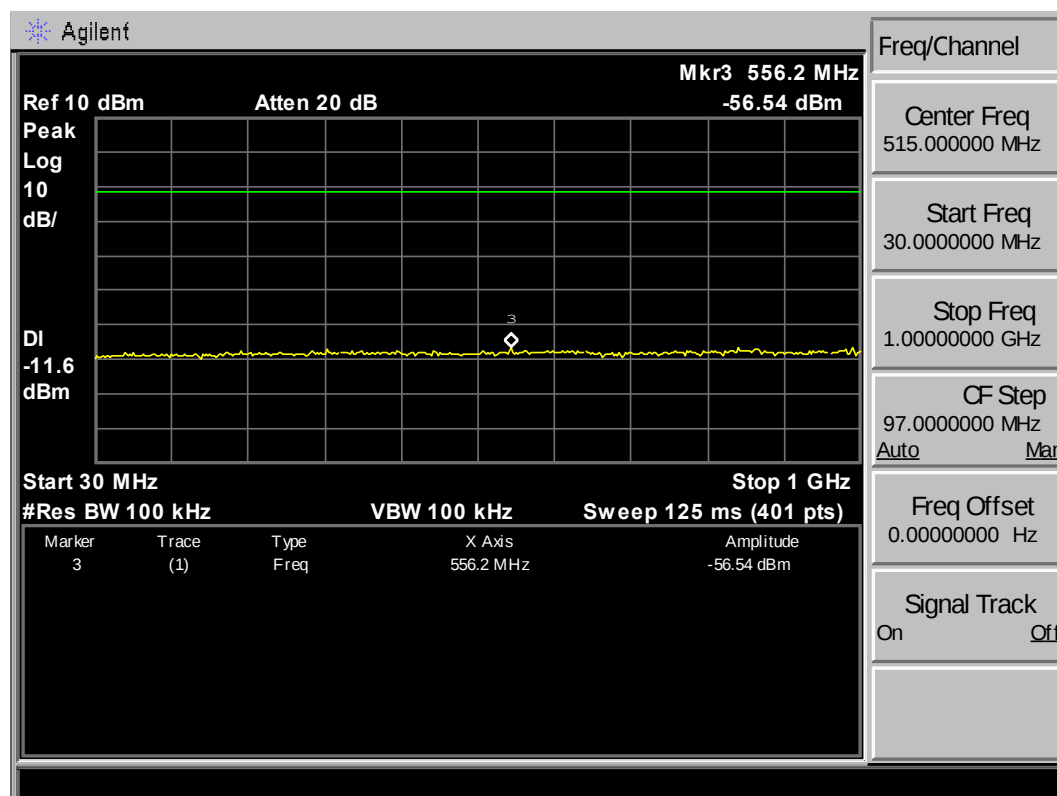


Figure 6: Test figure of Conducted Spurious Emissions, EDR (High)



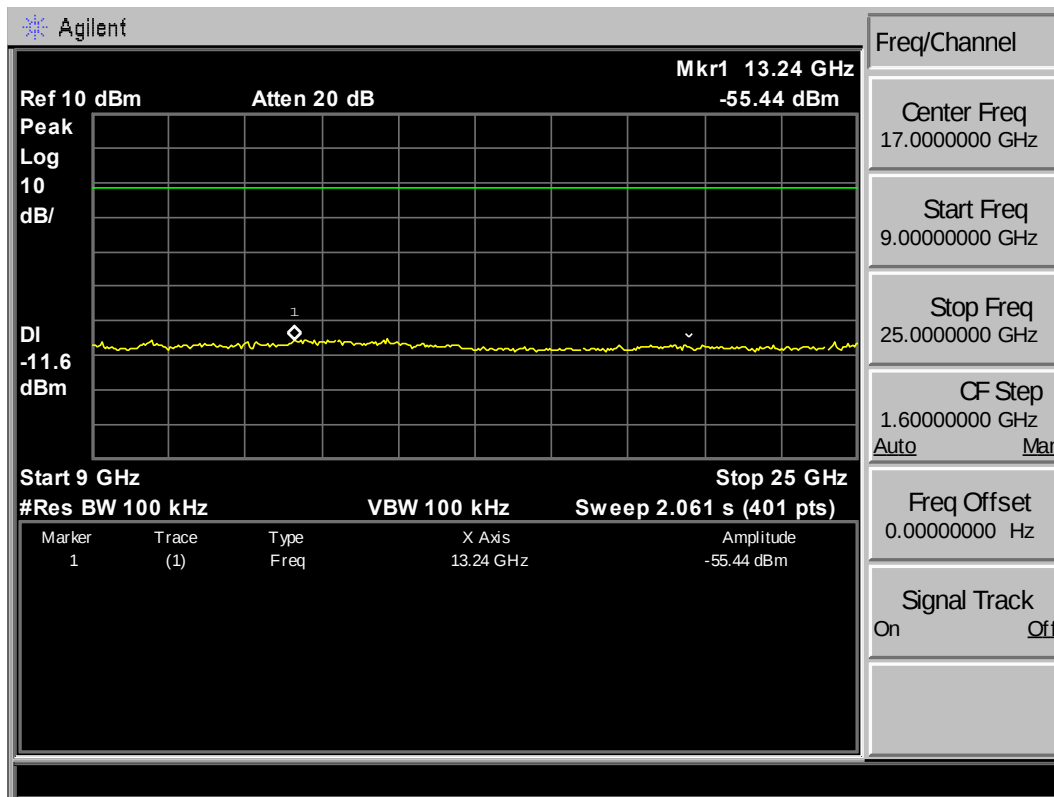
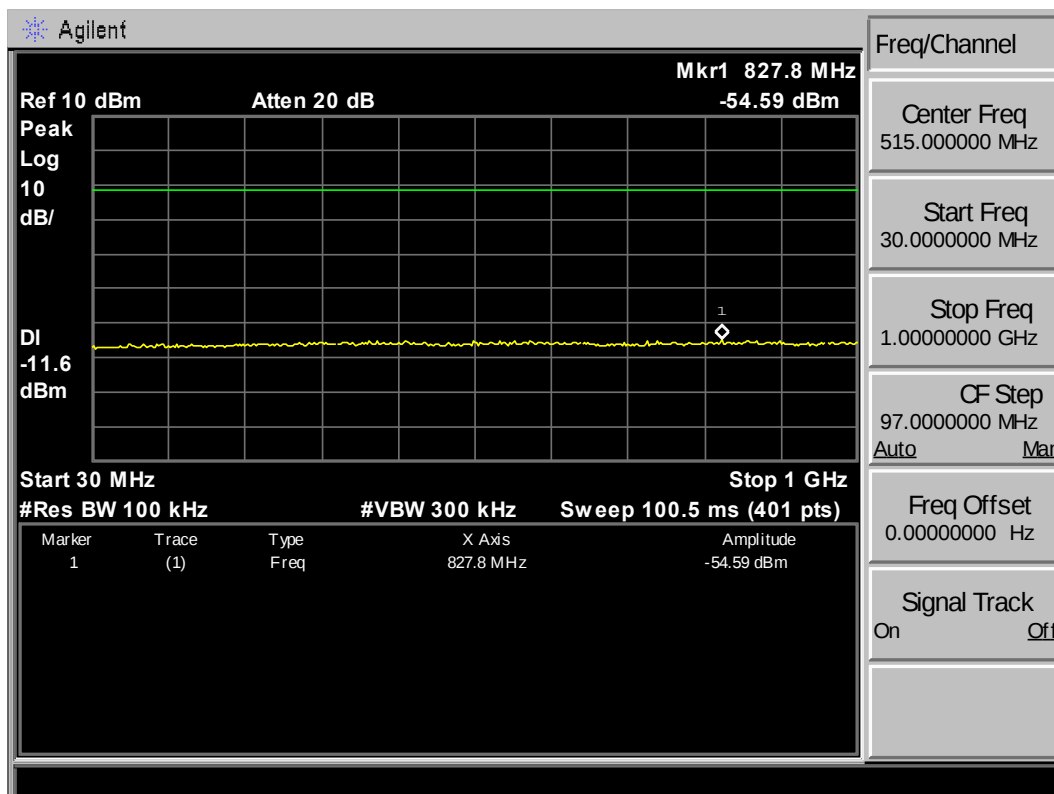


Figure 7: Test figure of Conducted Spurious Emissions, BLE (Low)



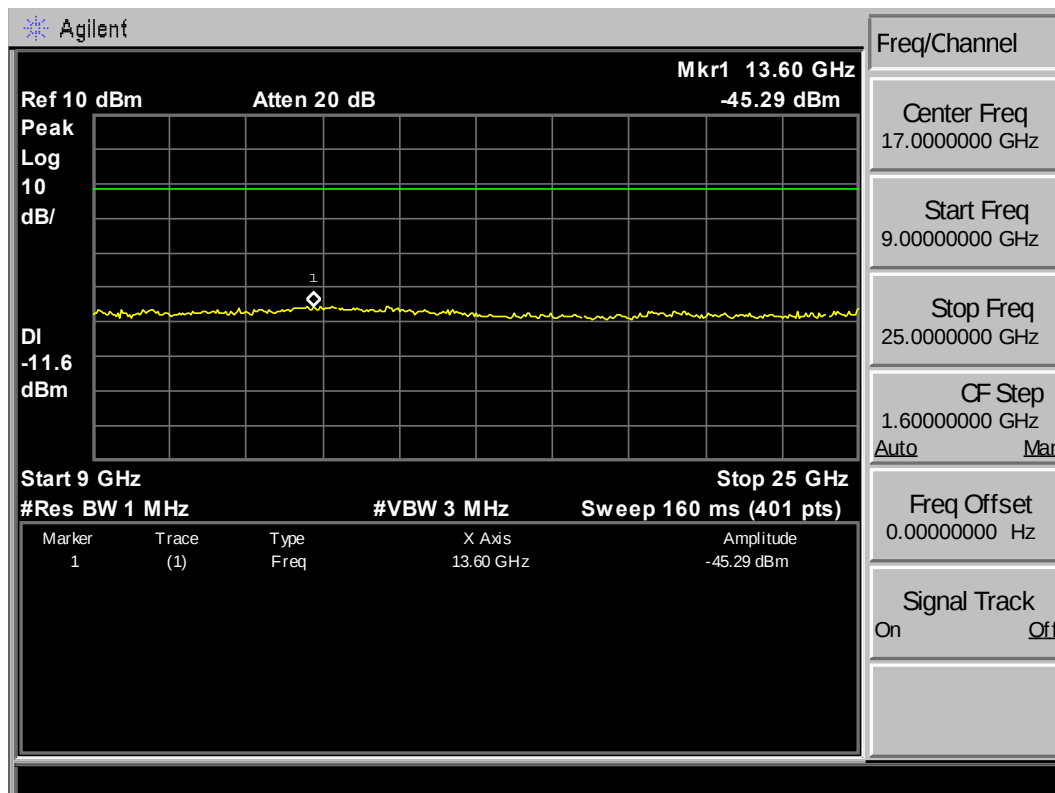
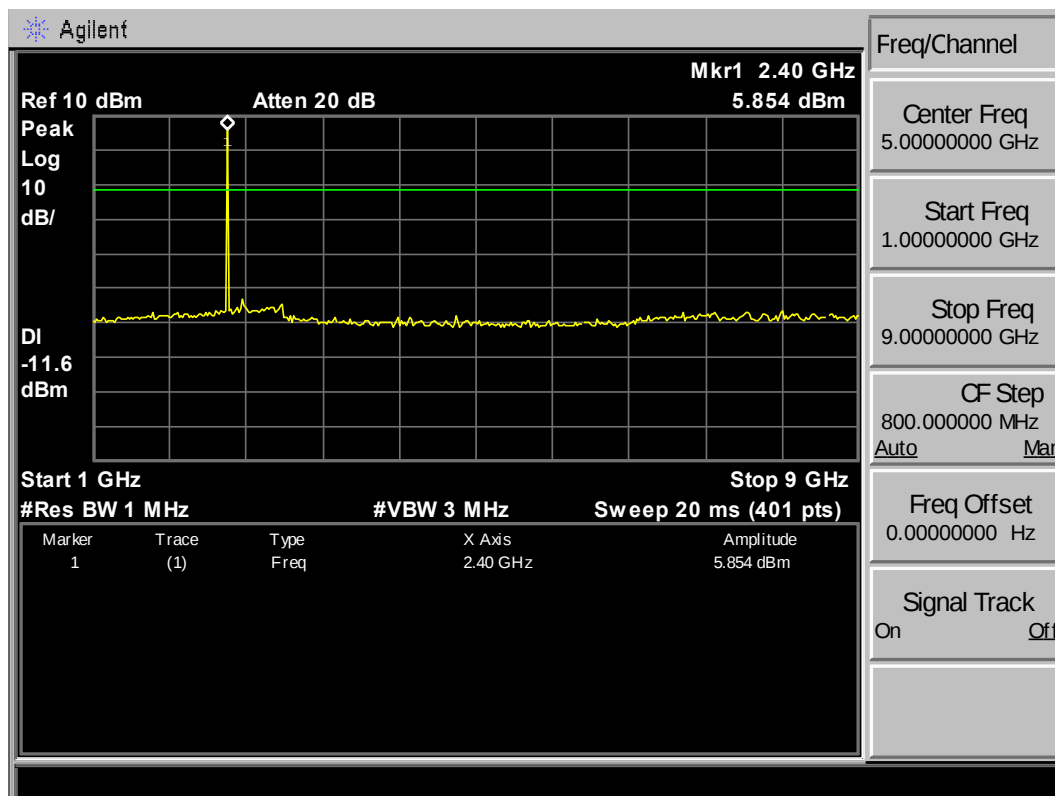
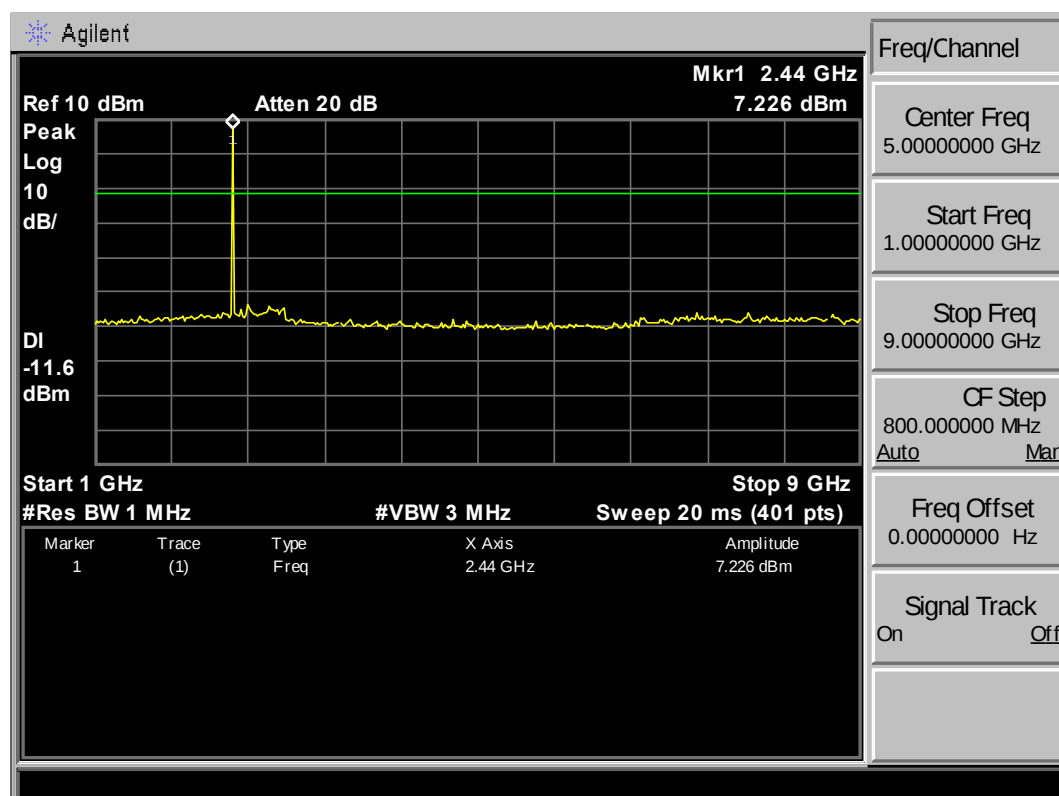
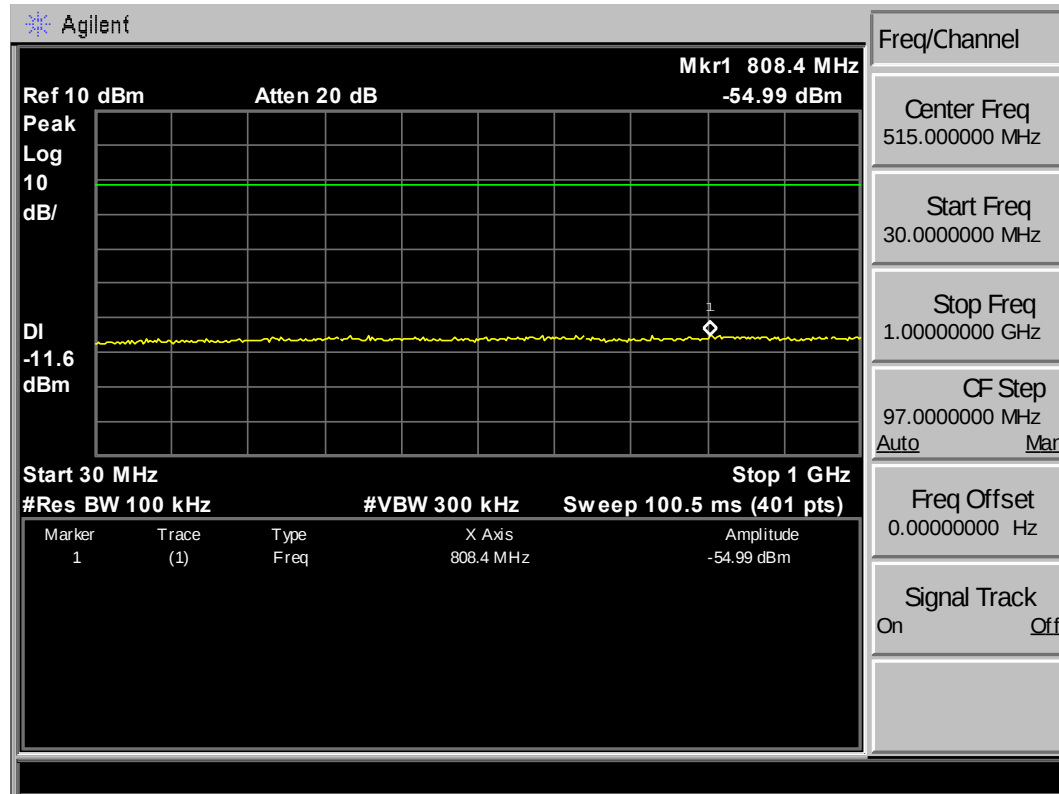


Figure 8: Test figure of Conducted Spurious Emissions, BLE (Mid)



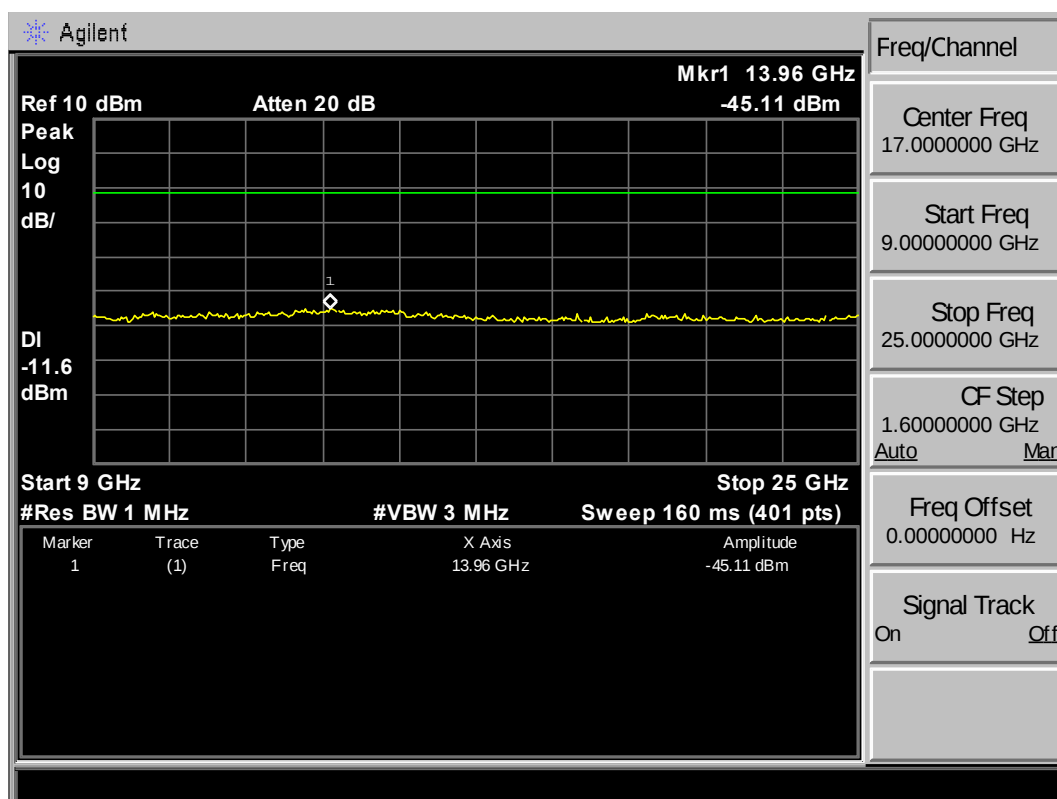
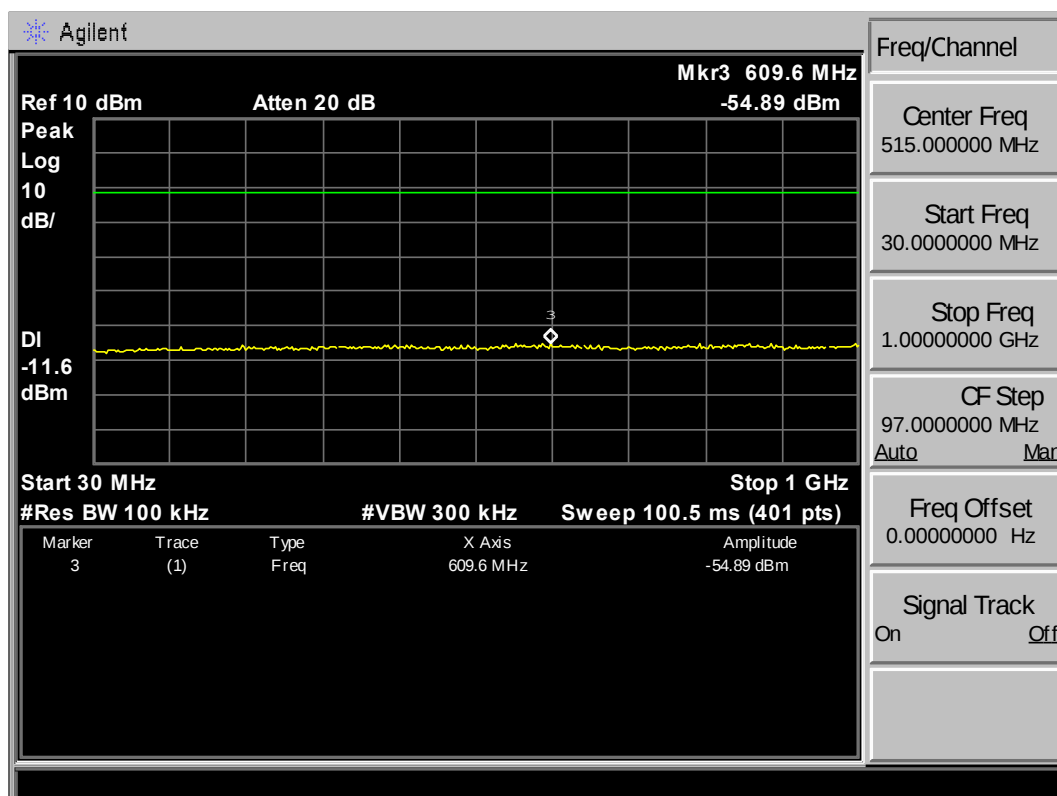


Figure 9: Test figure of Conducted Spurious Emissions, BLE (High)



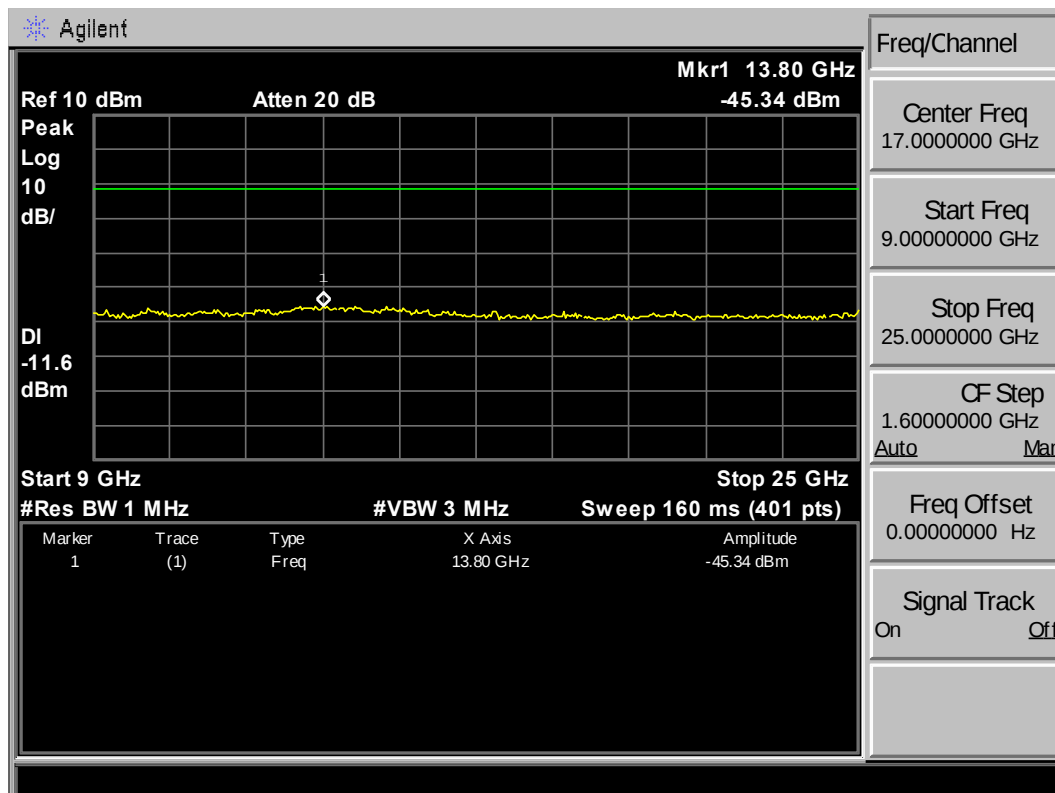
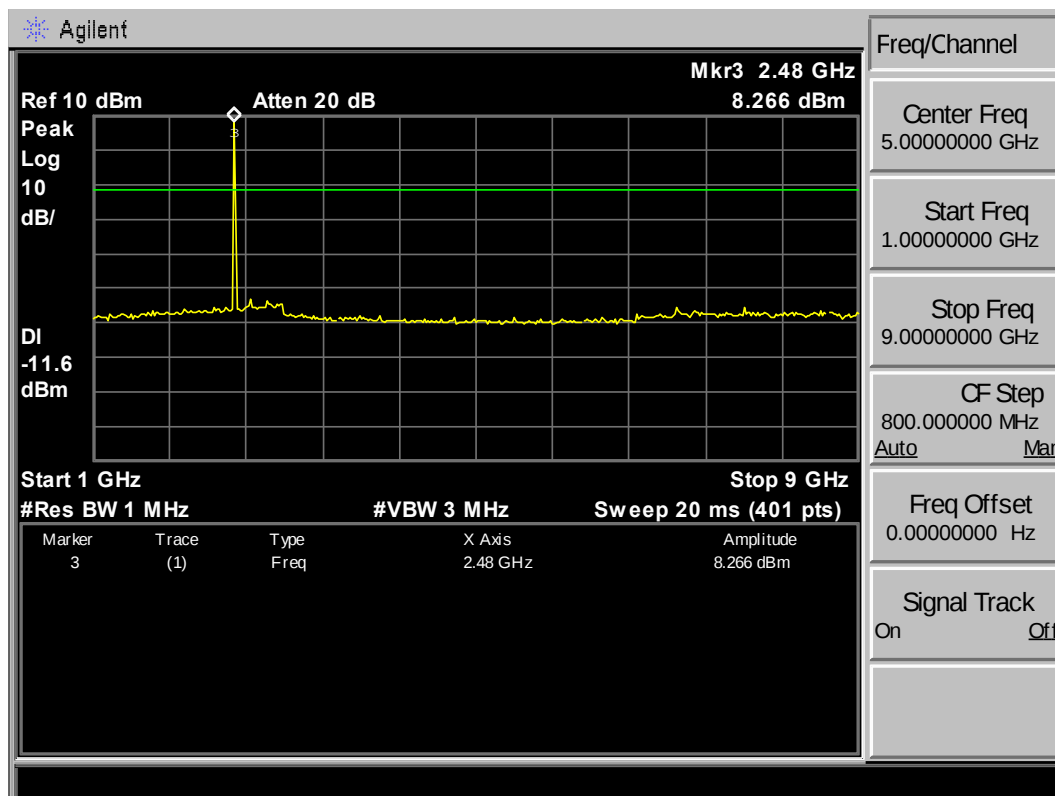


Figure 10: Test figure of Band Edge, BDR (Low)

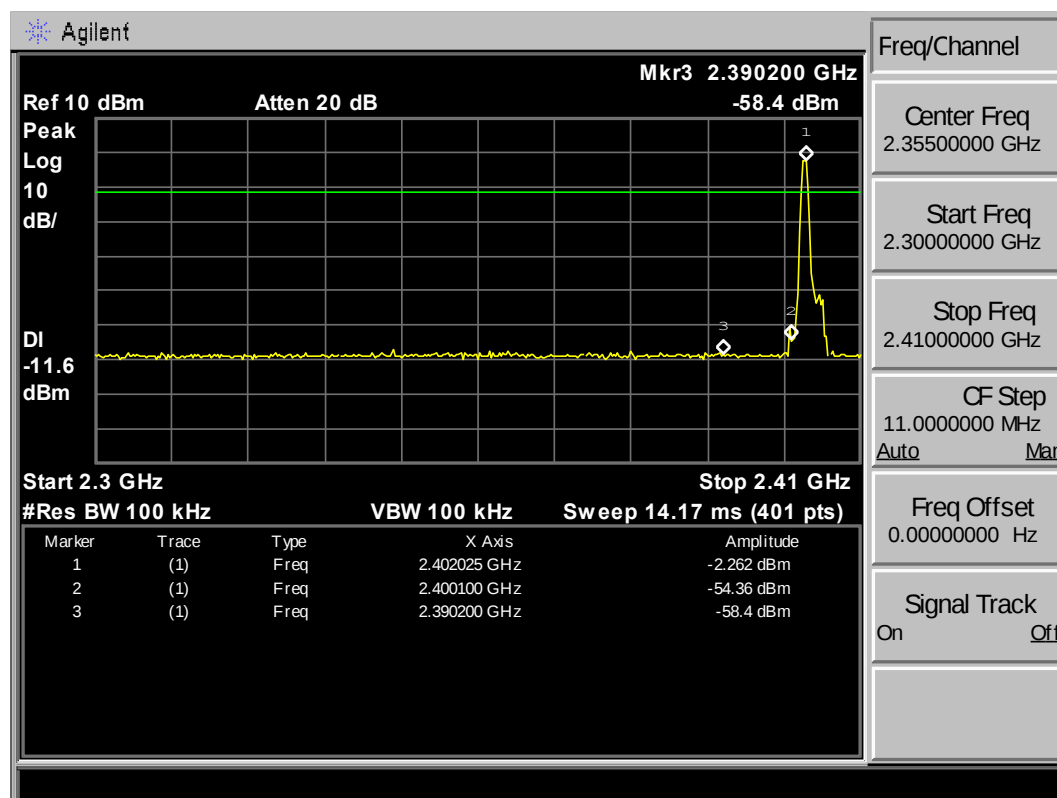


Figure 11: Test figure of Band Edge, BDR (High)

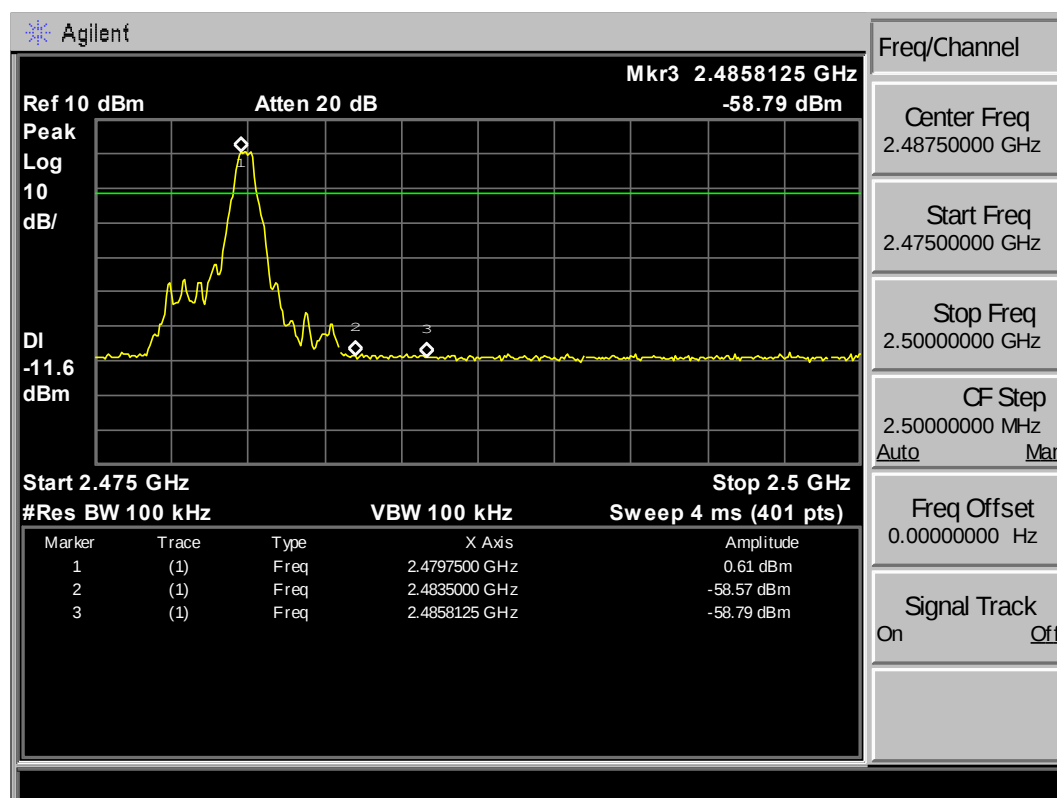


Figure 12: Test figure of Band Edge, EDR (Low)

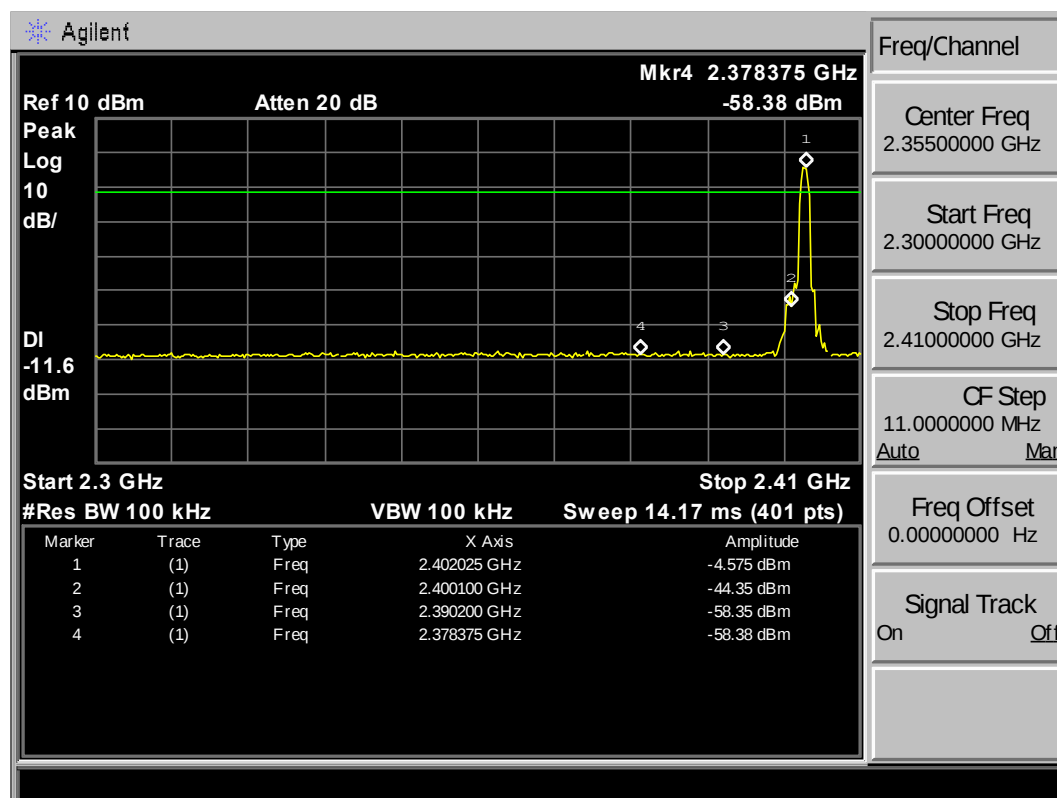


Figure 13: Test figure of Band Edge, EDR (High)

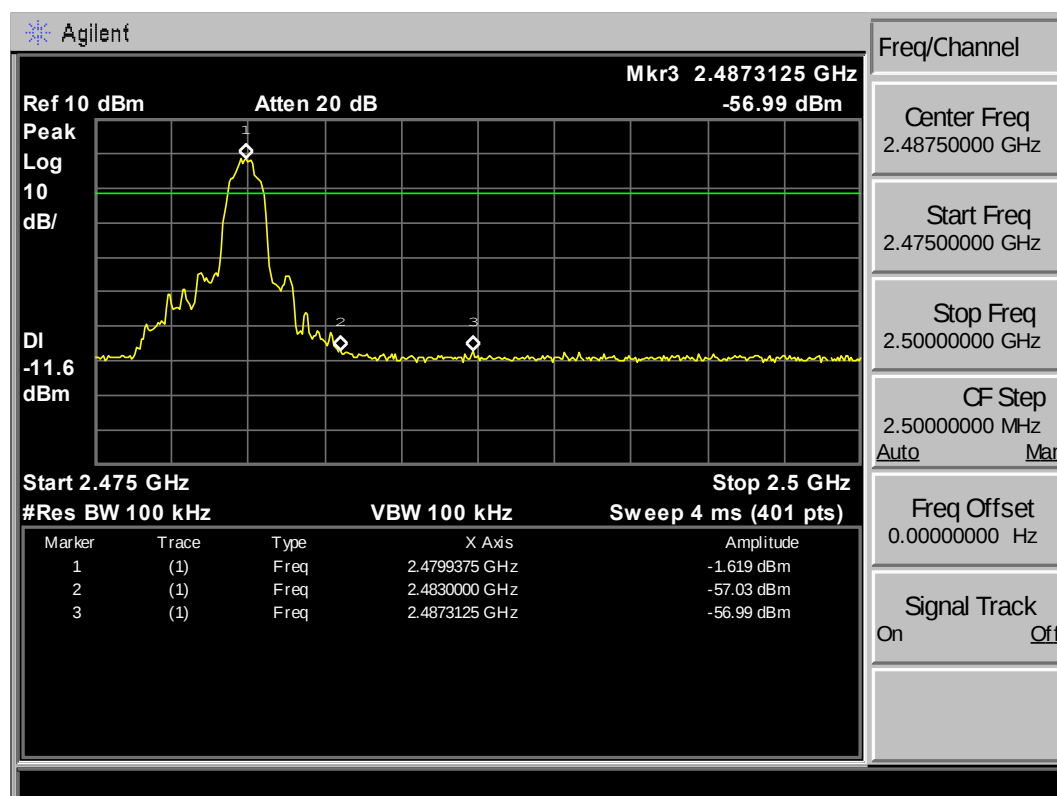


Figure 14: Test figure of Band Edge, BLE (Low)

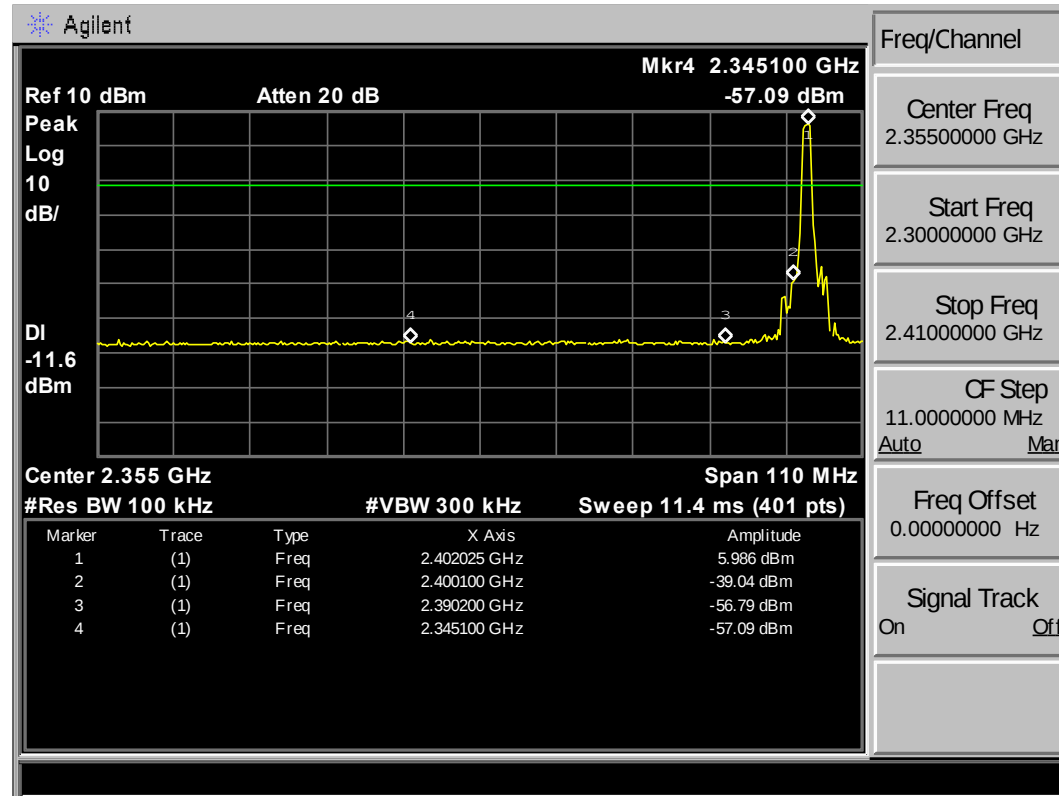


Figure 15: Test figure of Band Edge, BLE (High)

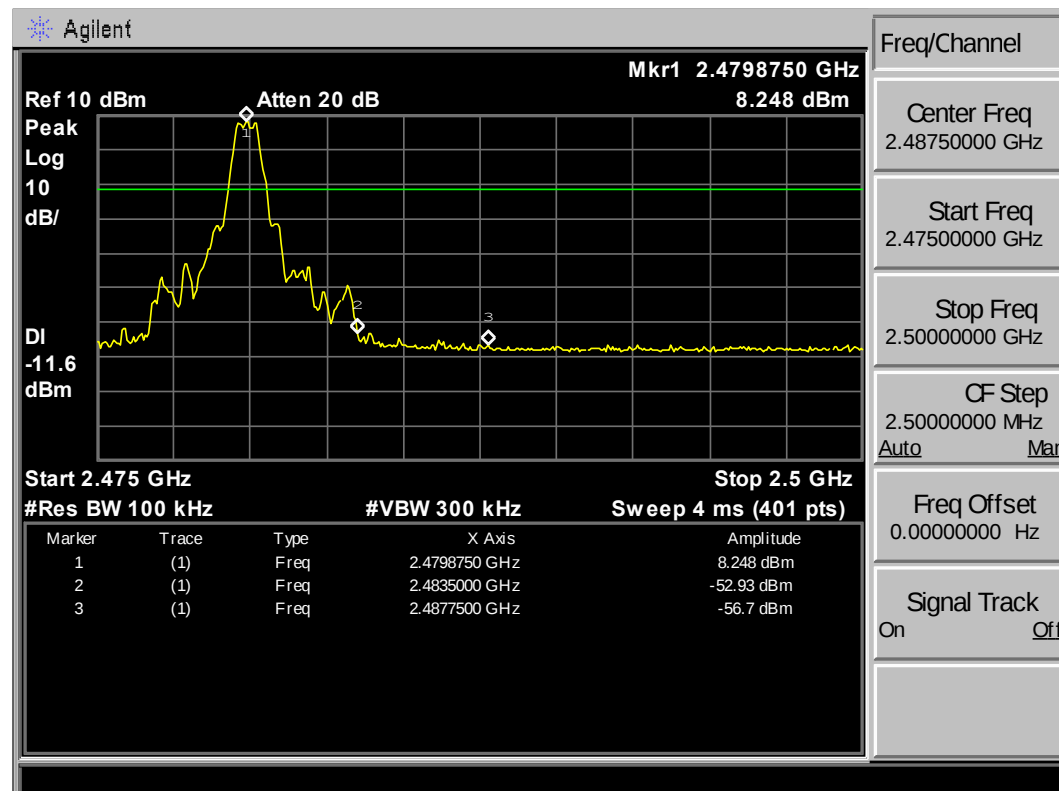
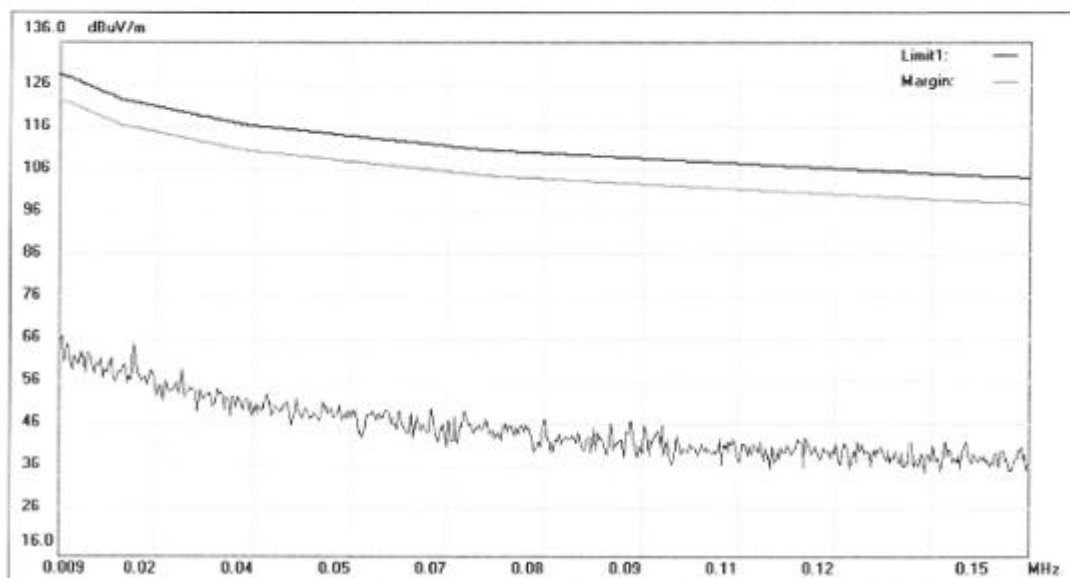


Figure 16: Test figure of Spurious Emissions (9kHz – 30MHz), BDR (Low)



966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:03:01
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	GFSK TX 2402MHz		





深圳康来士标准测试技术有限公司
Compliance Certification Services (ShenZhen) Inc.

地址: 广东省深圳市观澜镇环观南路18号深可达物流园10-1栋 TEL: 0755-28855000 FAX: 0755-29564902

966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:01:06
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	GFSK TX 2402MHz		

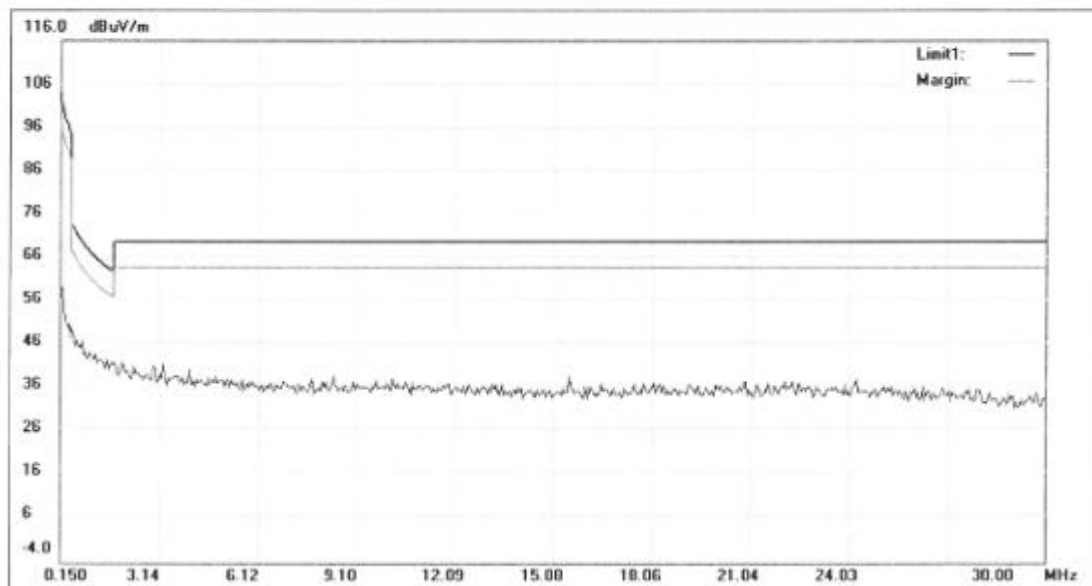
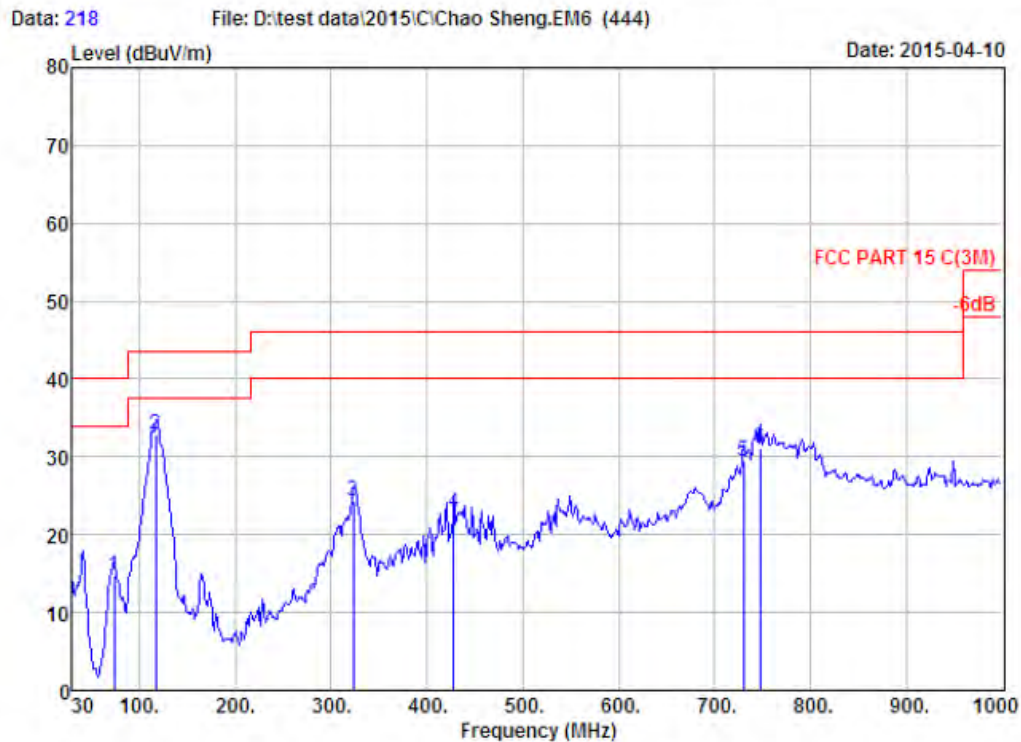


Figure 17: Test figure of Spurious Emissions (30MHz – 1GHz), BDR (Low), H

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 218
Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2402MHz

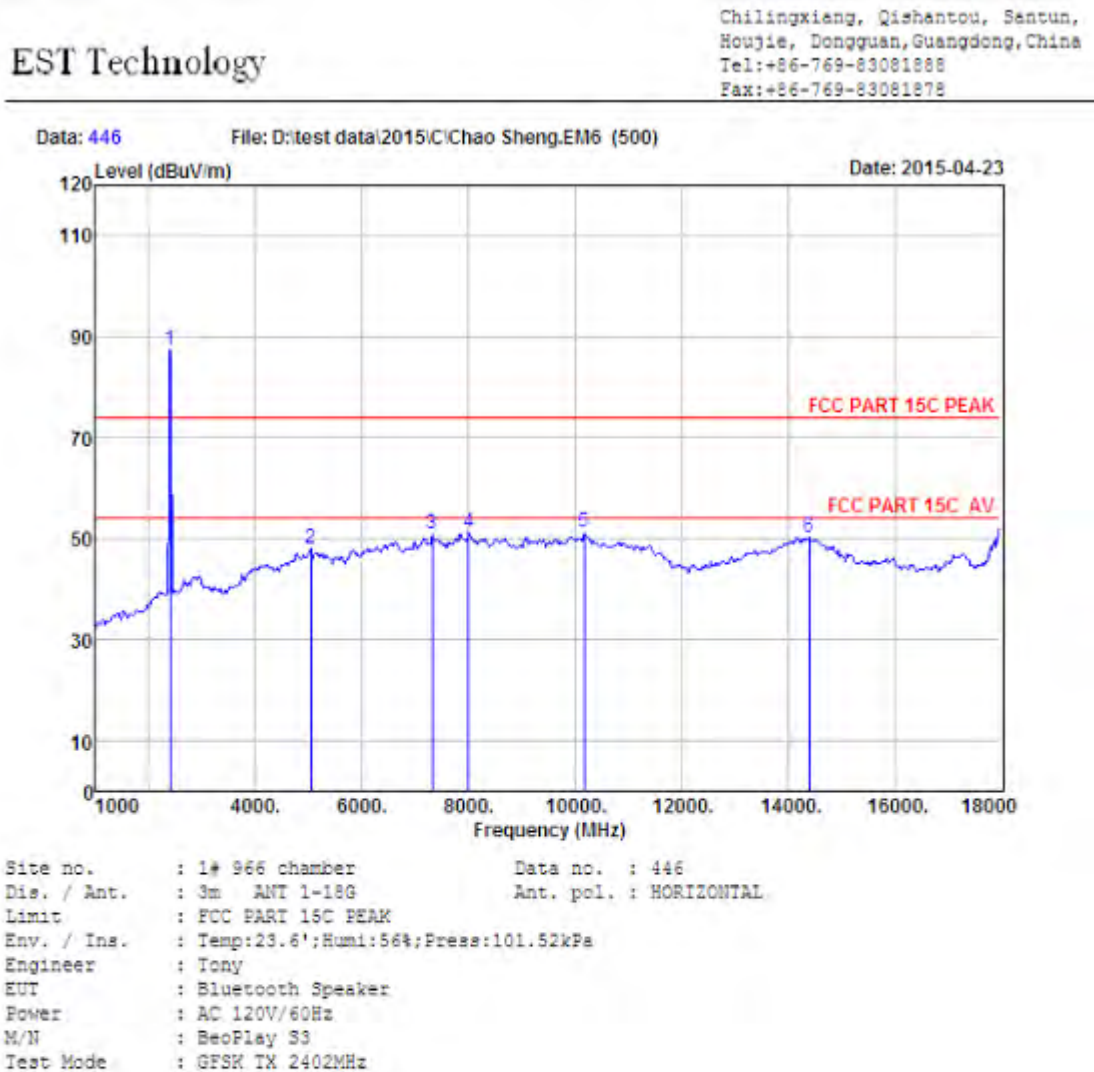
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	73.65	6.22	1.15	7.29	14.66	40.00	25.34	QP
2	117.30	11.02	1.47	20.32	32.81	43.50	10.69	QP
3	322.94	13.65	2.43	8.18	24.26	46.00	21.74	QP
4	427.70	16.11	2.85	3.92	22.88	46.00	23.12	QP
5	730.34	22.15	3.76	3.61	29.52	46.00	16.48	QP
6	747.80	22.22	3.91	5.00	31.13	46.00	14.87	QP

Figure 18: Test figure of Spurious Emissions (30MHz – 1GHz), BDR (Low), V



	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	41.64	11.75	0.85	18.61	31.21	40.00	8.79	QP
2	76.56	6.66	1.19	9.18	17.00	40.00	23.00	QP
3	119.24	11.11	1.42	13.24	25.77	43.50	17.73	QP
4	447.10	16.40	2.98	6.47	25.85	46.00	20.15	QP
5	684.75	20.33	3.61	7.94	31.88	46.00	14.12	QP
6	755.56	22.10	3.87	6.91	32.98	46.00	13.12	QP

Figure 19: Test figure of Spurious Emissions (1GHz –25GHz), BDR (Low),
H



	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.61	6.62	34.18	87.23	87.28	74.00	-13.28	Peak
2	5046.00	31.57	12.53	32.08	36.04	48.06	74.00	25.94	Peak
3	7324.00	36.55	11.57	31.99	34.69	50.82	74.00	23.18	Peak
4	8004.00	37.01	11.40	31.22	33.96	51.15	74.00	22.85	Peak
5	10180.00	38.42	11.49	32.11	33.31	51.11	74.00	22.89	Peak
6	14396.00	41.79	10.92	32.83	30.38	50.26	74.00	23.74	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

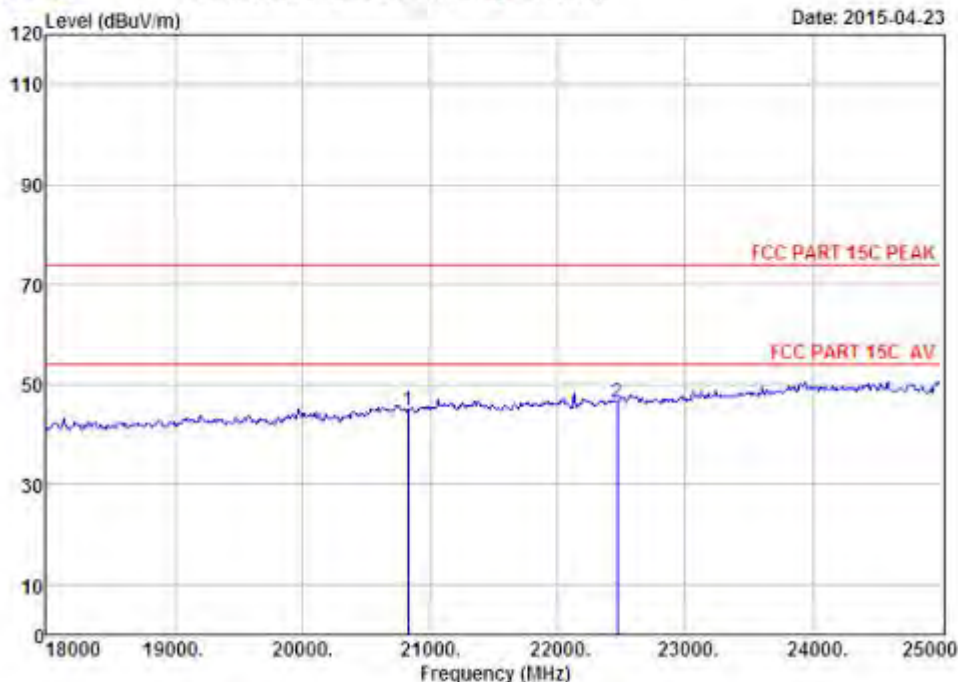
EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878

Data: 455

File: D:\test data\2015\C\Chao Sheng.EM6 (500)

Date: 2015-04-23



Site no. : 1# 966 chamber Data no. : 455
Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°;Hum:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2402MHz

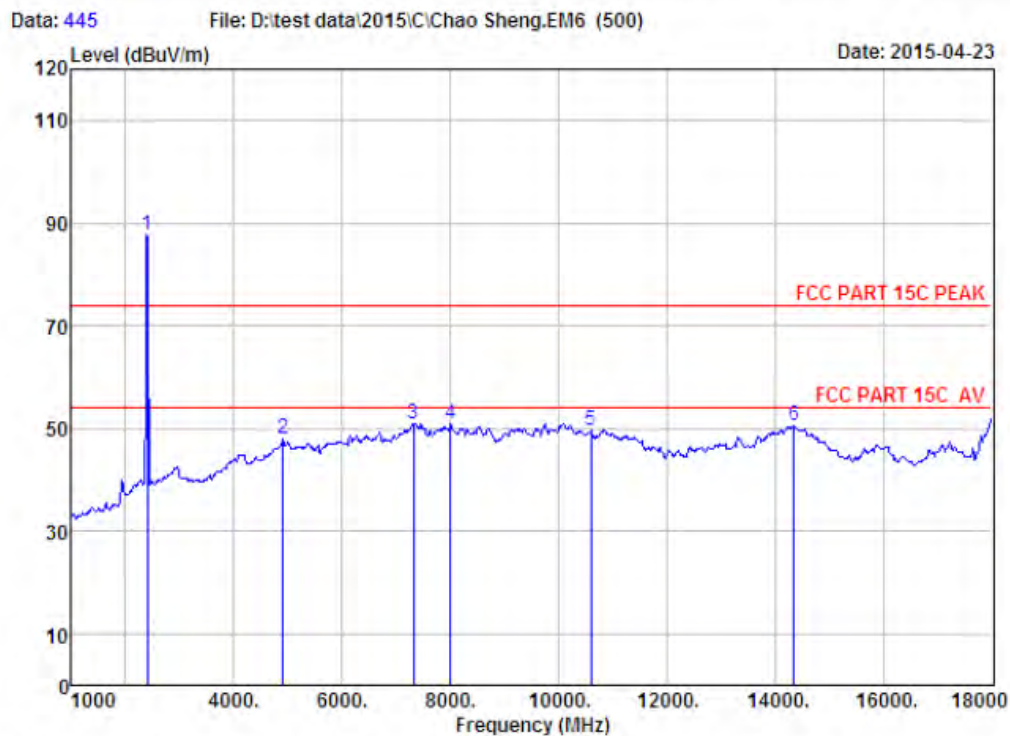
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	20828.00	46.20	20.05	35.96	14.62	44.91	74.00	29.09	Peak
2	22466.00	45.79	20.83	34.40	14.27	46.49	74.00	27.51	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 20: Test figure of Spurious Emissions (1GHz –25GHz), BDR (Low), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel:+86-769-83081888
Fax:+86-769-83081878



Site no. : 1# 966 chamber Data no. : 445
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°;Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.61	6.62	34.18	87.53	87.58	74.00	-13.58	Peak
2	4910.00	31.42	12.22	31.93	36.24	47.95	74.00	26.05	Peak
3	7324.00	36.55	11.57	31.99	34.85	50.98	74.00	23.02	Peak
4	8004.00	37.01	11.40	31.22	33.76	50.95	74.00	23.05	Peak
5	10605.00	39.09	11.31	32.91	32.12	49.61	74.00	24.39	Peak
6	14345.00	41.76	10.92	32.93	30.74	50.49	74.00	23.51	Peak

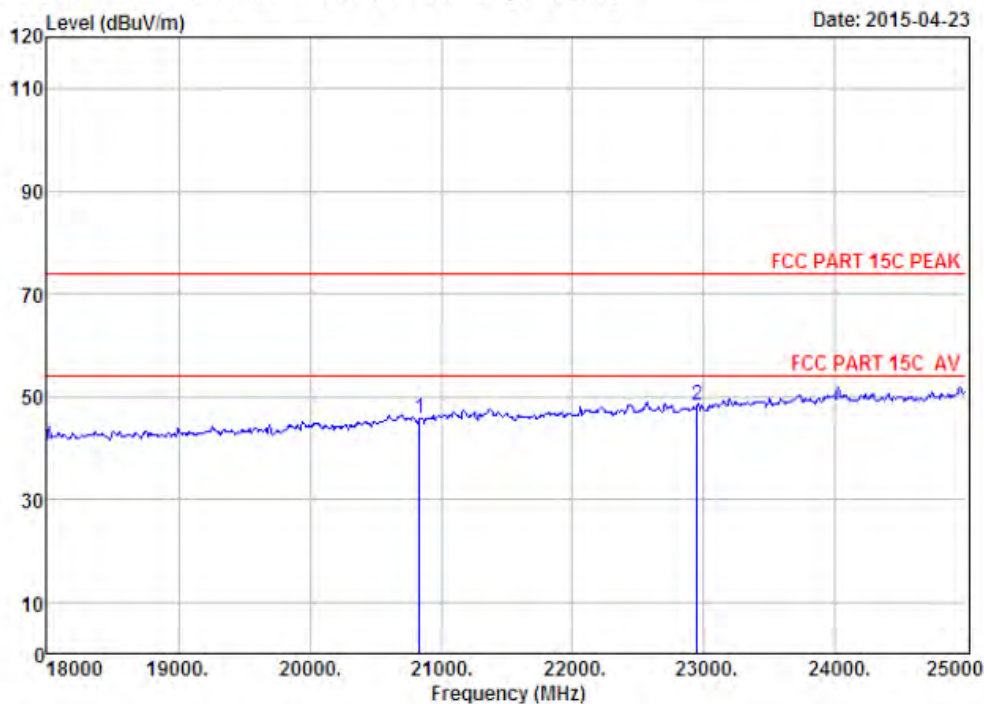
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878

Data: 456 File: D:\test data\2015\CI\Chao Sheng.EM6 (500)

Date: 2015-04-23



Site no. : 1# 966 chamber Data no. : 456
Dis. / Ant. : 3m ANI ABOVE 18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	20835.00	46.20	20.06	35.96	15.55	45.85	74.00	28.15	Peak
2	22949.00	45.62	21.12	33.90	15.49	48.33	74.00	25.67	Peak

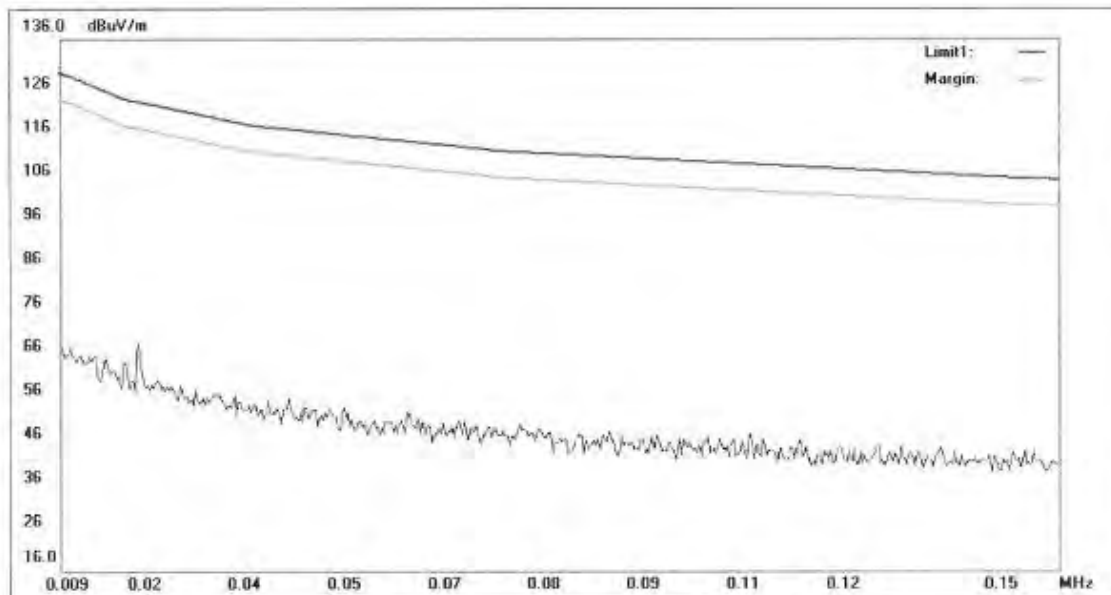
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 21: Test figure of Spurious Emissions (9kHz – 30MHz), BDR (Mid)



966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:05:54
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	GFSK TX 2441MHz		





深圳康来士标准测试技术有限公司
Compliance Certification Services (ShenZhen) Inc.

— 17025 认证 国家质量监督检验检疫总局 国家认证认可监督管理委员会 认证证书 批准 0270301700560003 有效日期 2015-07-06 至 2018-07-05

966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:07:36
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	GFSK TX 2441MHz		

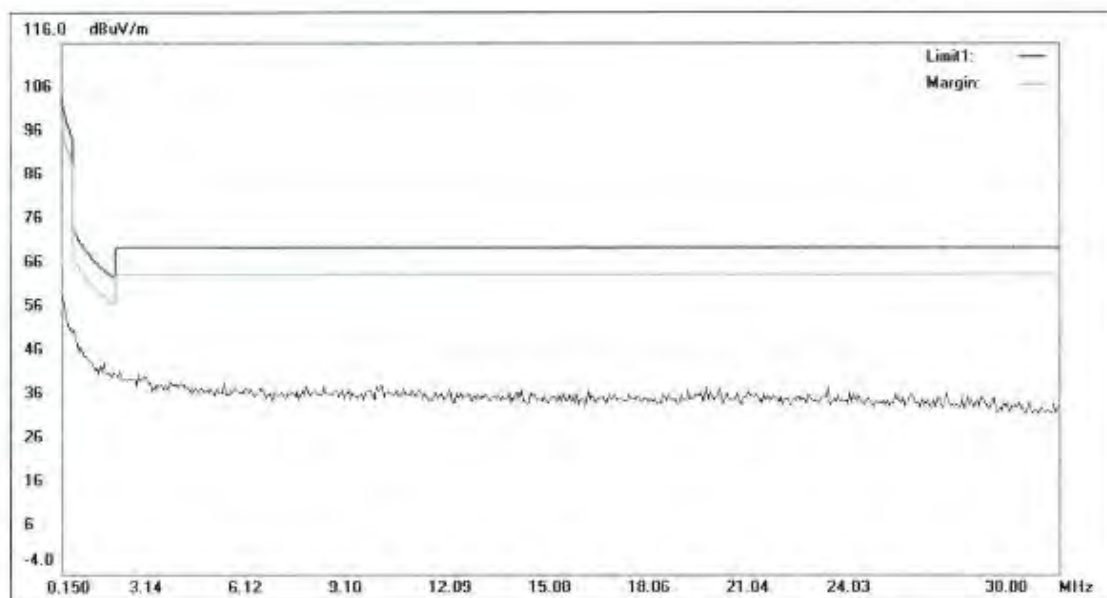
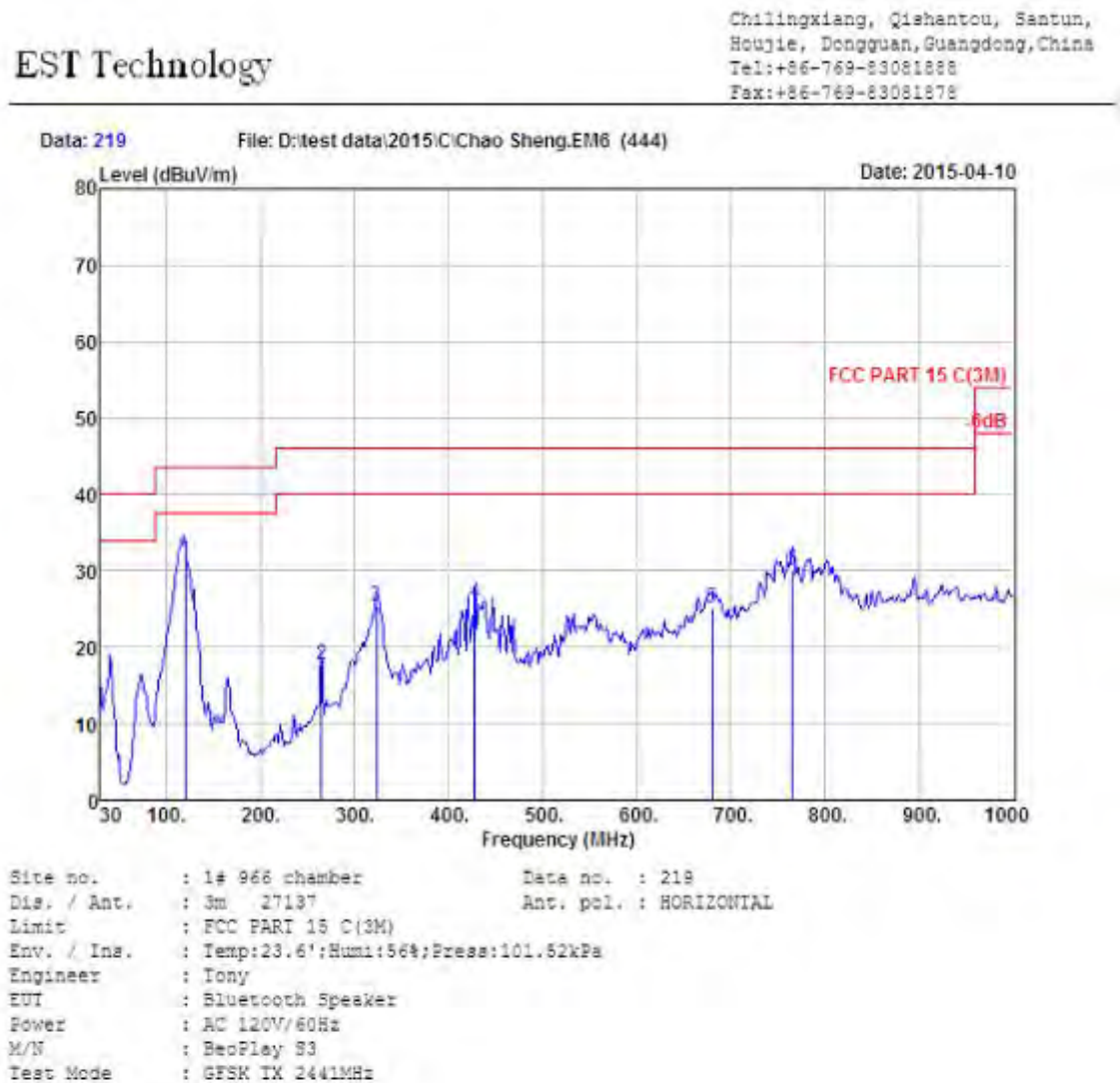
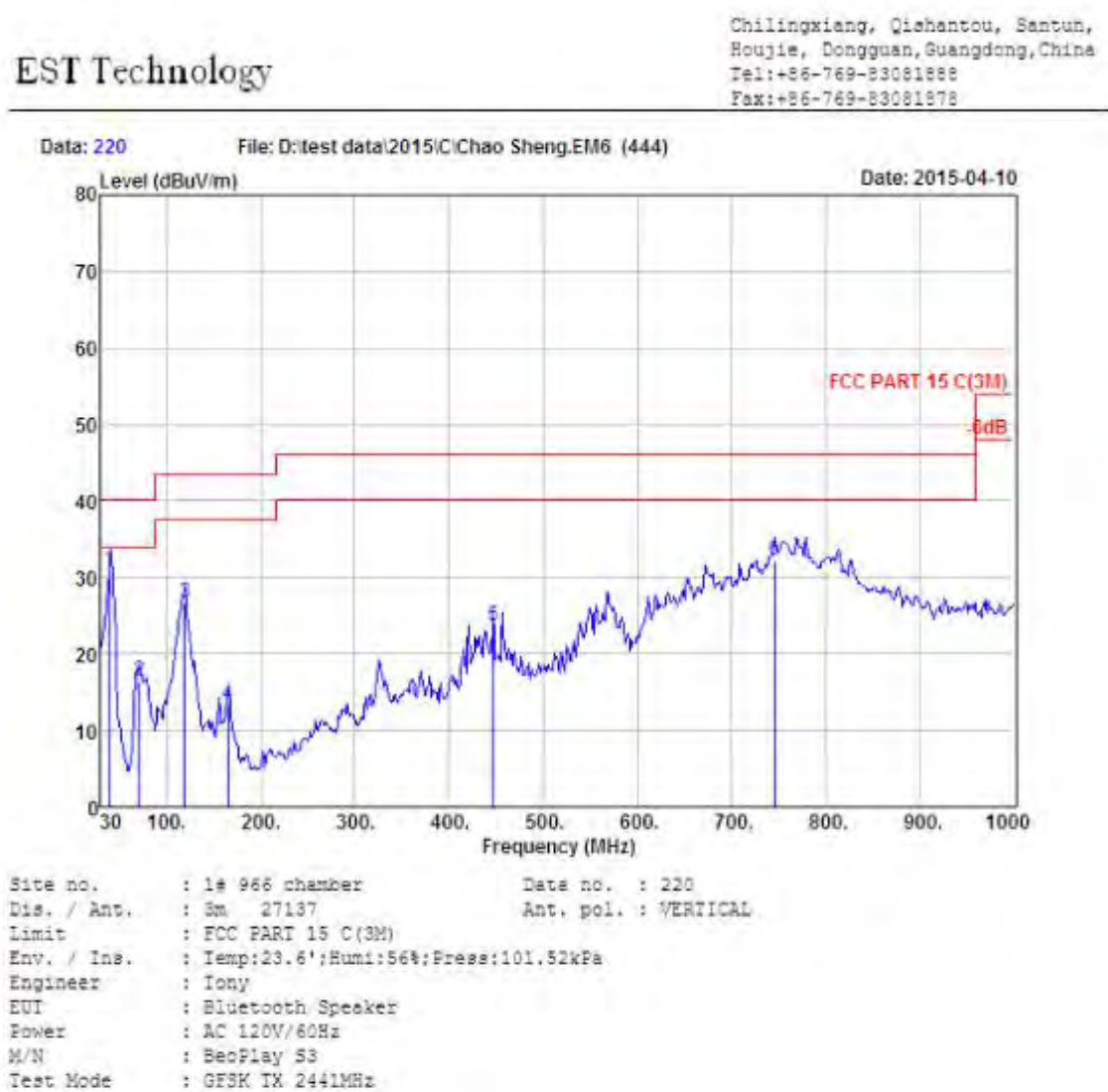


Figure 22: Test figure of Spurious Emissions (30MHz – 1GHz), BDR (Mid), H



	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	120.21	11.16	1.41	18.72	31.29	43.50	12.21	QP
2	264.74	12.94	2.28	2.49	17.71	46.00	28.29	QP
3	322.94	13.65	2.43	9.25	25.33	46.00	20.67	QP
4	427.70	16.11	2.85	6.92	25.88	46.00	20.12	QP
5	679.90	20.29	3.66	1.27	25.22	46.00	20.78	QP
6	765.26	22.04	3.86	4.15	30.05	46.00	15.95	QP

Figure 23: Test figure of Spurious Emissions (30MHz – 1GHz), BDR (Mid), V

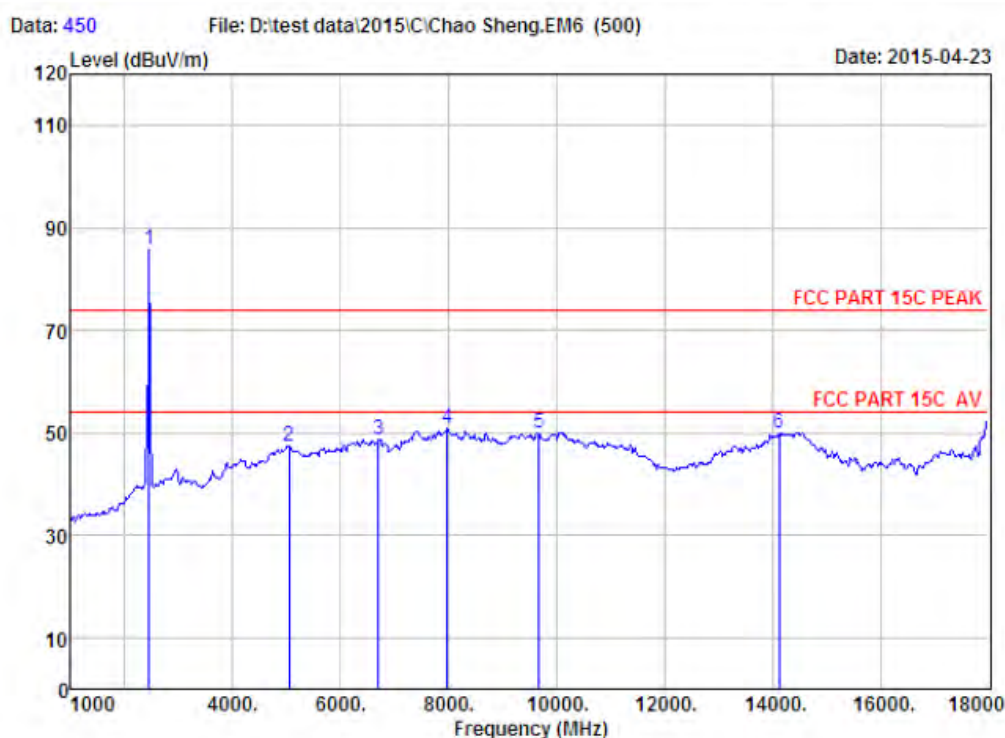


	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	39.70	12.90	0.81	17.20	30.91	40.00	9.09	QP
2	70.74	5.32	1.04	9.63	16.49	40.00	23.51	QP
3	119.24	11.11	1.42	14.21	26.74	43.50	16.76	QP
4	165.80	9.66	1.68	2.21	13.55	43.50	29.95	QP
5	447.10	16.40	2.98	4.24	23.62	46.00	22.38	QP
6	745.96	22.26	3.90	6.10	32.26	46.00	13.74	QP

Figure 24: Test figure of Spurious Emissions (1GHz –25GHz), BDR (Mid), H

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 450
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.00	27.60	6.67	34.12	85.72	85.87	74.00	-11.87	Peak
2	5046.00	31.57	12.53	32.08	35.45	47.47	74.00	26.53	Peak
3	6695.00	34.49	11.95	32.23	34.33	48.54	74.00	25.46	Peak
4	7970.00	36.94	11.41	31.25	33.91	51.01	74.00	22.99	Peak
5	9670.00	38.01	11.67	31.88	32.23	50.03	74.00	23.97	Peak
6	14124.00	41.57	10.91	33.59	31.10	49.99	74.00	24.01	Peak

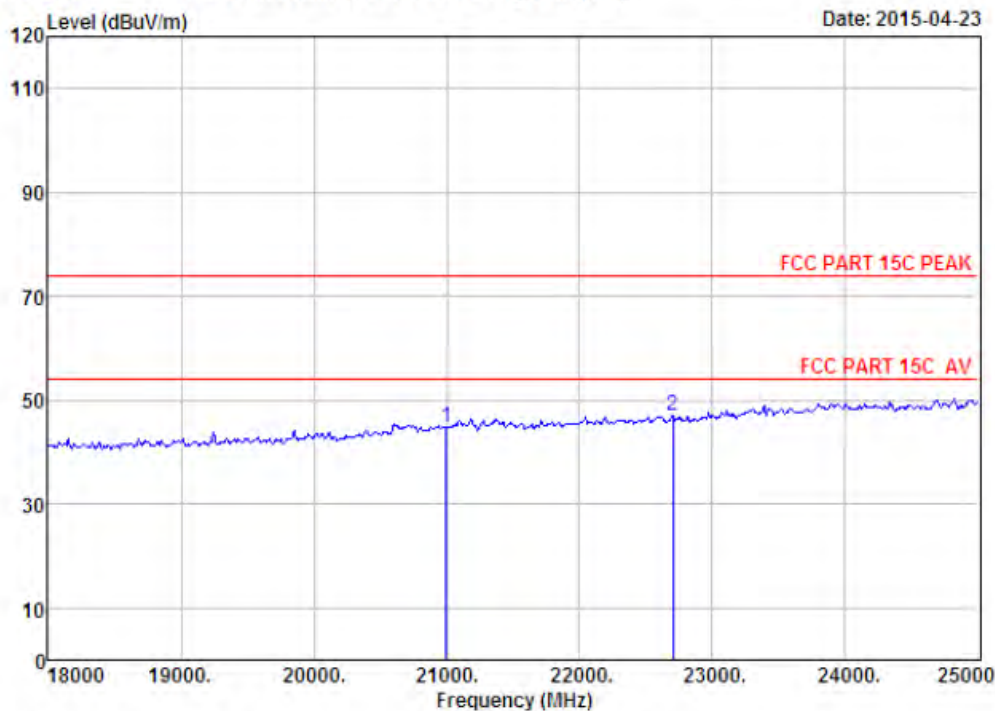
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878

Data: 458 File: D:\test data\2015\Chao Sheng.EM6 (500)

Date: 2015-04-23



Site no. : 1# 966 chamber Data no. : 458
Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°;Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2441MHz

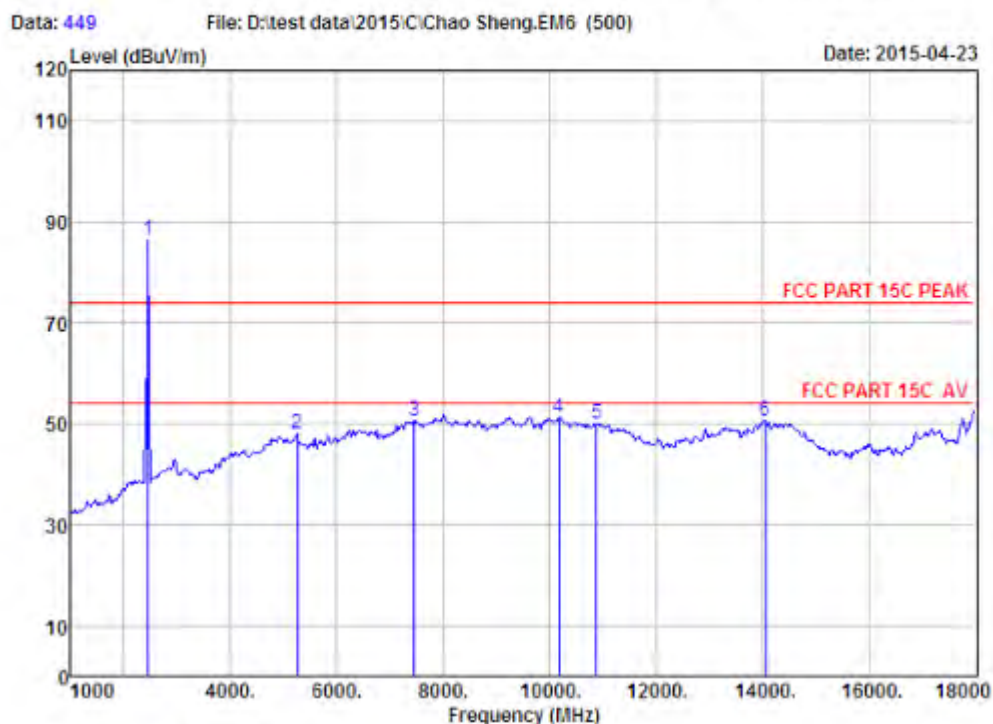
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	20996.00	46.30	20.13	35.80	14.33	44.96	74.00	29.04	Peak
2	22704.00	45.72	20.98	34.17	14.53	47.06	74.00	26.94	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 25: Test figure of Spurious Emissions (1GHz –25GHz), BDR (Mid), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081278



Site no. : 1# 966 chamber Data no. : 449
Dis. / Ant. : 3m ANI 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.00	27.60	6.67	34.12	86.20	86.35	74.00	-12.35	Peak
2	5250.00	31.69	12.29	32.19	36.22	48.01	74.00	25.99	Peak
3	7460.00	36.52	11.61	31.91	34.20	50.42	74.00	23.58	Peak
4	10180.00	38.42	11.49	32.11	33.55	51.35	74.00	22.65	Peak
5	10894.00	39.41	11.29	33.46	32.66	49.90	74.00	24.10	Peak
6	14056.00	41.51	10.90	33.80	32.00	50.61	74.00	23.39	Peak

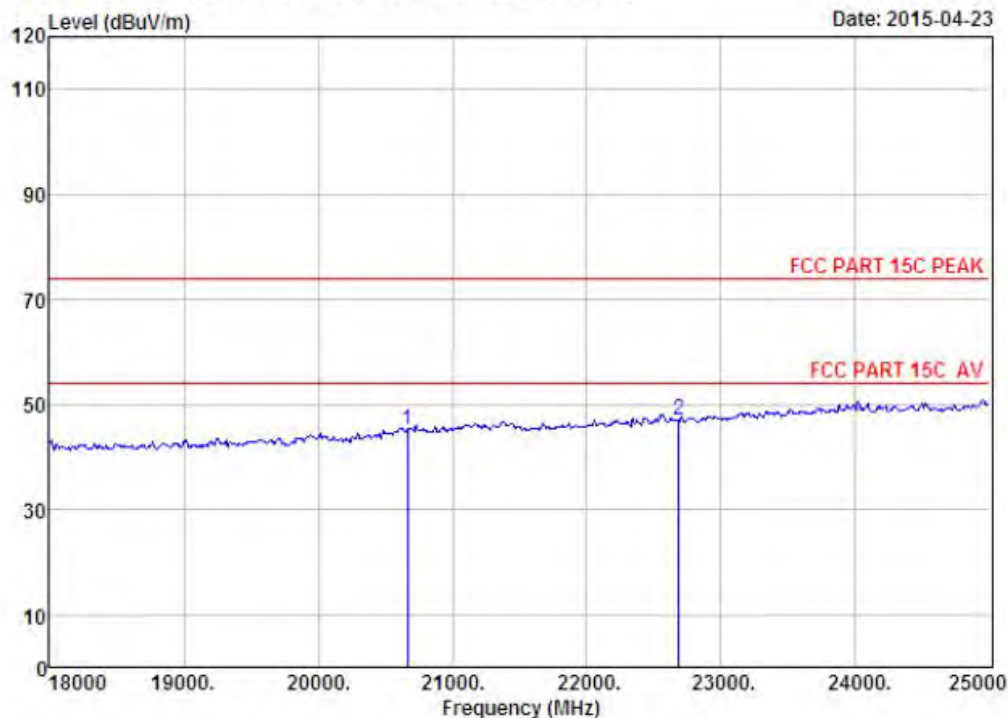
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878

Data: 457 File: D:\test data\2015\CI\Chao Sheng.EM6 (500)

Date: 2015-04-23



Site no. : 1# 966 chamber Data no. : 457
Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	20667.00	46.10	19.98	36.09	15.25	45.24	74.00	28.76	Peak
2	22683.00	45.73	20.96	34.19	14.39	46.89	74.00	27.11	Peak

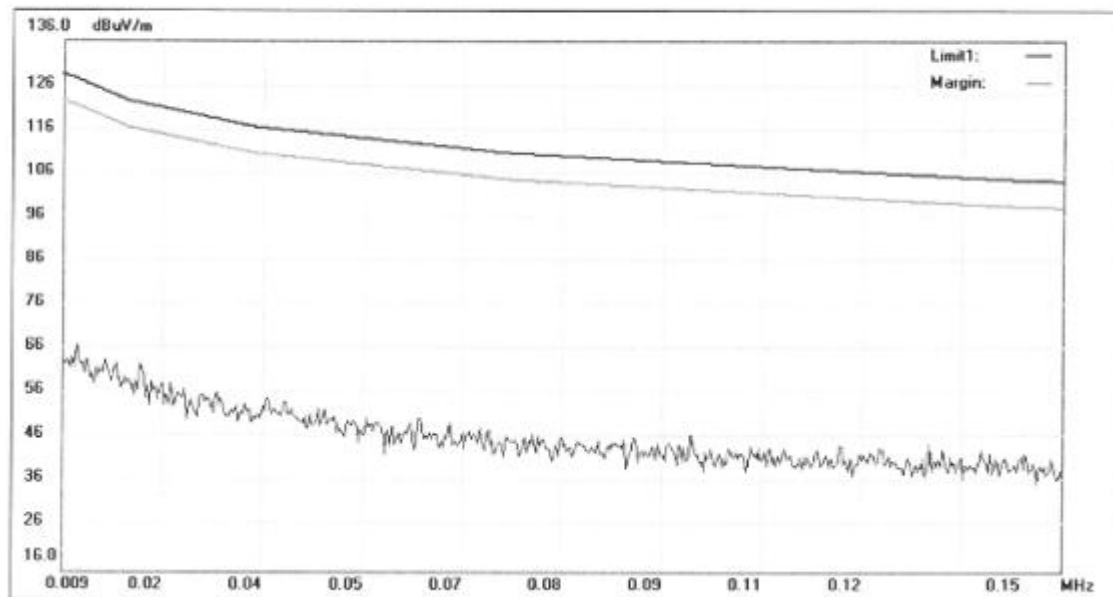
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 26: Test figure of Spurious Emissions (9kHz – 30MHz), BDR (High)



966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:10:43
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	GFSK TX 2480MHz		





深圳康来士标准测试技术有限公司
Compliance Certification Services (ShenZhen) Inc.

地址: 广东省深圳市观澜镇环观南路18号铭可达科技园10-1栋 TEL: 0755-28055000 FAX: 0755-29564902

966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:09:58
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	GFSK TX 2480MHz		

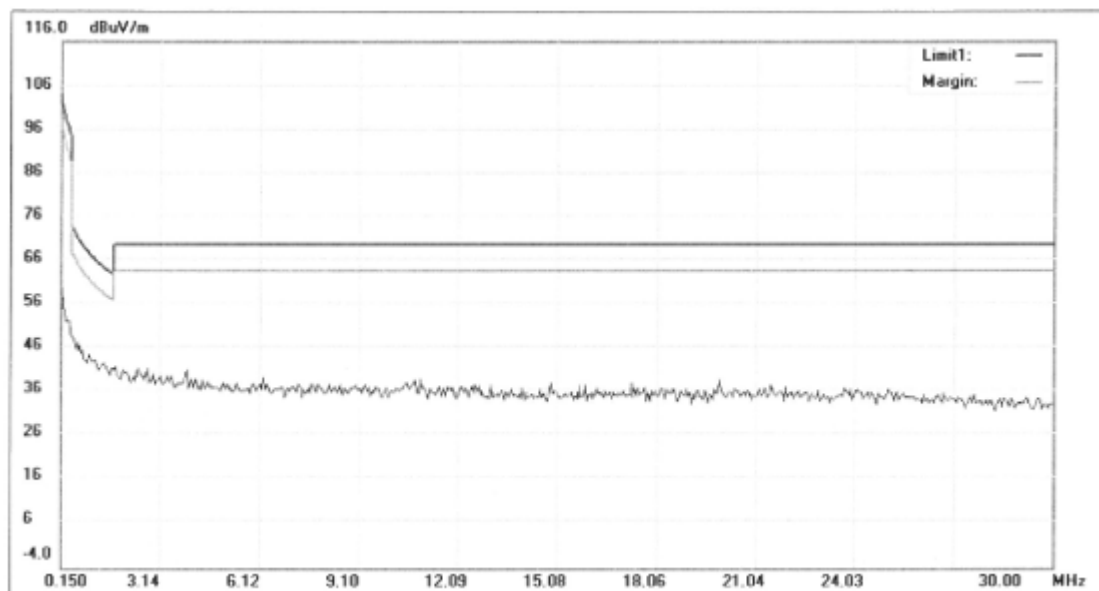
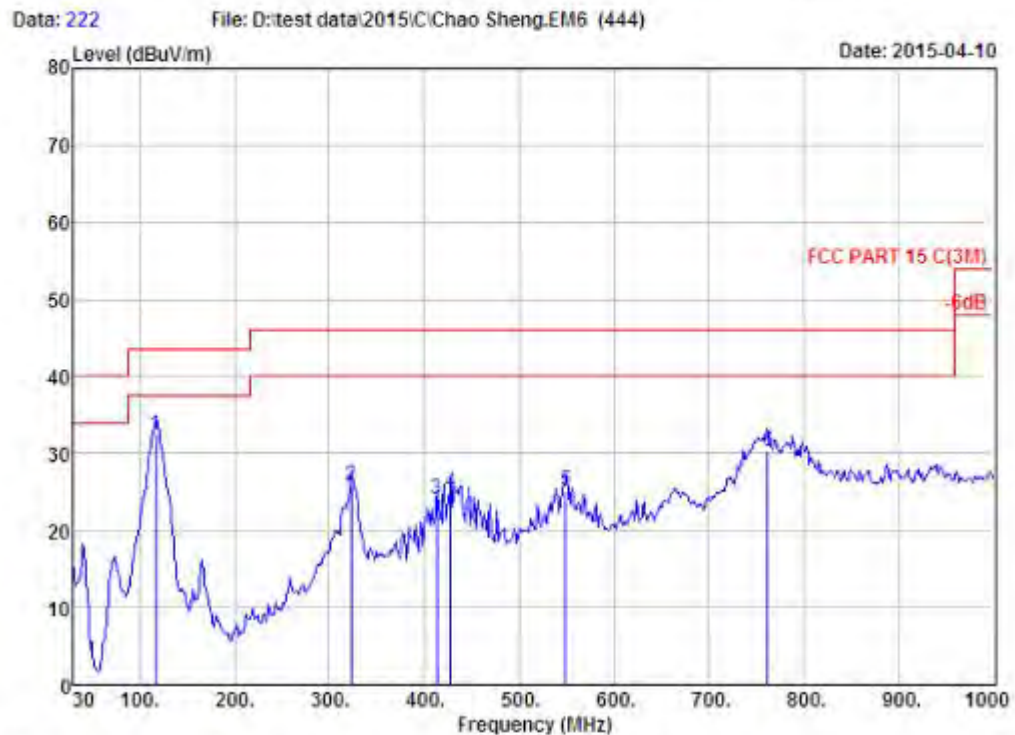


Figure 27: Test figure of Spurious Emissions (30MHz – 1GHz), BDR (High), H

EST Technology
Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



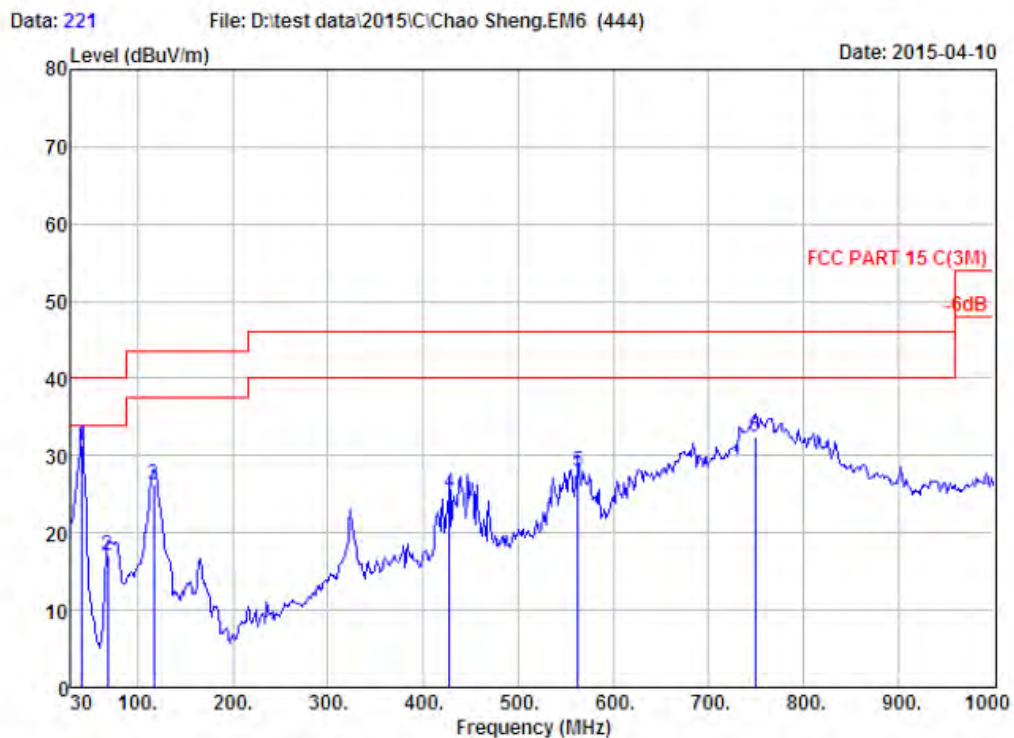
Site no. : 1# 966 chamber Data no. : 222
Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:23.6° Humi:56% Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	117.30	11.02	1.47	19.99	32.48	43.50	11.02	QP
2	322.94	13.65	2.43	9.69	25.77	46.00	20.23	QP
3	413.15	16.29	2.69	5.22	24.20	46.00	21.80	QP
4	427.70	16.11	2.85	5.94	24.90	46.00	21.10	QP
5	548.95	19.45	3.26	2.51	25.22	46.00	20.78	QP
6	762.35	22.04	3.92	4.30	30.26	46.00	15.74	QP

Figure 28: Test figure of Spurious Emissions (30MHz – 1GHz), BDR (High), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



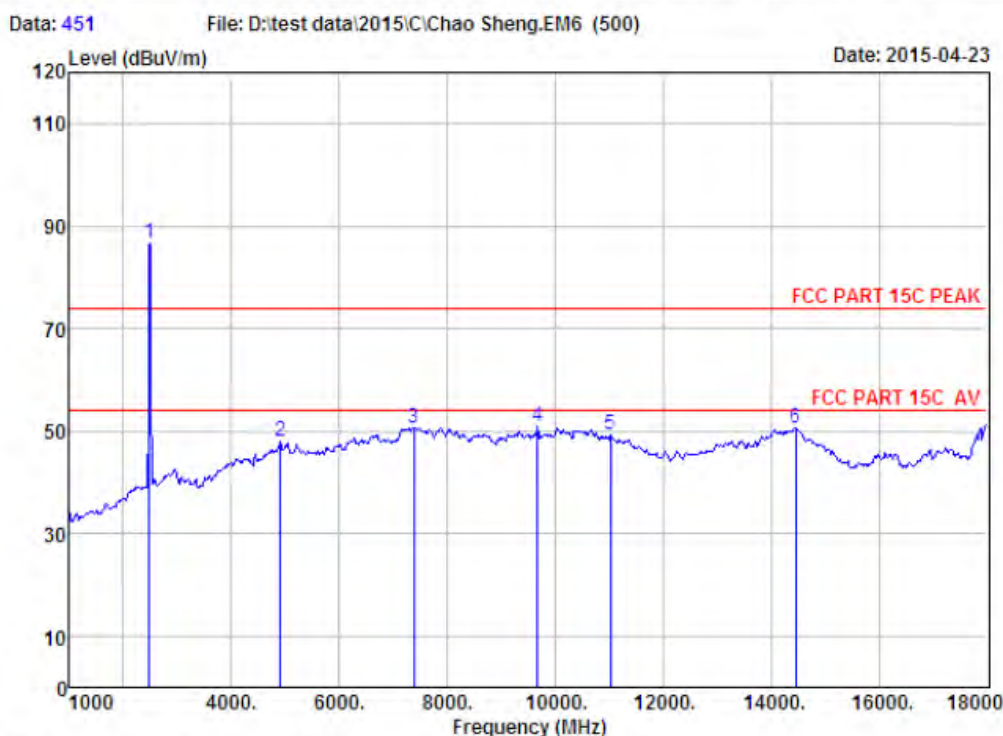
Site no. : 1# 966 chamber Data no. : 221
Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:23.6°;Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	41.64	11.75	0.85	18.77	31.37	40.00	8.63	QP
2	68.80	5.51	1.10	10.40	17.01	40.00	22.99	QP
3	117.30	11.02	1.47	13.74	26.23	43.50	17.27	QP
4	427.70	16.11	2.85	6.29	25.25	46.00	20.75	QP
5	563.50	19.67	3.28	5.05	28.00	46.00	18.00	QP
6	749.74	22.19	3.81	6.41	32.41	46.00	13.59	QP

Figure 29: Test figure of Spurious Emissions (1GHz –25GHz), BDR (High), H

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 451
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.58	6.71	34.03	86.60	86.86	74.00	-12.86	Peak
2	4910.00	31.42	12.22	31.93	36.33	48.04	74.00	25.96	Peak
3	7375.00	36.57	11.59	31.98	34.52	50.70	74.00	23.30	Peak
4	9670.00	38.01	11.67	31.88	32.93	50.73	74.00	23.27	Peak
5	11030.00	39.50	11.27	33.71	32.25	49.31	74.00	24.69	Peak
6	14464.00	41.85	10.93	32.96	30.86	50.68	74.00	23.32	Peak

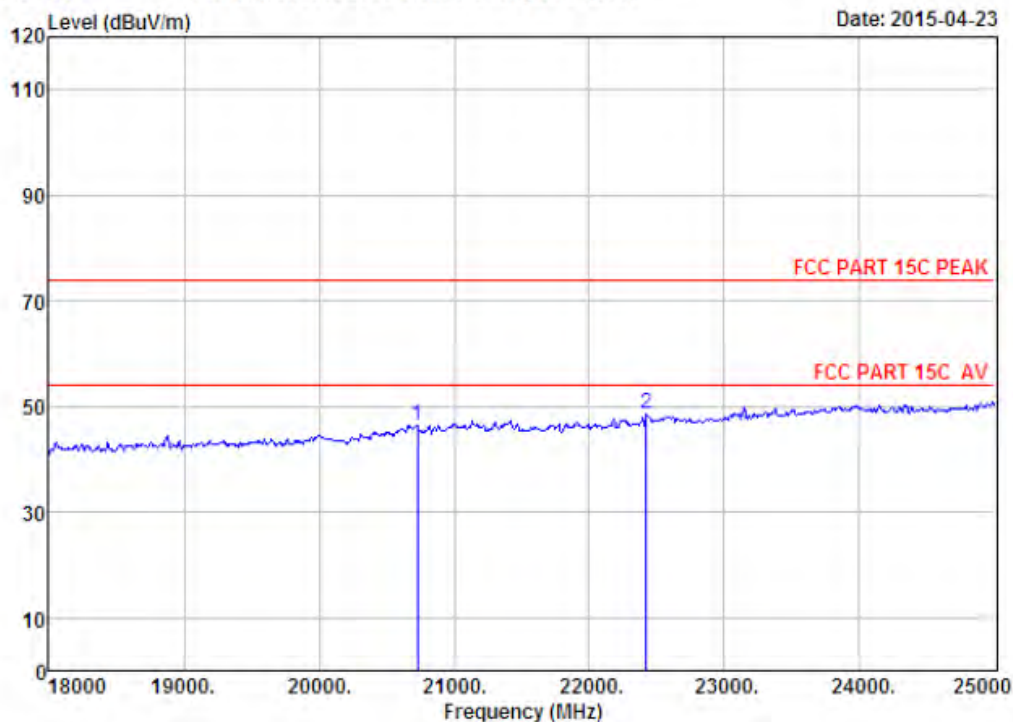
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878

Data: 459 File: D:\test data\2015\C\Chao Sheng.EM6 (500)

Date: 2015-04-23



Site no. : 1# 966 chamber Data no. : 459
Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2480MHz

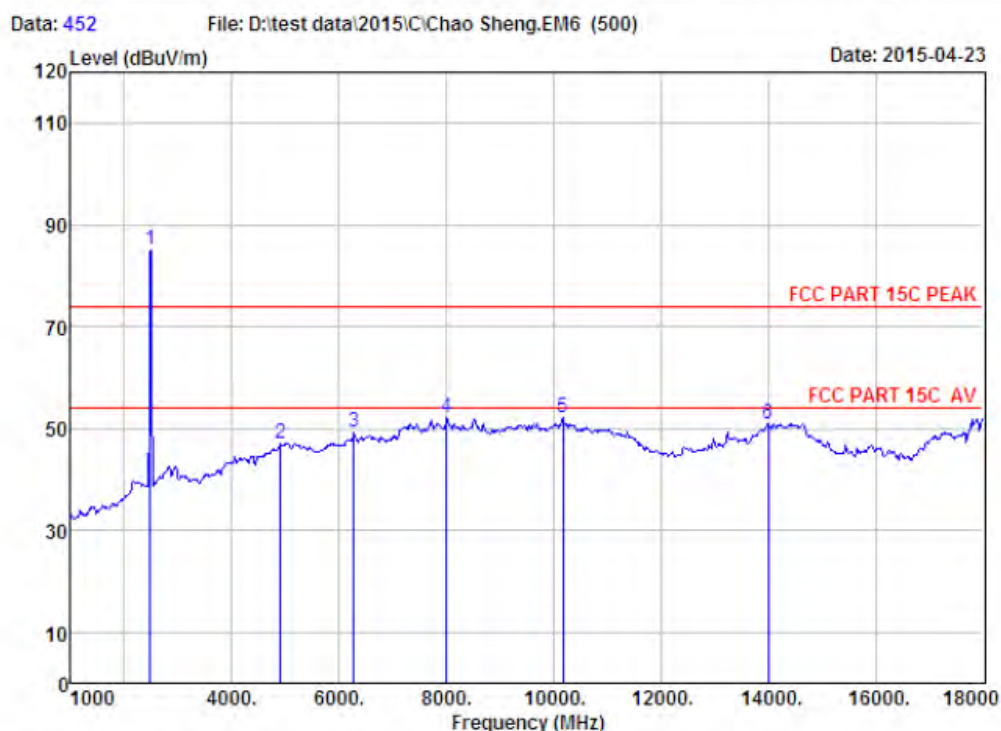
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	20730.00	46.14	20.01	36.05	16.35	46.45	74.00	27.55	Peak
2	22424.00	45.78	20.81	34.45	16.35	48.49	74.00	25.51	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 30: Test figure of Spurious Emissions (1GHz –25GHz), BDR (High), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 452
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.58	6.71	34.03	85.00	85.26	74.00	-11.26	Peak
2	4910.00	31.42	12.22	31.93	35.31	47.02	74.00	26.98	Peak
3	6270.00	33.48	12.18	31.95	35.64	49.35	74.00	24.65	Peak
4	8004.00	37.01	11.40	31.22	34.95	52.14	74.00	21.86	Peak
5	10180.00	38.42	11.49	32.11	34.32	52.12	74.00	21.88	Peak
6	14005.00	41.46	10.90	33.95	32.59	51.00	74.00	23.00	Peak

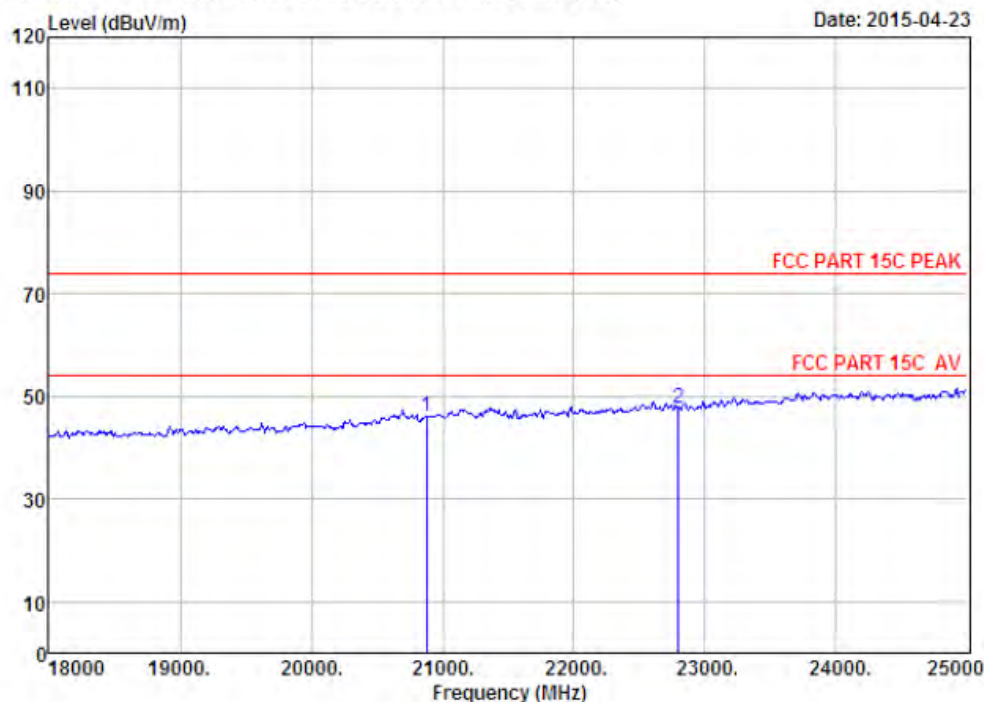
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878

Data: 460 File: D:\test data\2015\C\Chao Sheng.EM6 (500)

Date: 2015-04-23



Site no. : 1# 966 chamber Data no. : 460
Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	20877.00	46.23	20.08	35.91	15.78	46.18	74.00	27.82	Peak
2	22795.00	45.68	21.03	34.06	14.98	47.63	74.00	26.37	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 31: Test figure of Spurious Emissions (9kHz – 30MHz), EDR (Low)

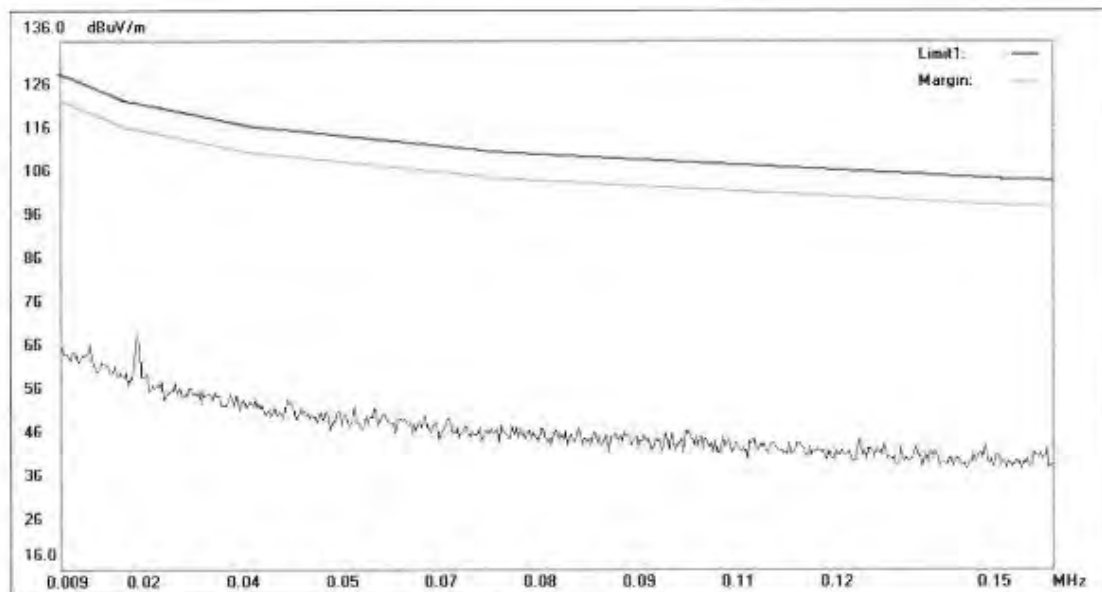


深圳康来士标准测试技术有限公司
Compliance Certification Services (ShenZhen) Inc.

地址：深圳市宝安区西乡街道铁岗社区铁岗社区铁岗社区铁岗社区铁岗社区铁岗社区铁岗社区铁岗社区铁岗社区铁岗社区
TEL: 86(0)755 27065090 FAX: 86(0)755 27065091

966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:18:01
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	8- DPSK TX 2402MHz		





深圳康来士标准测试技术有限公司
Compliance Certification Services (ShenZhen) Inc.

地址：深圳市宝安区西乡街道铁岗社区铁岗路111号1111室 电话：0755-26666048 传真：0755-26666049

966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:19:40
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	8- DPSK TX 2402MHz		

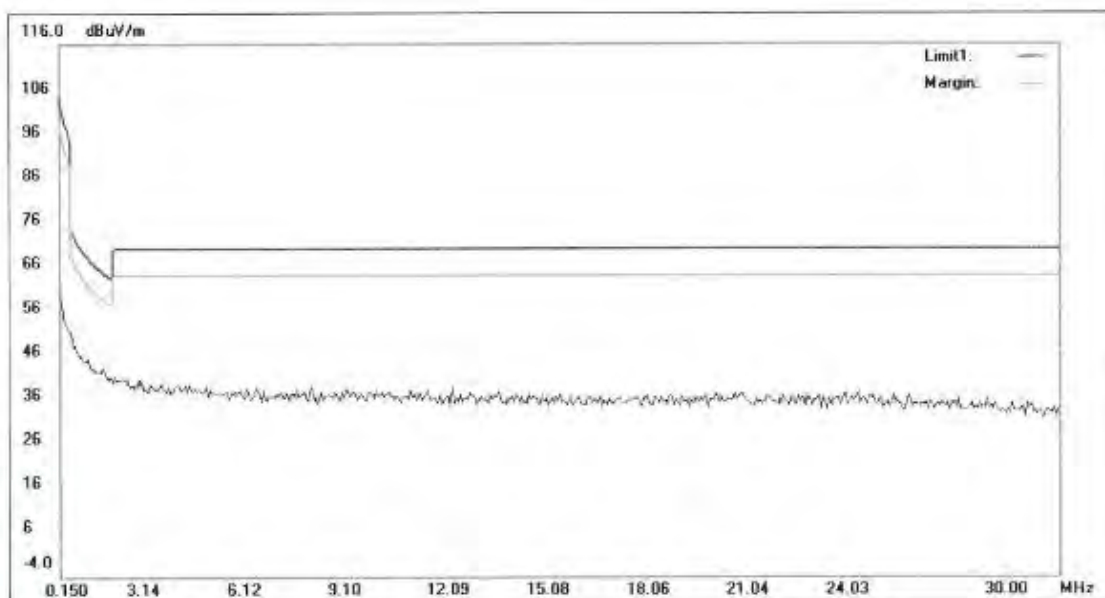
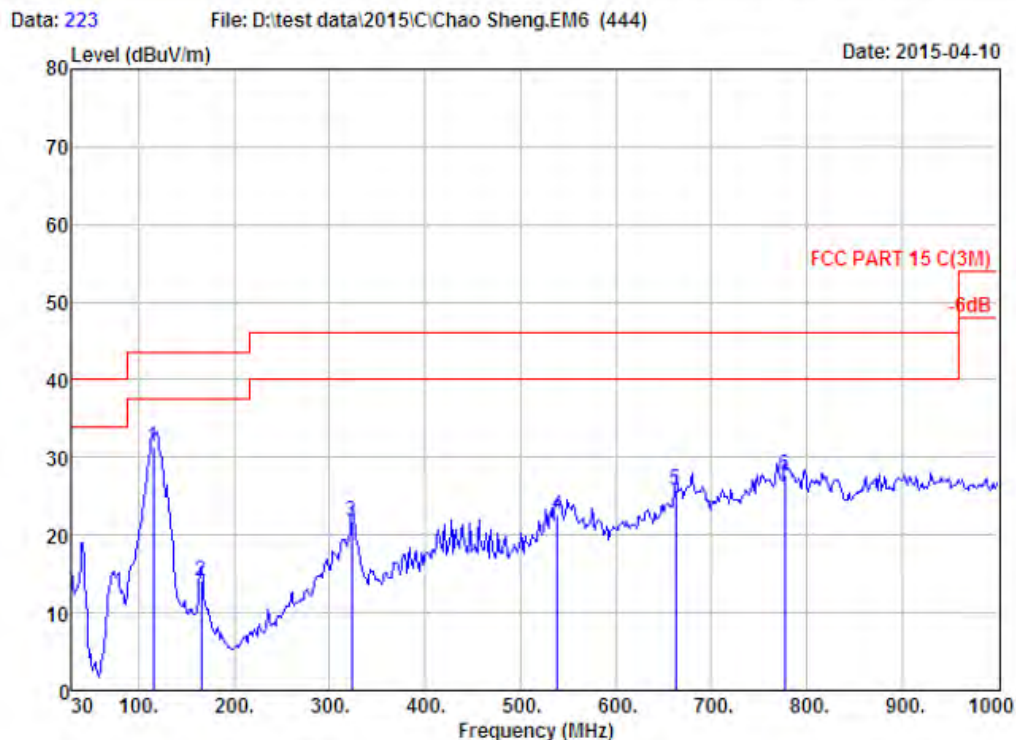


Figure 32: Test figure of Spurious Emissions (30MHz – 1GHz), EDR (Low), H

EST Technology

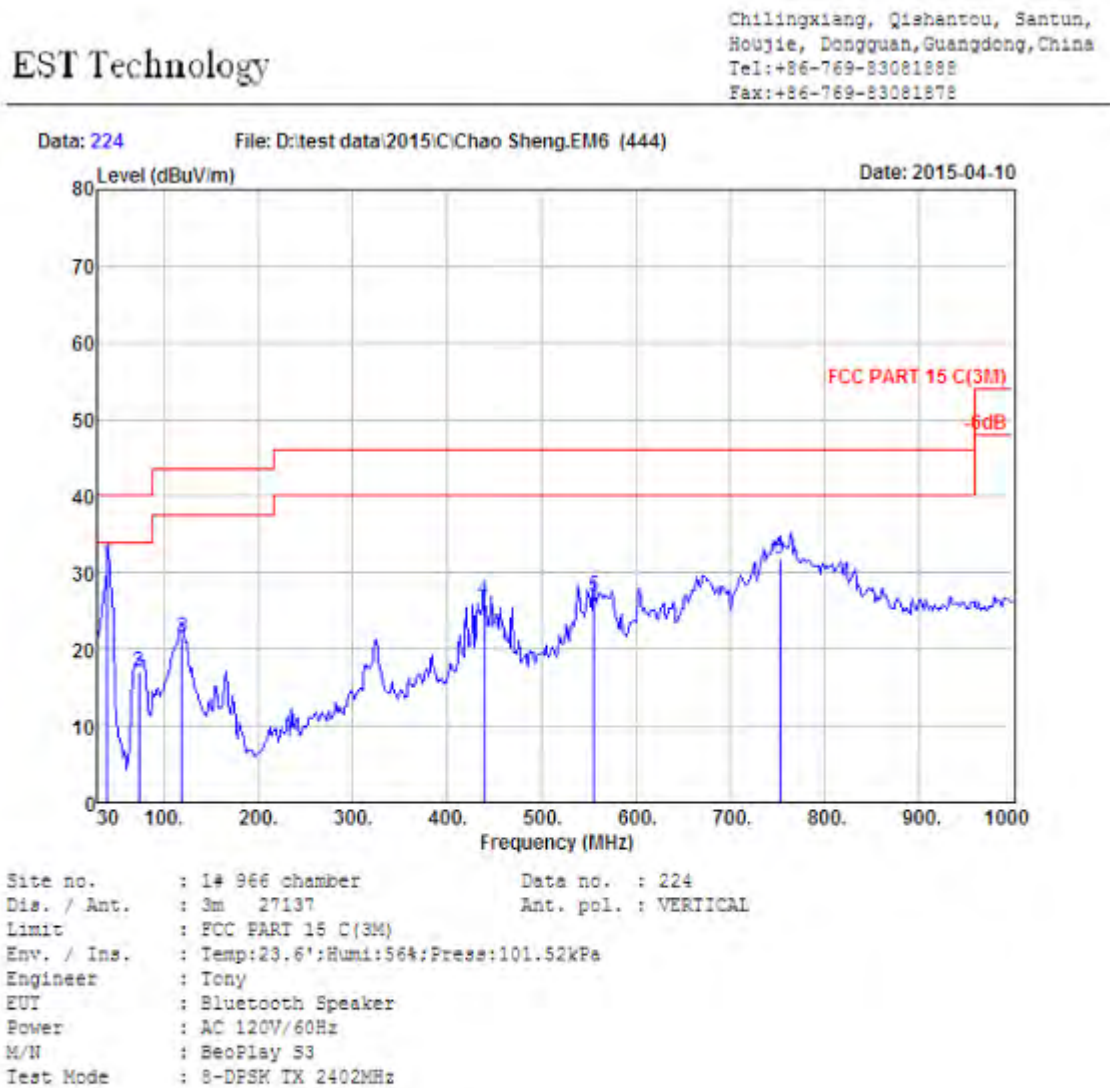
Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 223
Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:23.6°;Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	115.36	10.93	1.46	18.99	31.38	43.50	12.12	QP
2	165.80	9.66	1.68	2.73	14.07	43.50	29.43	QP
3	322.94	13.65	2.43	5.70	21.78	46.00	24.22	QP
4	539.25	19.35	3.22	0.03	22.60	46.00	23.40	QP
5	662.44	20.10	3.55	2.11	25.76	46.00	20.24	QP
6	776.90	22.01	3.90	1.72	27.63	46.00	18.37	QP

Figure 33: Test figure of Spurious Emissions (30MHz – 1GHz), EDR (Low),
V

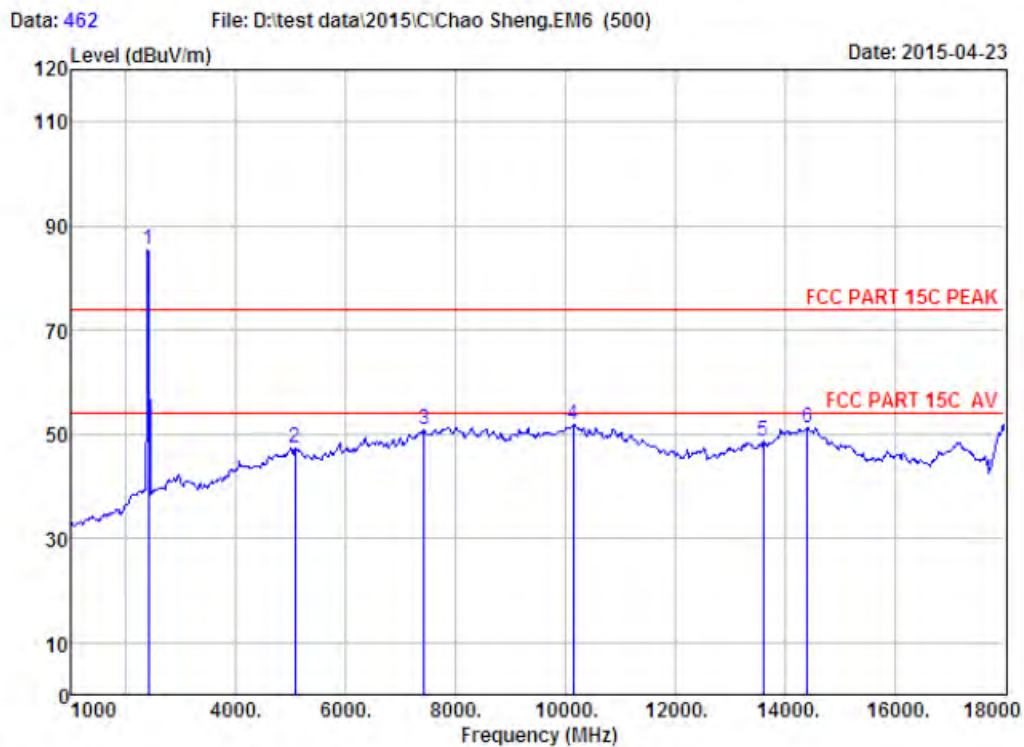


	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	39.70	12.90	0.81	17.40	31.11	40.00	8.89	QF
2	73.65	6.22	1.15	9.63	17.00	40.00	23.00	QF
3	119.24	11.11	1.42	8.95	21.48	43.50	22.02	QF
4	439.34	16.23	2.89	7.25	26.37	46.00	19.63	QF
5	555.74	19.61	3.25	4.12	26.98	46.00	19.02	QF
6	752.65	22.15	3.88	5.73	31.76	46.00	14.24	QF

Figure 34: Test figure of Spurious Emissions (1GHz –25GHz), EDR (Low), H

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel:+86-769-83081888
Fax:+86-769-83081878



Site no. : 1# 966 chamber Data no. : 462
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.61	6.62	34.18	85.41	85.46	74.00	-11.46	Peak
2	5080.00	31.59	12.49	32.14	35.41	47.35	74.00	26.65	Peak
3	7426.00	36.56	11.60	31.95	34.66	50.87	74.00	23.13	Peak
4	10146.00	38.36	11.51	32.05	33.89	51.71	74.00	22.29	Peak
5	13614.00	40.40	11.36	35.39	32.31	48.68	74.00	25.32	Peak
6	14413.00	41.80	10.92	32.78	31.25	51.19	74.00	22.81	Peak

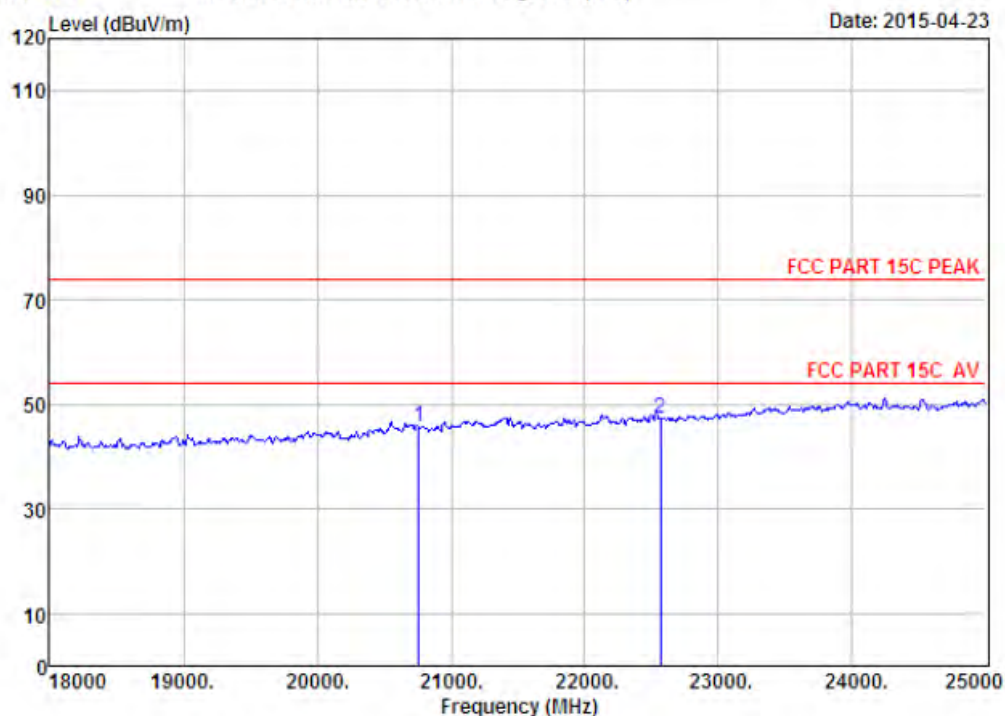
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878

Data: 471 File: D:\test data\2015\C\Chao Sheng,EM6 (500)

Date: 2015-04-23



Site no. : 1# 966 chamber Data no. : 471
Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2402MHz

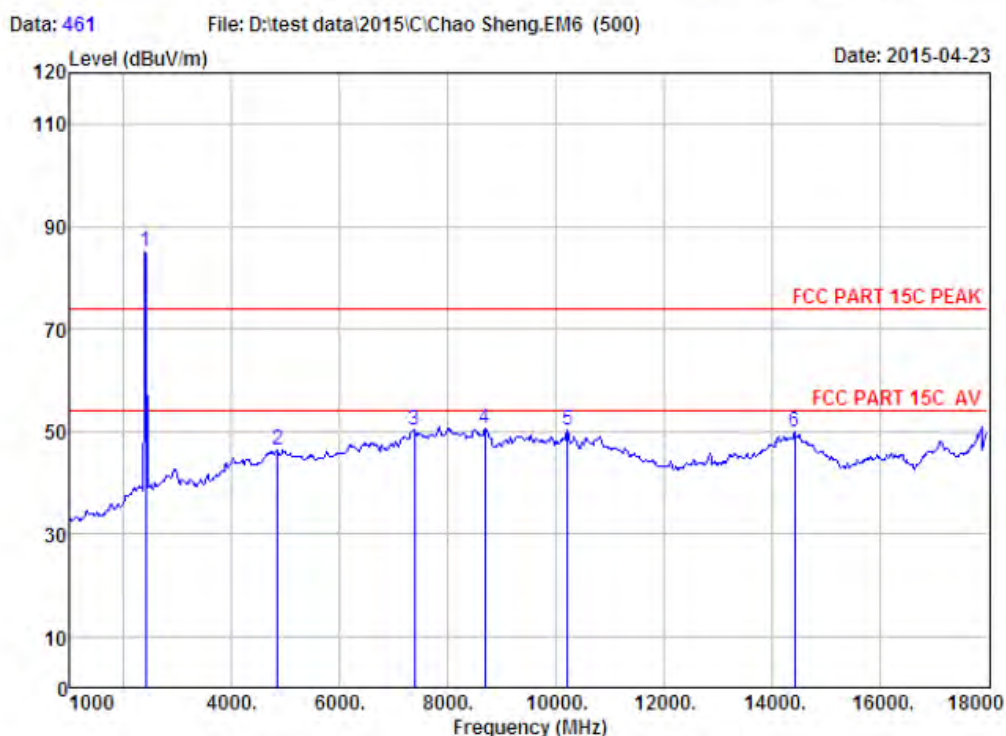
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	20758.00	46.15	20.02	36.03	15.47	45.61	74.00	28.39	Peak
2	22564.00	45.78	20.89	34.30	15.15	47.52	74.00	26.48	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 35: Test figure of Spurious Emissions (1GHz –25GHz), EDR (Low), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 461
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.61	6.62	34.18	85.15	85.20	74.00	-11.20	Peak
2	4842.00	31.31	11.92	31.85	35.10	46.48	74.00	27.52	Peak
3	7375.00	36.57	11.59	31.98	34.18	50.36	74.00	23.64	Peak
4	8684.00	37.32	11.45	32.43	34.11	50.45	74.00	23.55	Peak
5	10214.00	38.48	11.47	32.17	32.55	50.33	74.00	23.67	Peak
6	14430.00	41.82	10.93	32.84	29.98	49.89	74.00	24.11	Peak

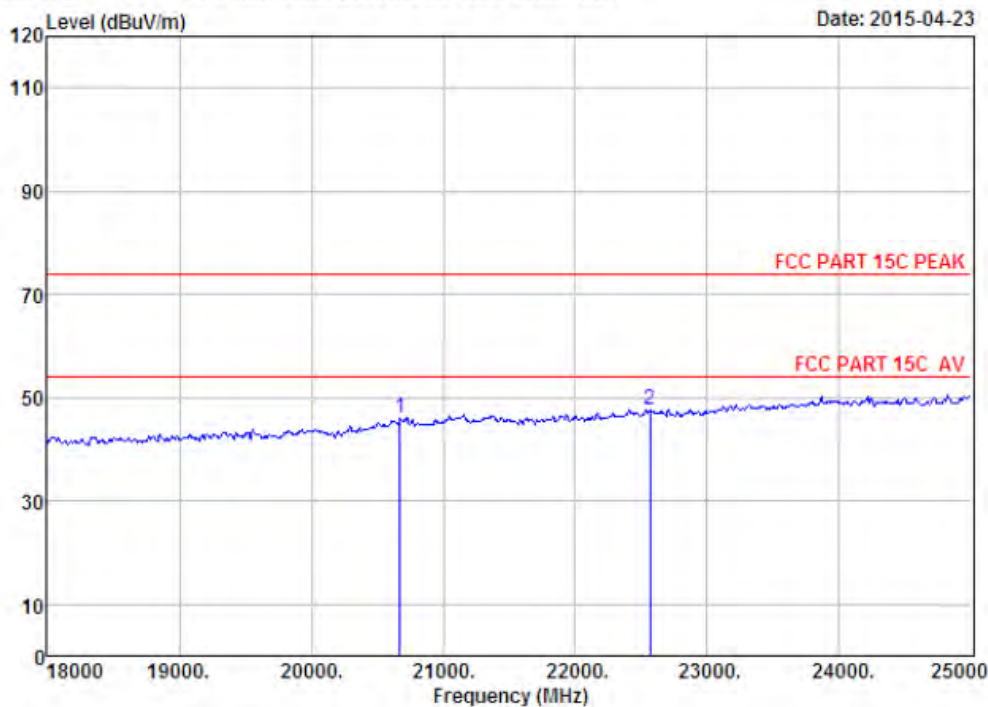
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878

Data: 472 File: D:\test data\2015\C\Chao Sheng.EM6 (500)

Date: 2015-04-23



Site no. : 1# 966 chamber Data no. : 472
Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	20674.00	46.11	19.98	36.09	16.12	46.12	74.00	27.88	Peak
2	22564.00	45.78	20.89	34.30	15.26	47.63	74.00	26.37	Peak

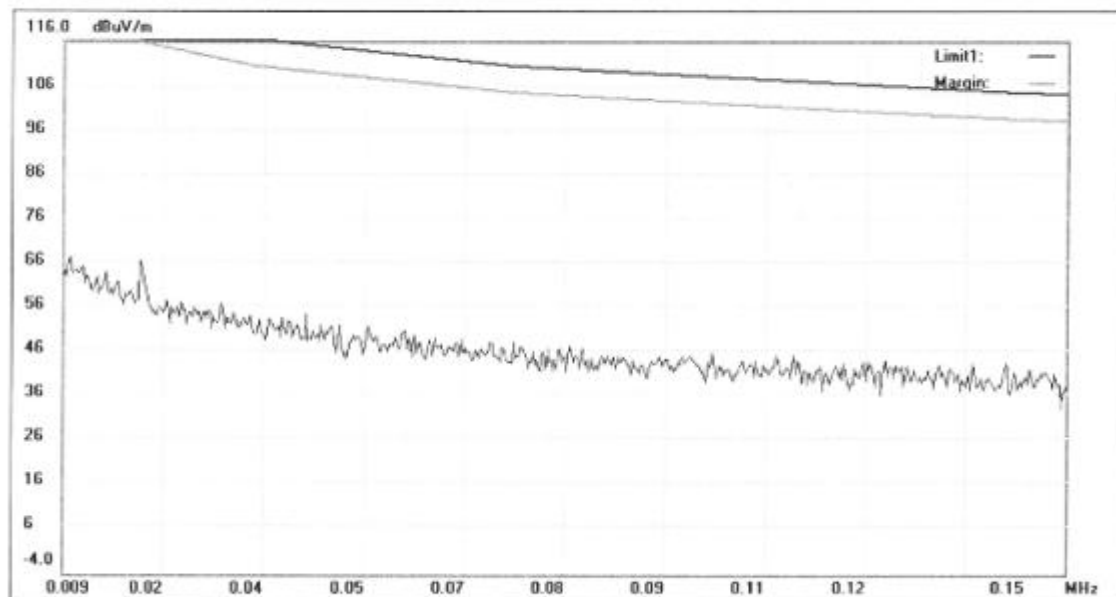
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 36: Test figure of Spurious Emissions (9kHz – 30MHz), EDR (Mid)



966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:16:00
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	8- DPSK TX 2441MHz		





深圳康来士标准测试技术有限公司
Compliance Certification Services (ShenZhen) Inc.

地址: 广东省深圳市观澜镇松岗南路18号钰可检测大楼10-1楼 TEL: 0755-28055000 FAX: 0755-29564907

966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:15:54
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	8- DPSK TX 2441MHz		

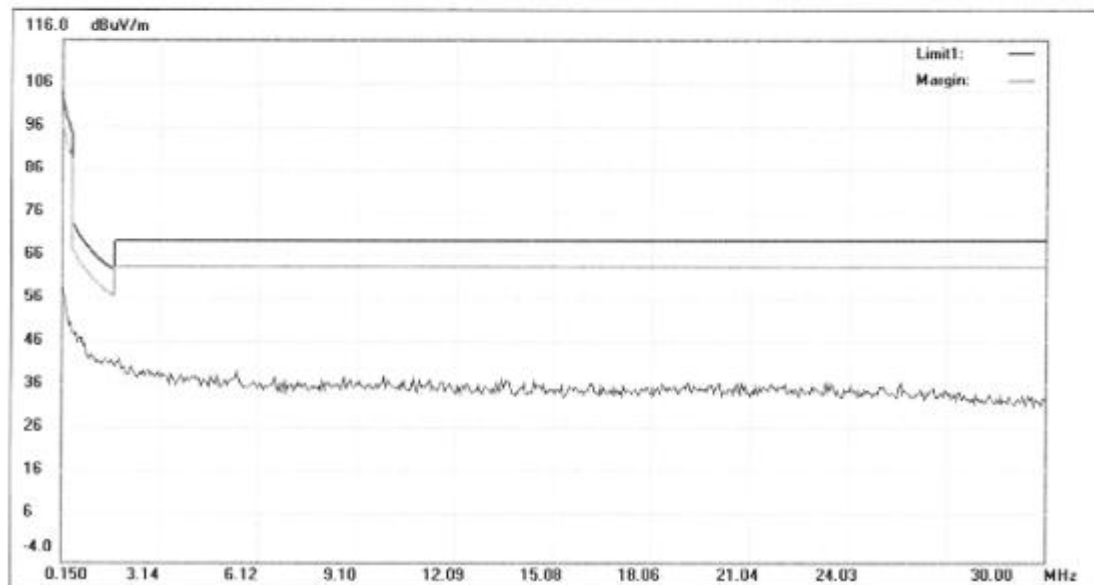
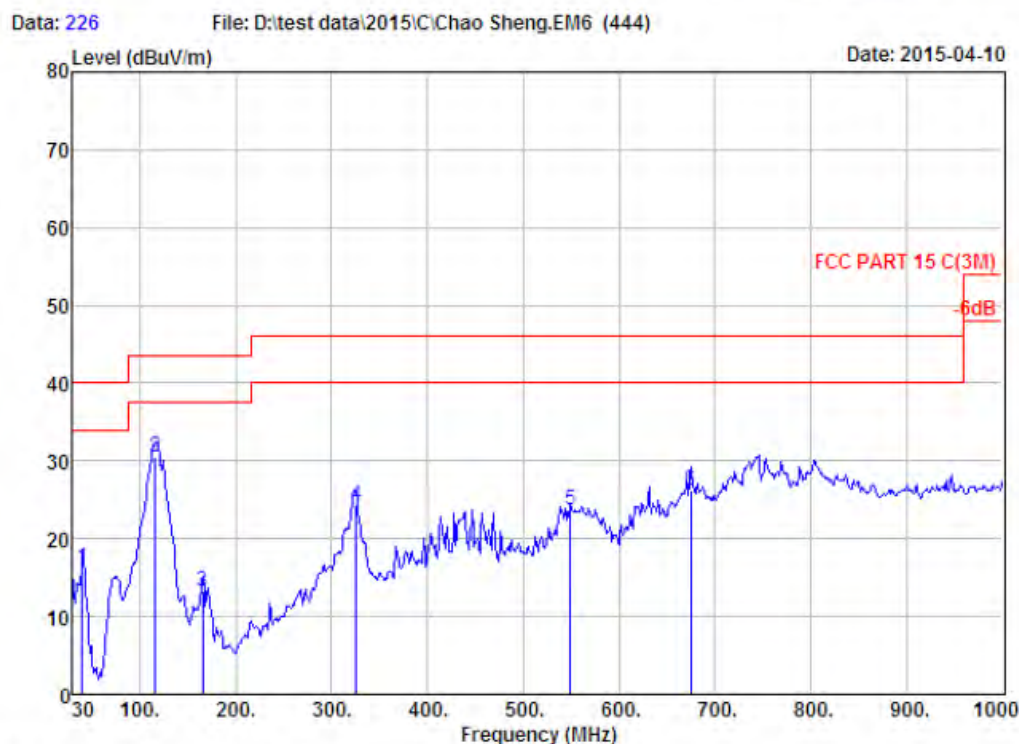


Figure 37: Test figure of Spurious Emissions (30MHz – 1GHz), EDR (Mid), H

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel:+86-769-83081888
Fax:+86-769-83081878



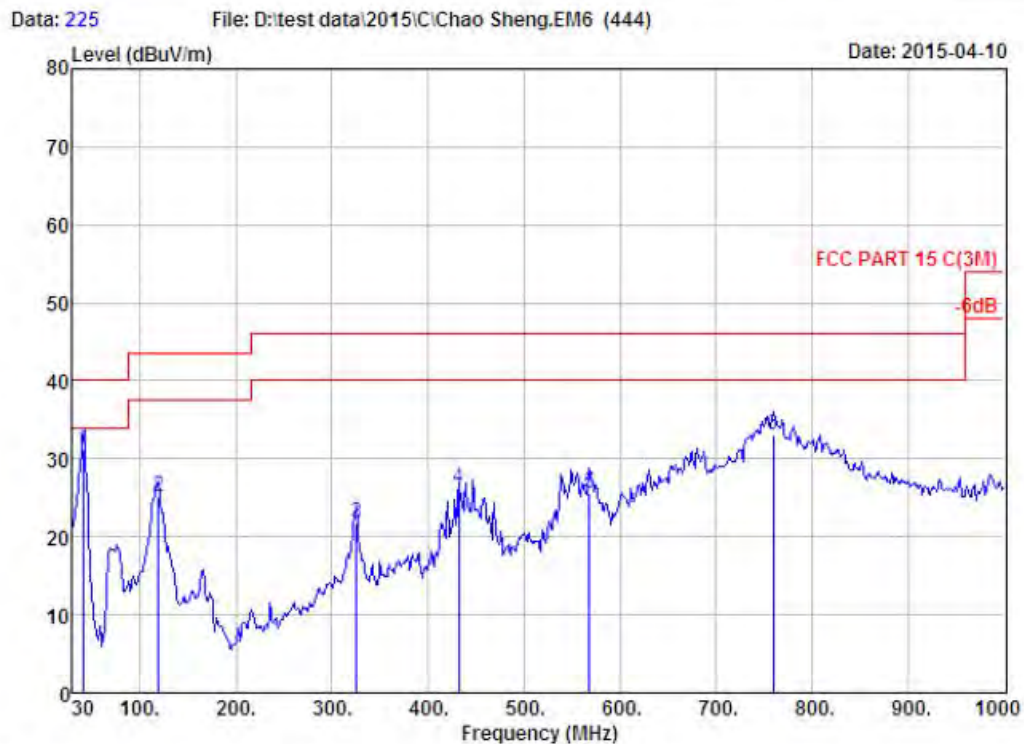
Site no. : 1# 966 chamber Data no. : 226
Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUI : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	39.70	12.90	0.81	2.58	16.29	40.00	23.71	QP
2	116.33	10.98	1.50	18.03	30.51	43.50	12.99	QP
3	165.80	9.66	1.68	1.91	13.25	43.50	30.25	QP
4	325.85	13.74	2.43	8.14	24.31	46.00	21.69	QP
5	548.95	19.45	3.26	0.90	23.61	46.00	22.39	QP
6	675.05	20.26	3.64	2.35	26.25	46.00	19.75	QP

Figure 38: Test figure of Spurious Emissions (30MHz – 1GHz), EDR (Mid), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



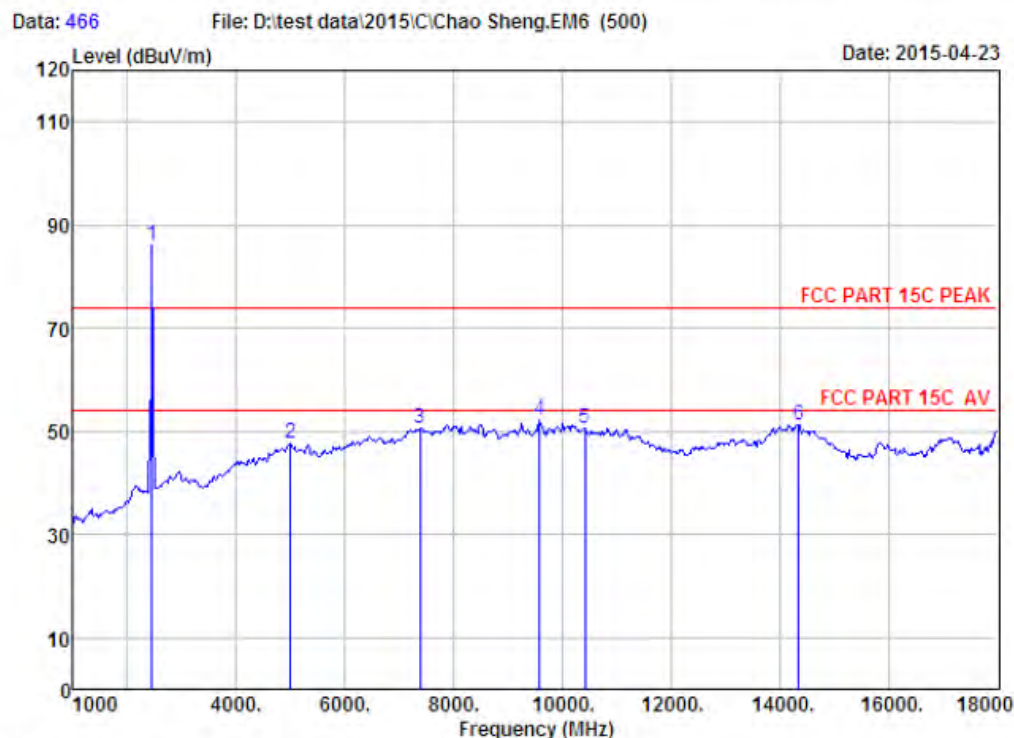
Site no. : 1# 966 chamber Data no. : 225
Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	41.64	11.75	0.85	18.55	31.15	40.00	8.85	QP
2	119.24	11.11	1.42	12.56	25.09	43.50	18.41	QP
3	325.85	13.74	2.43	5.64	21.81	46.00	24.19	QP
4	432.55	16.11	2.78	7.26	26.15	46.00	19.85	QP
5	568.35	19.62	3.24	2.84	25.70	46.00	20.30	QP
6	759.44	22.04	3.91	7.02	32.97	46.00	13.03	QP

Figure 39: Test figure of Spurious Emissions (1GHz –25GHz), EDR (Mid), H

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



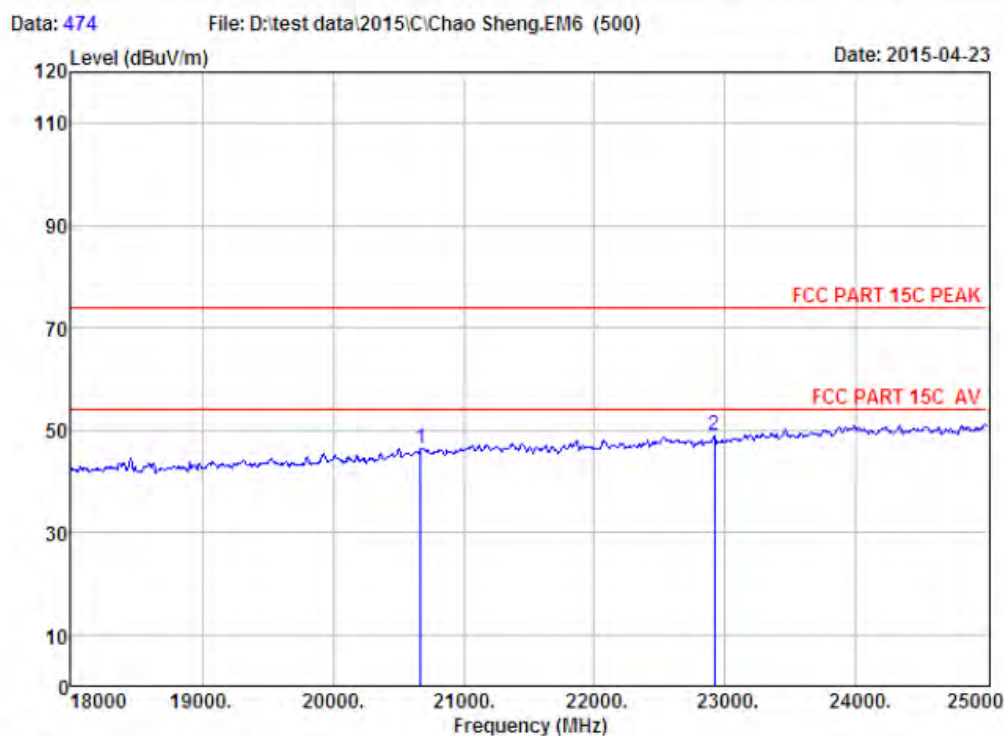
Site no. : 1# 966 chamber Data no. : 466
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.00	27.60	6.67	34.12	85.97	86.12	74.00	-12.12	Peak
2	4995.00	31.54	12.59	32.00	35.71	47.84	74.00	26.16	Peak
3	7375.00	36.57	11.59	31.98	34.27	50.45	74.00	23.55	Peak
4	9585.00	37.92	11.69	31.93	34.43	52.11	74.00	21.89	Peak
5	10418.00	38.83	11.36	32.56	32.82	50.45	74.00	23.55	Peak
6	14345.00	41.76	10.92	32.93	31.59	51.34	74.00	22.66	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 474
Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2441MHz

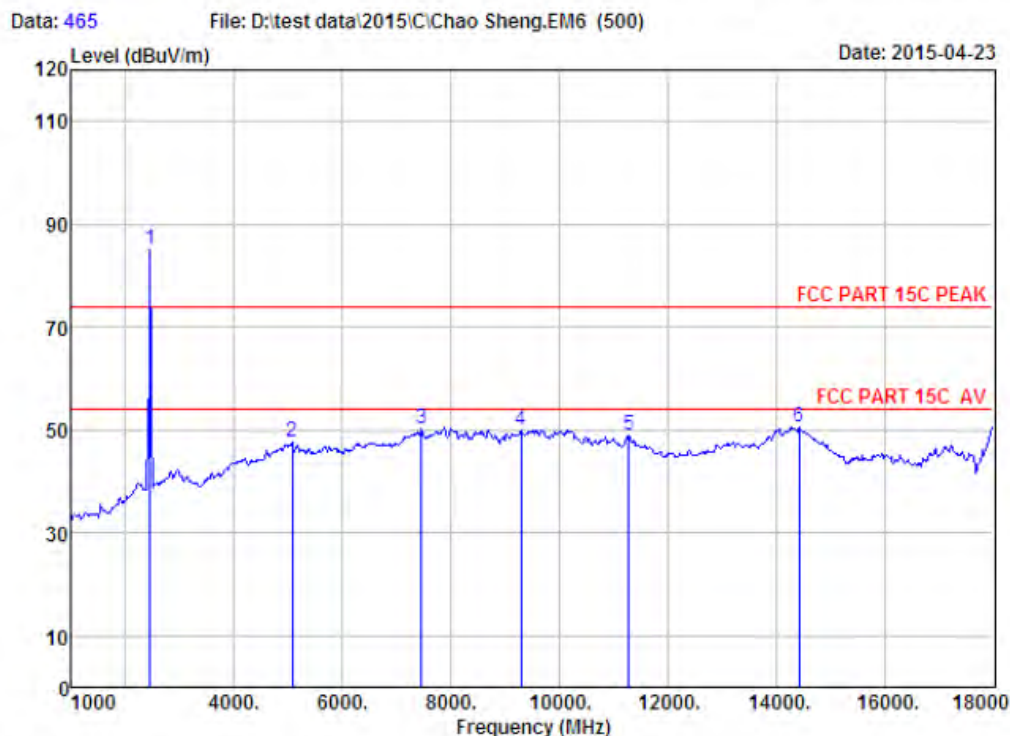
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	20674.00	46.11	19.98	36.09	16.44	46.44	74.00	27.56	Peak
2	22914.00	45.64	21.10	33.93	16.27	49.08	74.00	24.92	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 40: Test figure of Spurious Emissions (1GHz –25GHz), EDR (Mid), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 465
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUI : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.00	27.60	6.67	34.12	84.83	84.98	74.00	-10.98	Peak
2	5080.00	31.59	12.49	32.14	35.70	47.64	74.00	26.36	Peak
3	7460.00	36.52	11.61	31.91	33.89	50.11	74.00	23.89	Peak
4	9296.00	37.91	11.61	32.18	32.72	50.06	74.00	23.94	Peak
5	11285.00	39.33	11.08	34.20	32.70	48.91	74.00	25.09	Peak
6	14430.00	41.82	10.93	32.84	30.61	50.52	74.00	23.48	Peak

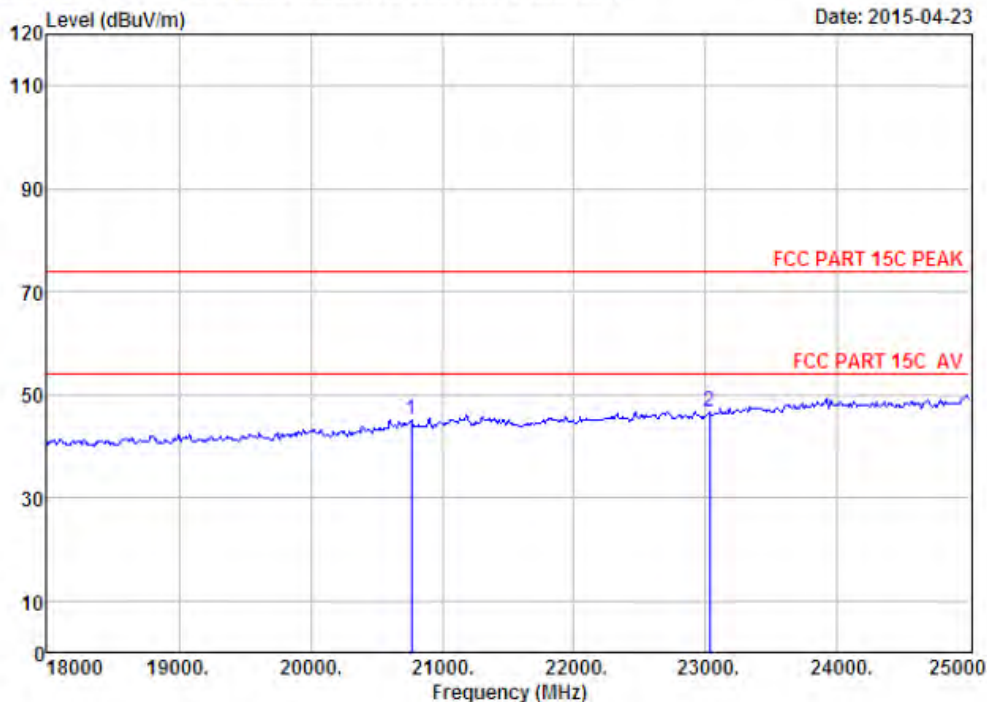
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878

Data: 473 File: D:\test data\2015\C\Chao Sheng.EM6 (500)

Date: 2015-04-23



Site no. : 1# 966 chamber Data no. : 473
Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	20765.00	46.16	20.02	36.00	14.81	44.99	74.00	29.01	Peak
2	23026.00	45.60	21.17	33.82	13.64	46.59	74.00	27.41	Peak

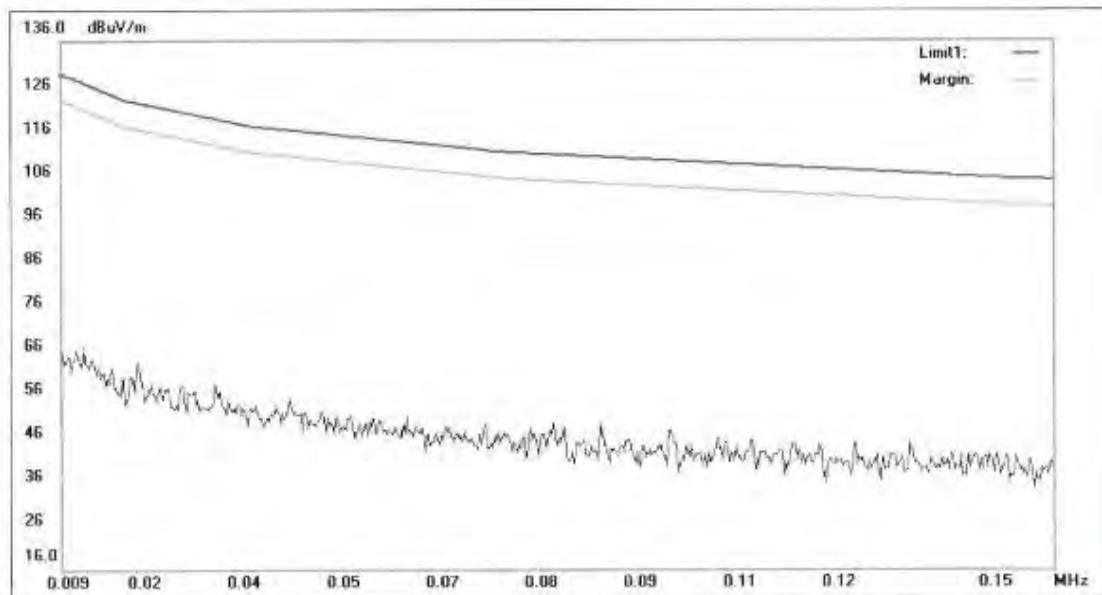
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 41: Test figure of Spurious Emissions (9kHz – 30MHz), EDR (High)



966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:12:29
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	8- DPSK TX 2480MHz		





深圳康来士标准测试技术有限公司
Compliance Certification Services (ShenZhen) Inc.

地址：广东省深圳市宝安区西乡街道铁岗社区铁岗大道101号 电话：0755-28000888 传真：0755-28000889

966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:13:32
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	8- DPSK TX 2480MHz		

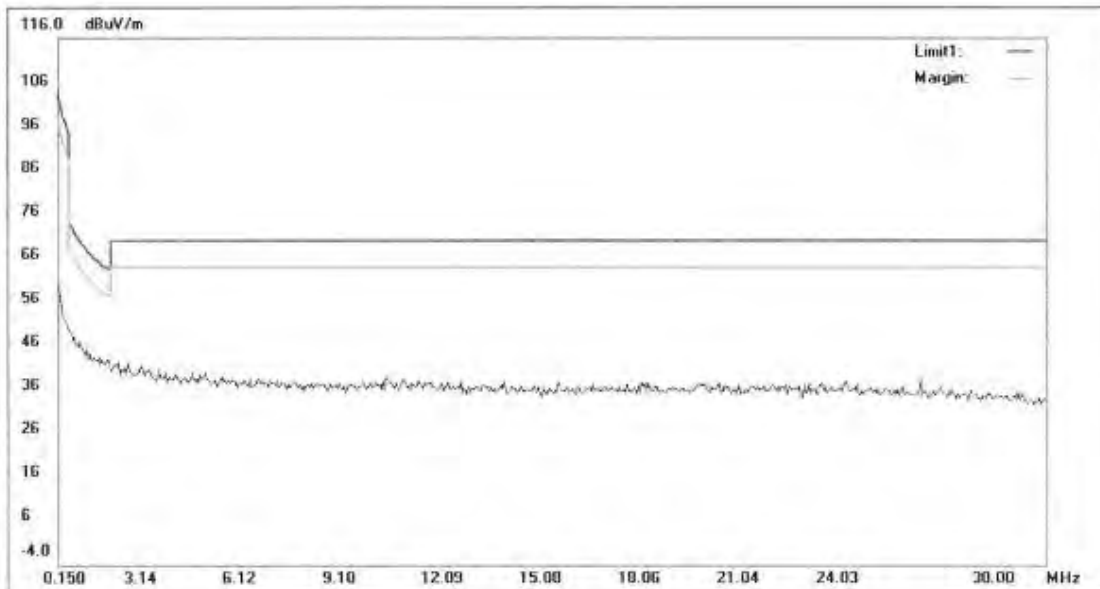
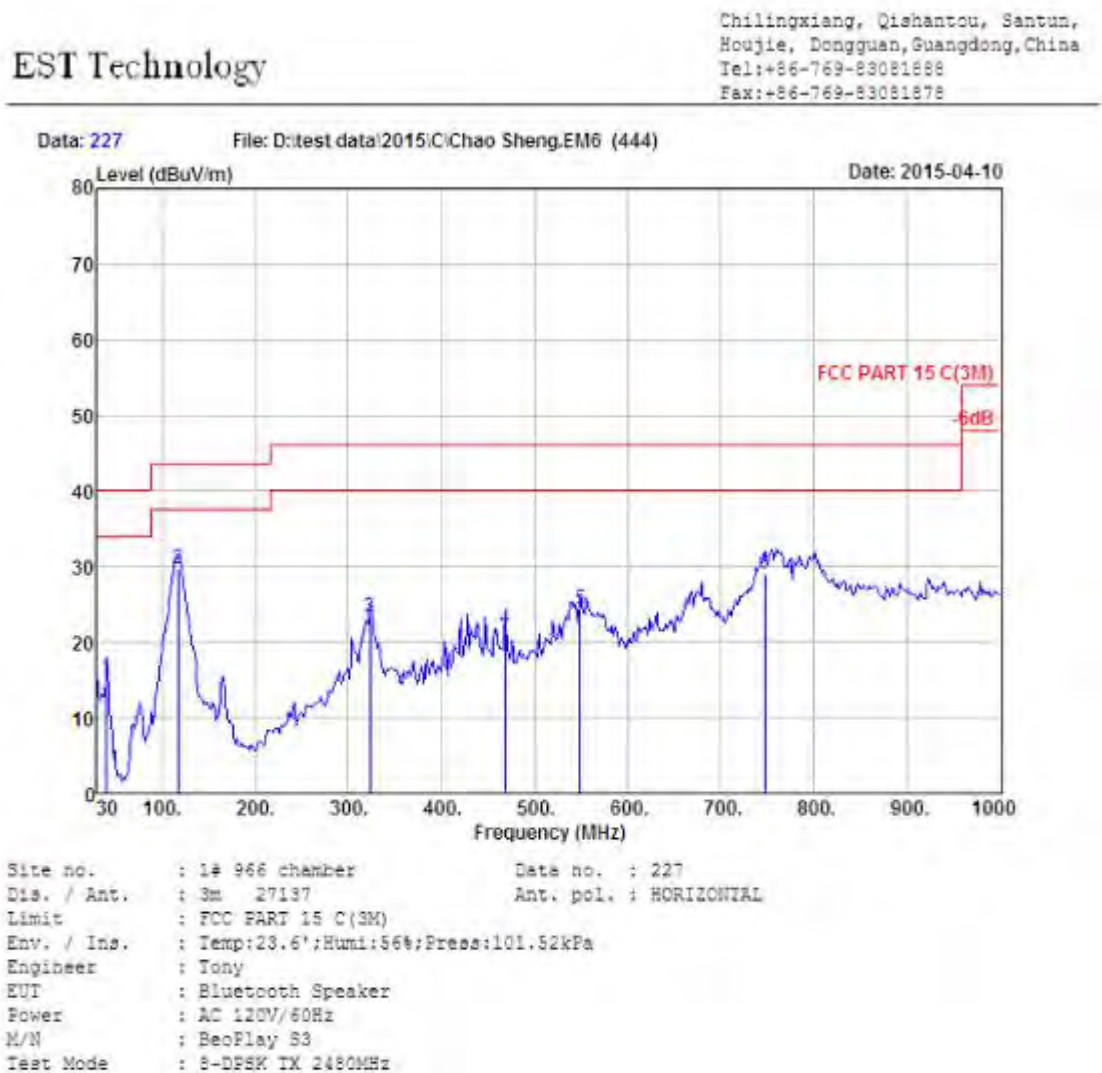


Figure 42: Test figure of Spurious Emissions (30MHz – 1GHz), EDR (High), H

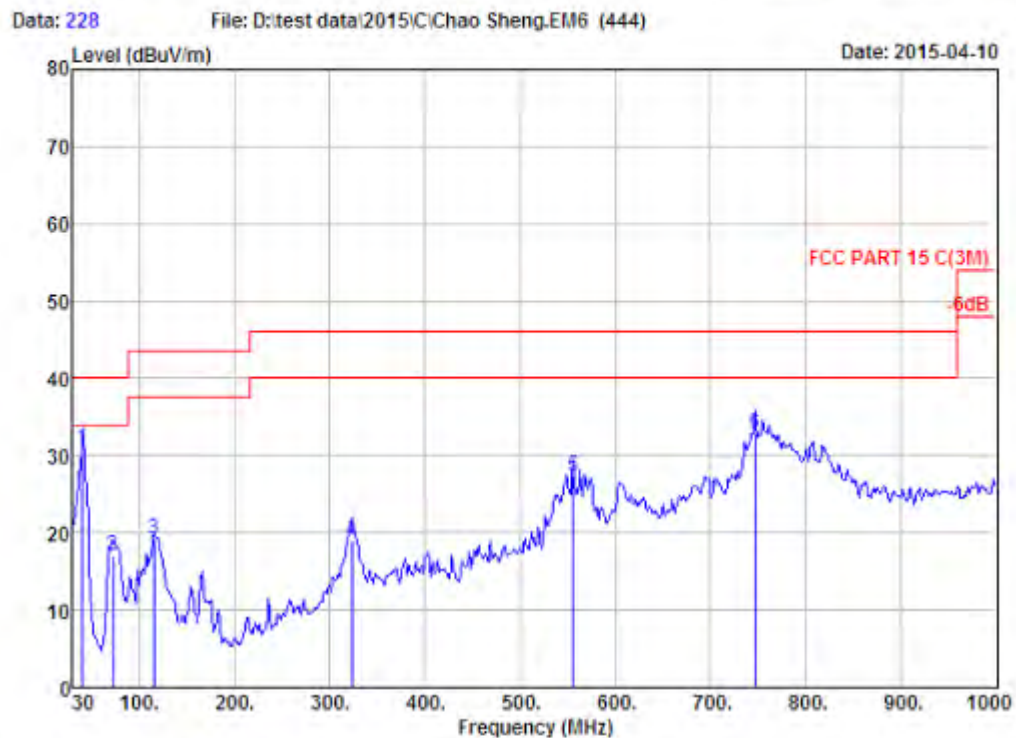


	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	39.70	12.90	0.81	1.65	15.36	40.00	24.64	QP
2	117.30	11.02	1.47	17.17	29.66	43.50	13.84	QP
3	322.94	13.65	2.43	7.13	23.21	46.00	22.79	QP
4	465.44	17.14	3.09	1.44	21.67	46.00	24.33	QP
5	545.95	19.45	3.26	1.64	24.35	46.00	21.65	QP
6	747.80	22.22	3.91	2.78	28.91	46.00	17.09	QP

Figure 43: Test figure of Spurious Emissions (30MHz – 1GHz), EDR (High), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



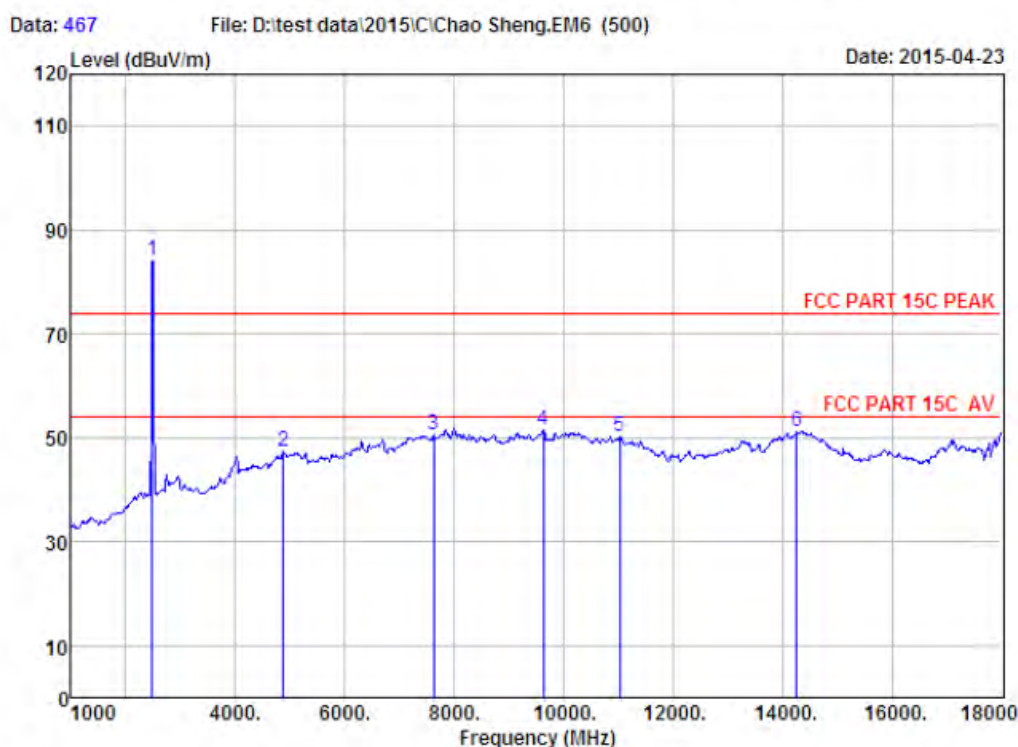
Site no. : 1# 966 chamber Date no. : 228
Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:23.6°;Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	39.70	12.90	0.81	17.14	30.85	40.00	9.15	QP
2	71.71	6.03	1.08	9.93	17.04	40.00	22.96	QP
3	115.36	10.93	1.46	6.71	19.10	43.50	24.40	QP
4	322.94	13.65	2.43	2.98	19.06	46.00	26.94	QP
5	555.74	19.61	3.25	4.52	27.38	46.00	18.62	QP
6	747.80	22.22	3.91	6.64	32.77	46.00	13.23	QP

Figure 44: Test figure of Spurious Emissions (1GHz –25GHz), EDR (High), H

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



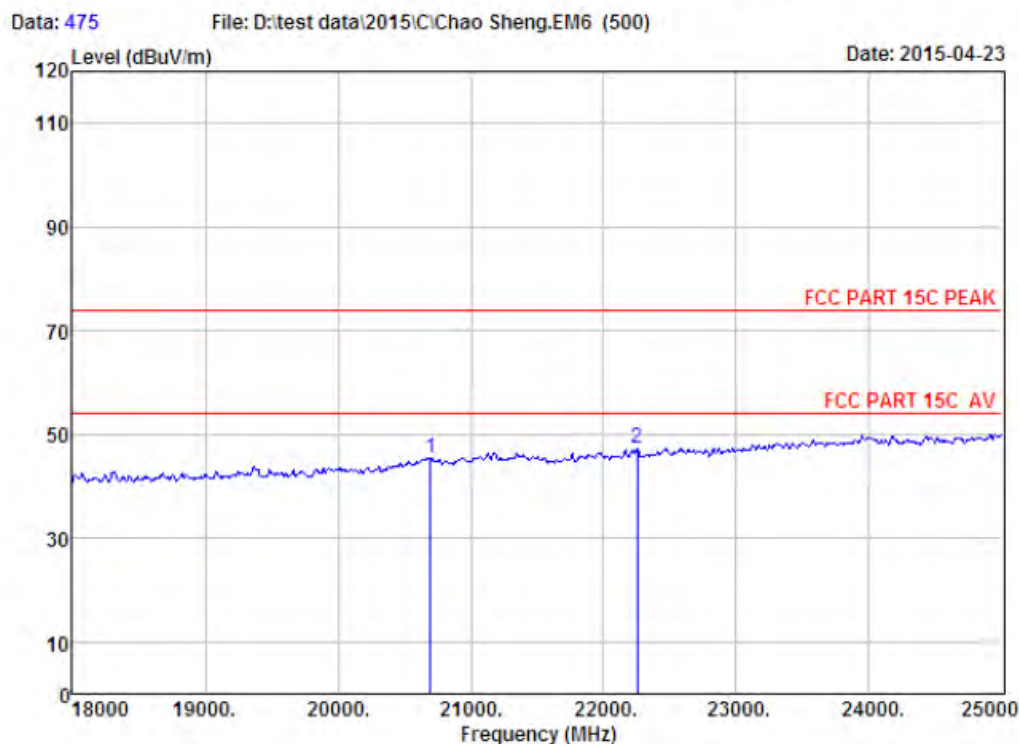
Site no. : 1# 966 chamber Data no. : 467
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°;Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.58	6.71	34.03	83.78	84.04	74.00	-10.04	Peak
2	4876.00	31.37	12.07	31.90	35.85	47.39	74.00	26.61	Peak
3	7630.00	36.41	11.56	31.68	34.38	50.67	74.00	23.33	Peak
4	9636.00	37.96	11.68	31.91	33.73	51.46	74.00	22.54	Peak
5	11030.00	39.50	11.27	33.71	33.18	50.24	74.00	23.76	Peak
6	14260.00	41.68	10.92	33.19	31.82	51.23	74.00	22.77	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 475
Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : S-DPSK TX 2480MHz

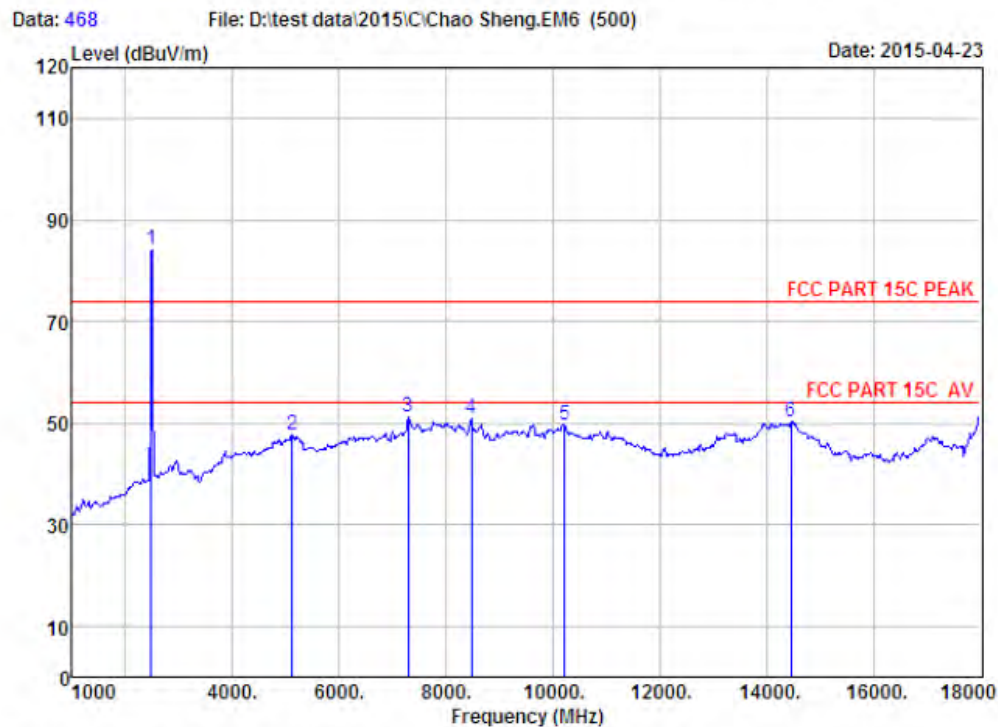
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	20695.00	46.11	19.99	36.07	15.57	45.60	74.00	28.40	Peak
2	22256.00	45.75	20.71	34.64	15.50	47.32	74.00	26.68	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 45: Test figure of Spurious Emissions (1GHz –25GHz), EDR (High), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 468
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°;Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.58	6.71	34.03	84.04	84.30	74.00	-10.30	Peak
2	5114.00	31.62	12.45	32.17	35.84	47.74	74.00	26.26	Peak
3	7290.00	36.54	11.56	32.02	35.05	51.13	74.00	22.87	Peak
4	8480.00	36.91	11.45	31.89	34.47	50.94	74.00	23.06	Peak
5	10214.00	38.48	11.47	32.17	31.76	49.54	74.00	24.46	Peak
6	14464.00	41.85	10.93	32.96	30.39	50.21	74.00	23.79	Peak

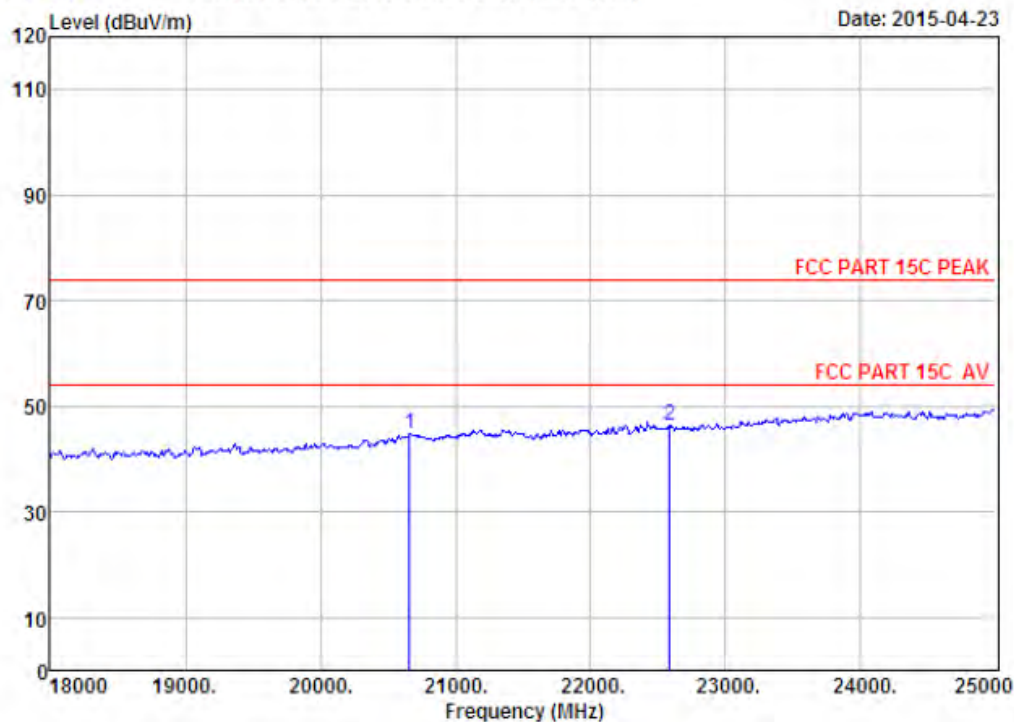
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878

Data: 476 File: D:\test data\2015\CI\Chao Sheng.EM6 (500)

Date: 2015-04-23



Site no. : 1# 966 chamber Data no. : 476
Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	20660.00	46.10	19.98	36.12	14.85	44.81	74.00	29.19	Peak
2	22585.00	45.77	20.90	34.30	13.99	46.36	74.00	27.64	Peak

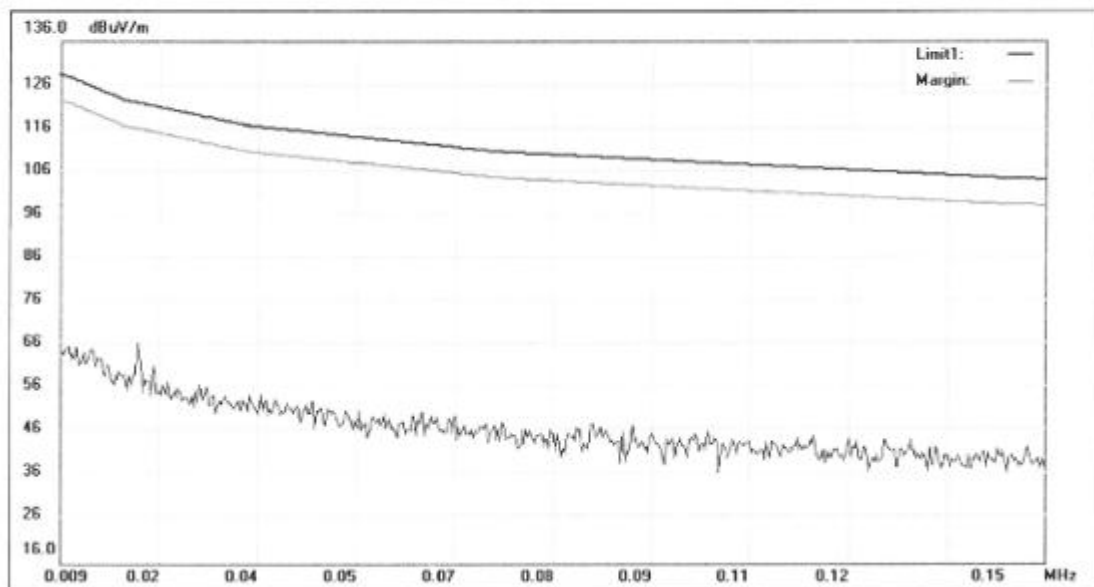
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 46: Test figure of Spurious Emissions (9kHz – 30MHz), BLE (Low)



966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:23:01
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	GFSK TX 2402MHz		





深圳康来士标准测试技术有限公司
Compliance Certification Services (ShenZhen) Inc.

地址：广东省深圳市观澜镇环观南路18号顺安达物流园10-1栋 TEL: 0755-28055000 FAX: 0755-29564902

966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:21:16
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	GFSK TX 2402MHz		

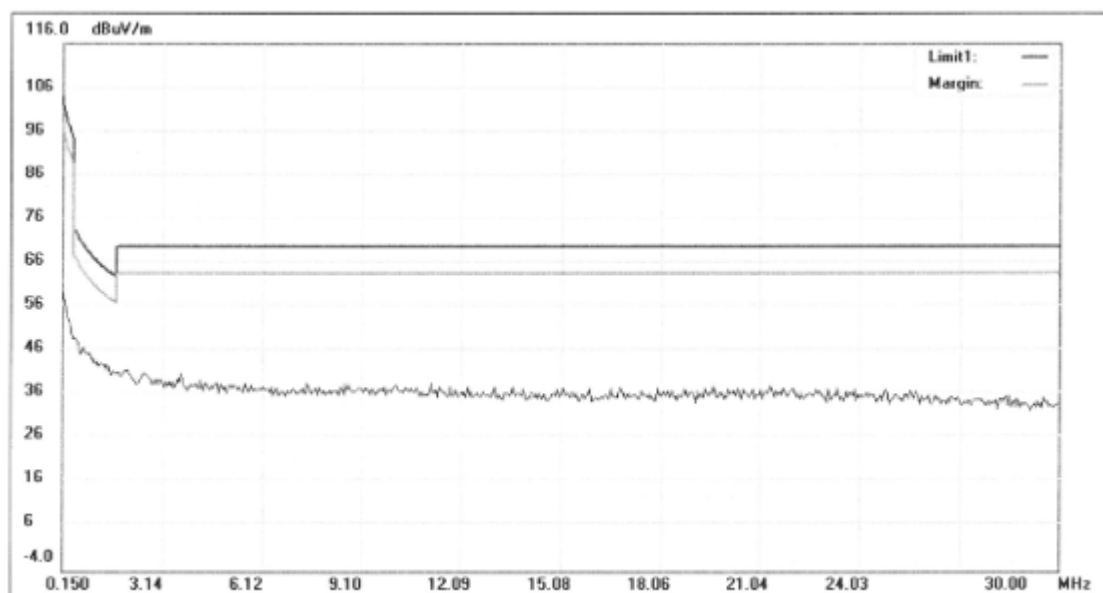
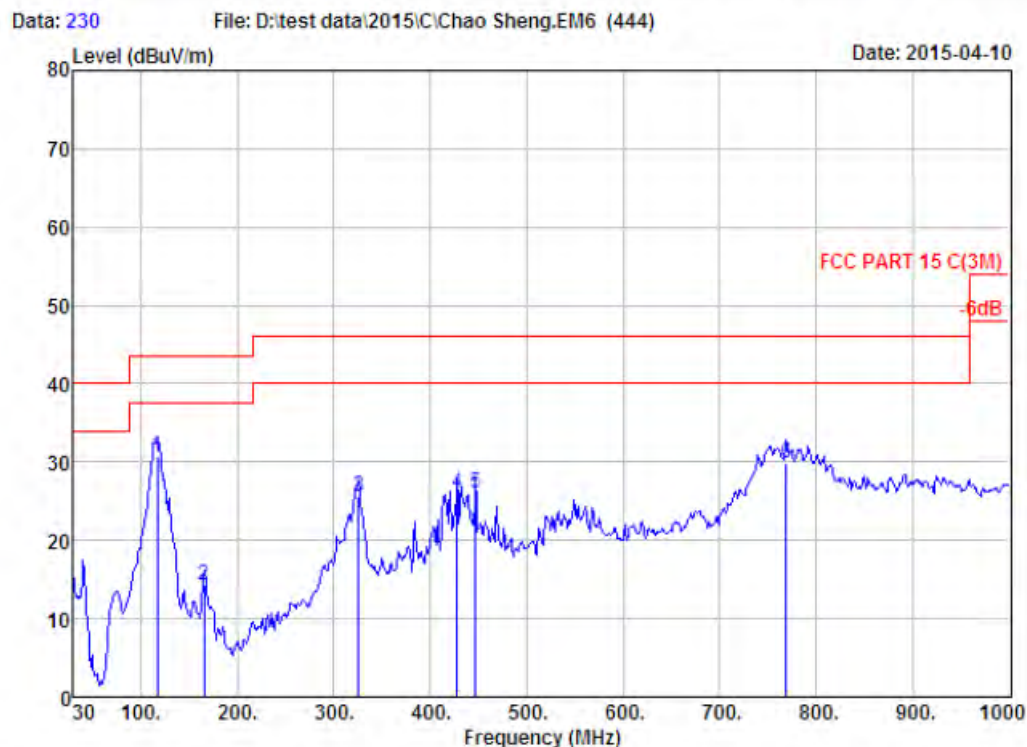


Figure 47: Test figure of Spurious Emissions (30MHz – 1GHz), BLE (Low), H

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878

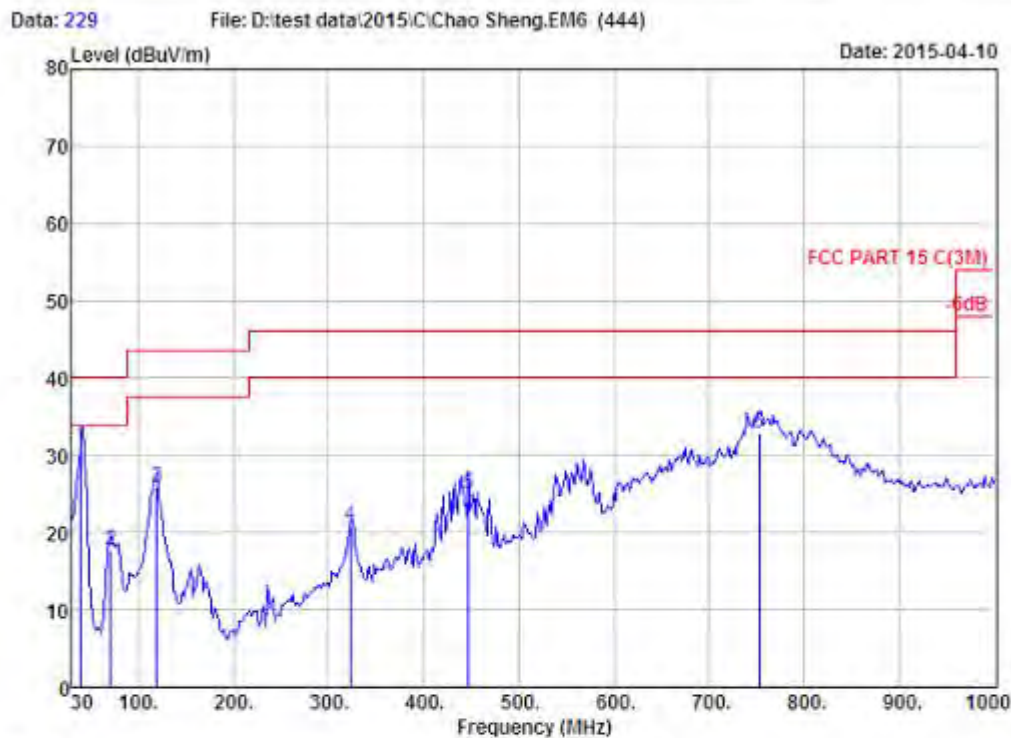


Site no. : 1# 966 chamber Data no. : 230
Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:23.6°;Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	117.30	11.02	1.47	18.22	30.71	43.50	12.79	QP
2	165.80	9.66	1.68	2.87	14.21	43.50	29.29	QP
3	325.85	13.74	2.43	9.53	25.70	46.00	20.30	QP
4	427.70	16.11	2.85	7.07	26.03	46.00	19.97	QP
5	447.10	16.40	2.98	6.67	26.05	46.00	19.95	QP
6	769.14	22.05	3.94	3.95	29.94	46.00	16.06	QP

Figure 48: Test figure of Spurious Emissions (30MHz – 1GHz), BLE (Low), V

EST Technology
Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878

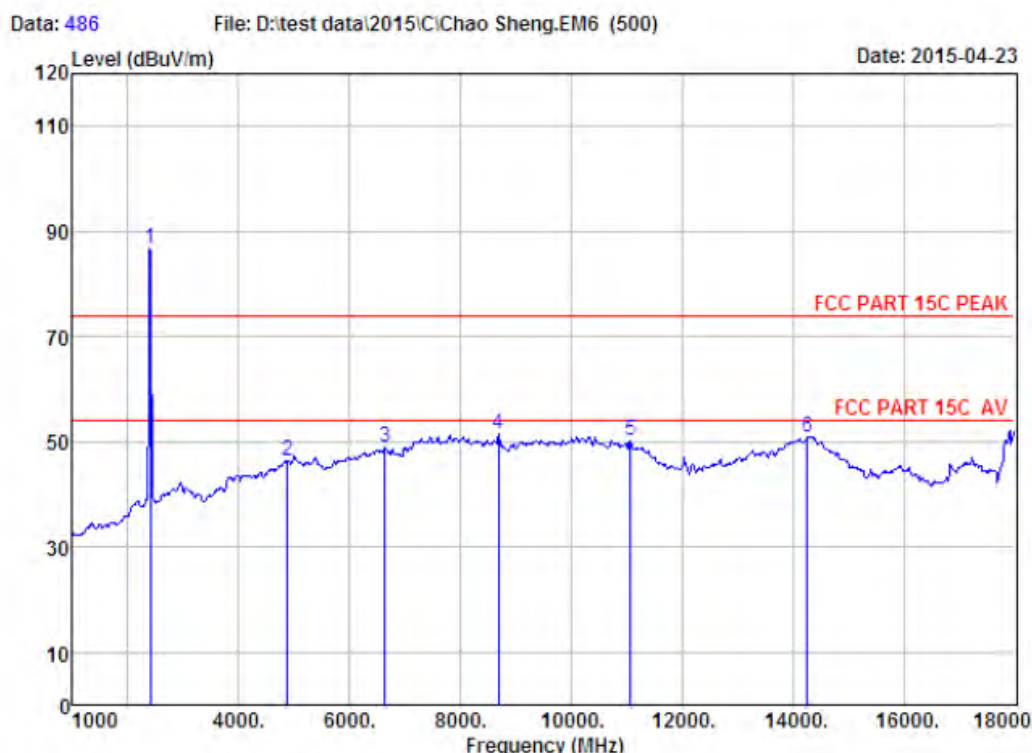


Site no. : 1# 966 chamber Data no. : 229
Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : SeoPlay S3
Test Mode : GFSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	39.70	12.90	0.81	17.42	31.13	40.00	8.87	QP
2	70.74	5.82	1.04	10.93	17.79	40.00	22.21	QP
3	119.24	11.11	1.42	13.27	25.80	43.50	17.70	QP
4	322.94	13.65	2.43	4.72	20.80	46.00	25.20	QP
5	447.10	16.40	2.98	5.66	25.04	46.00	20.96	QP
6	752.65	22.13	3.88	6.88	32.91	46.00	13.09	QP

Figure 49: Test figure of Spurious Emissions (1GHz –25GHz), BLE (Low), H

EST Technology
Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 486
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.61	6.62	34.18	86.74	86.79	74.00	-12.79	Peak
2	4876.00	31.37	12.07	31.90	34.93	46.47	74.00	27.53	Peak
3	6644.00	34.48	12.02	32.20	34.79	49.09	74.00	24.91	Peak
4	8684.00	37.32	11.45	32.43	35.24	51.58	74.00	22.42	Peak
5	11064.00	39.48	11.24	33.78	33.35	50.29	74.00	23.71	Peak
6	14260.00	41.68	10.92	33.19	31.47	50.88	74.00	23.12	Peak

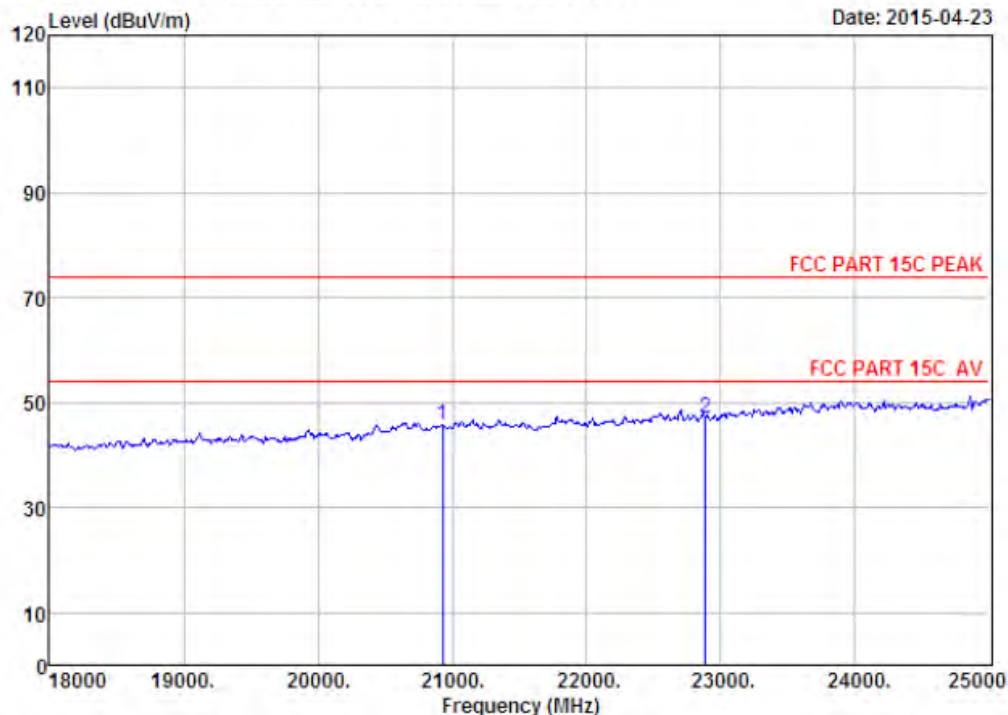
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878

Data: 495 File: D:\test data\2015\CI\Chao Sheng.EM6 (501)

Date: 2015-04-23



Site no. : 1# 966 chamber Data no. : 495
Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2402MHz

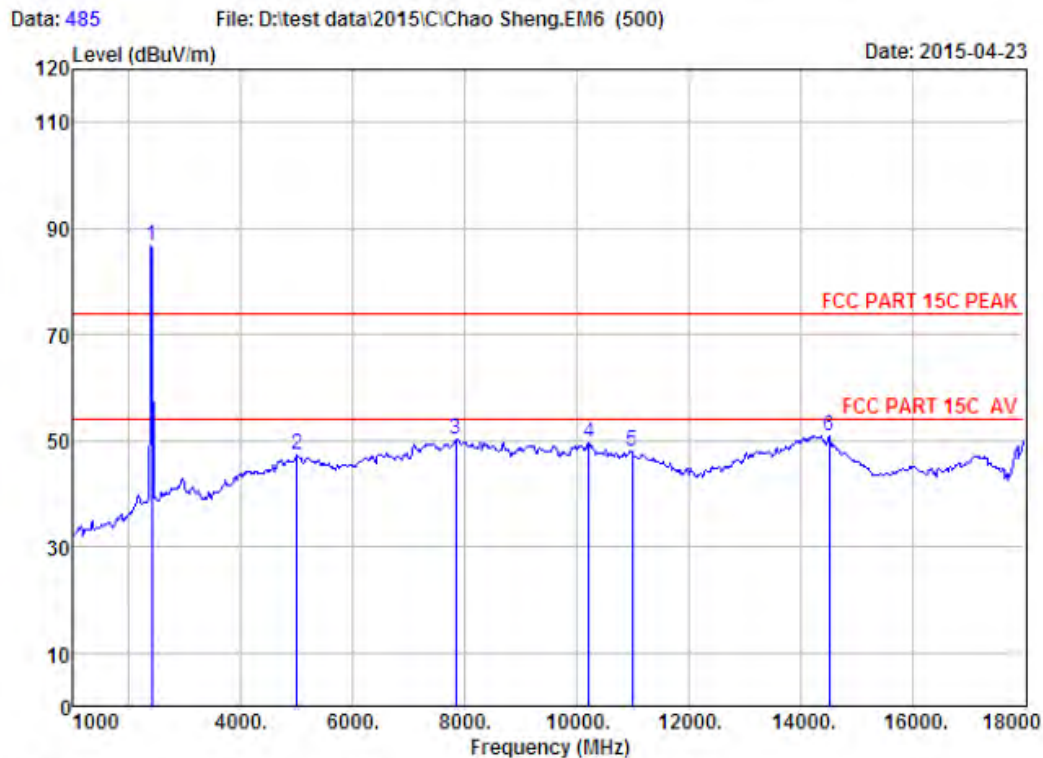
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	20926.00	46.26	20.10	35.87	15.28	45.77	74.00	28.23	Peak
2	22886.00	45.65	21.08	33.98	14.25	47.00	74.00	27.00	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 50: Test figure of Spurious Emissions (1GHz –25GHz), BLE (Low), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



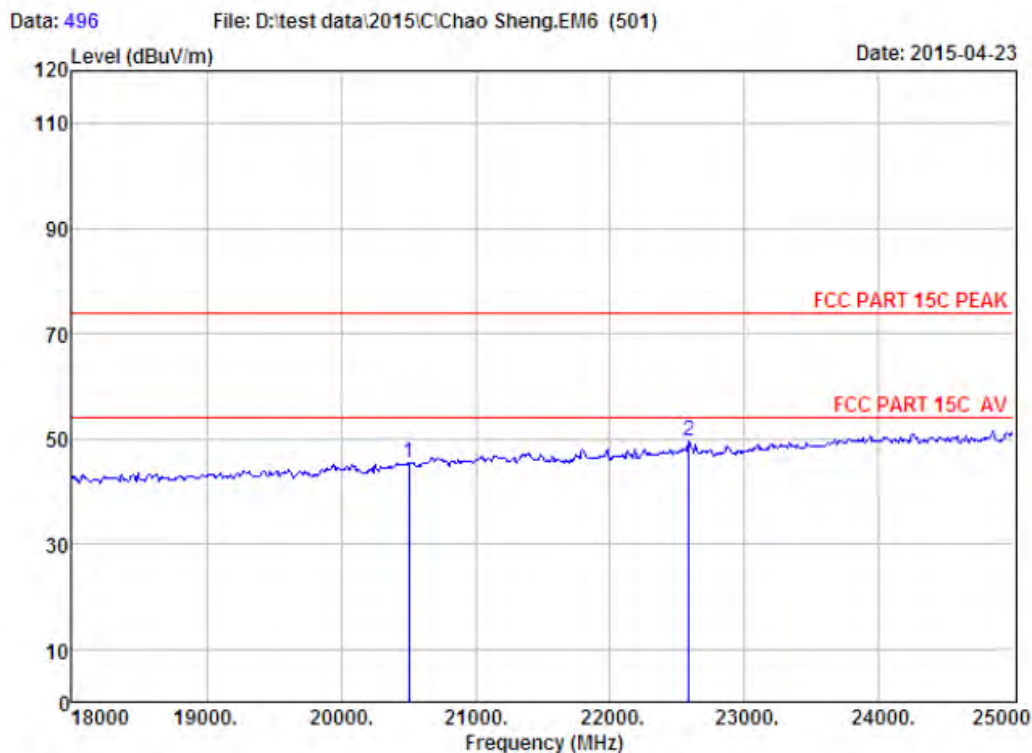
Site no. : 1# 966 chamber Data no. : 485
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.61	6.62	34.18	86.65	86.70	74.00	-12.70	Peak
2	4995.00	31.54	12.59	32.00	35.16	47.29	74.00	26.71	Peak
3	7834.00	36.68	11.47	31.40	33.58	50.33	74.00	23.67	Peak
4	10214.00	38.48	11.47	32.17	31.74	49.52	74.00	24.48	Peak
5	10996.00	39.52	11.29	33.65	30.93	48.09	74.00	25.91	Peak
6	14515.00	41.89	10.93	33.14	31.32	51.00	74.00	23.00	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 496
Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUI : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	20506.00	46.00	19.91	36.25	15.82	45.48	74.00	28.52	Peak
2	22585.00	45.77	20.90	34.30	17.28	49.65	74.00	24.35	Peak

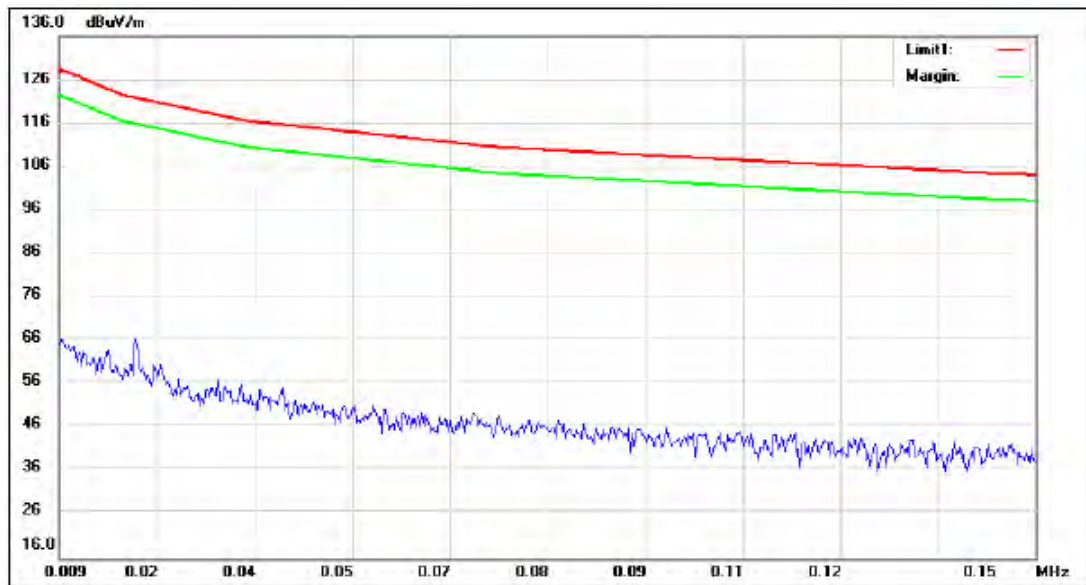
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 51: Test figure of Spurious Emissions (9kHz – 30MHz), BLE (Mid)



966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:25:14
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	GFSK TX 2440MHz		





深圳康来士标准测试技术有限公司
Compliance Certification Services (ShenZhen) Inc.

地址：广东省深圳市宝安区西乡街道16号海城国际商务大厦1011室 TEL: 0755-28058800 FAX: 0755-29864902

966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:27:54
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	GFSK TX 1440MHz		

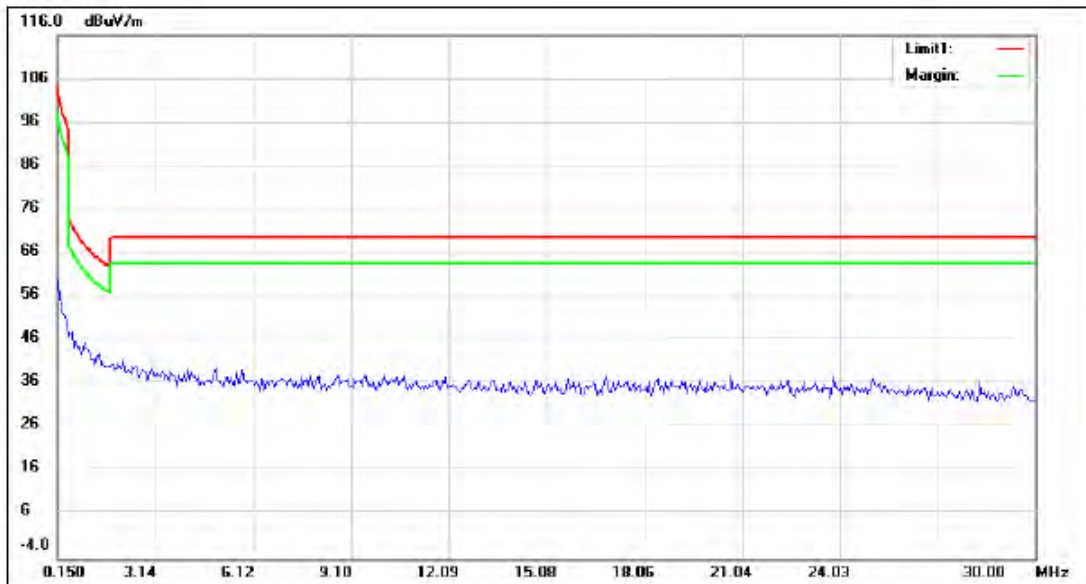
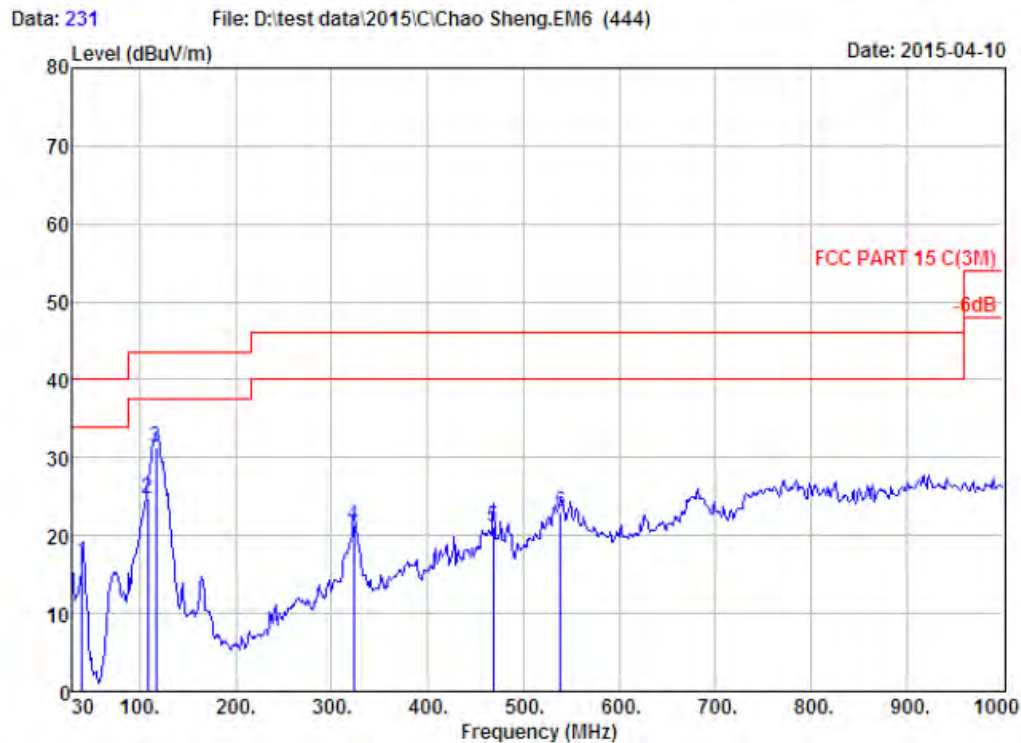


Figure 52: Test figure of Spurious Emissions (30MHz – 1GHz), BLE (Mid), H

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



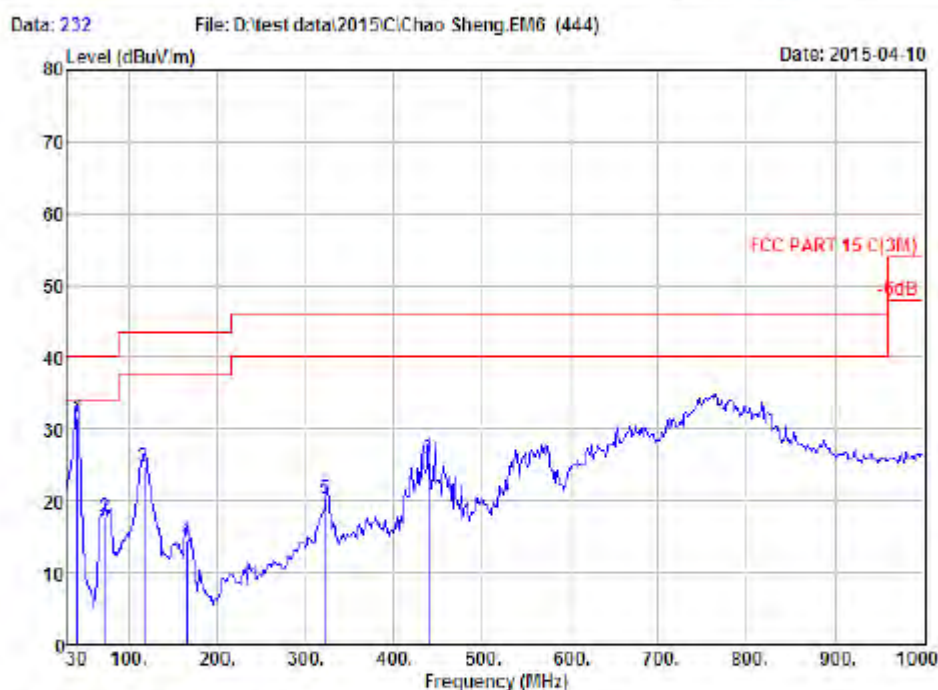
Site no. : 1# 966 chamber Data no. : 231
Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2440MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	39.70	12.90	0.81	2.95	16.66	40.00	23.34	QP
2	108.57	10.34	1.39	13.00	24.73	43.50	18.77	QP
3	117.30	11.02	1.47	18.82	31.31	43.50	12.19	QP
4	322.94	13.65	2.43	5.22	21.30	46.00	24.70	QP
5	465.44	17.14	3.09	0.81	21.04	46.00	24.96	QP
6	539.25	19.35	3.22	0.41	22.98	46.00	23.02	QP

Figure 53: Test figure of Spurious Emissions (30MHz – 1GHz), BLE (Mid), V

EST Technology

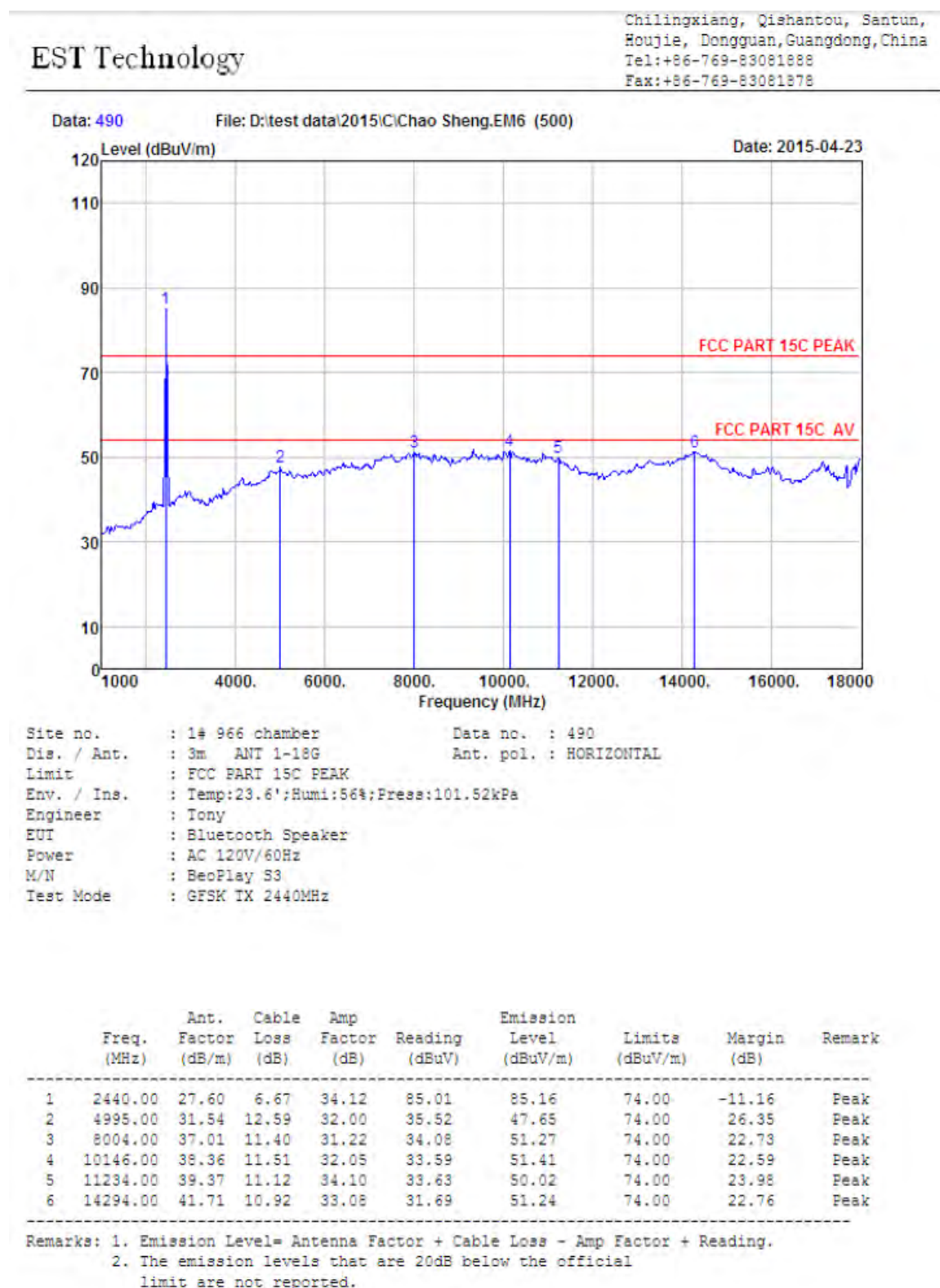
Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 232
Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:23.6°;Hum:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BaoPlay S3
Test Mode : GFSK TX 2440MHz

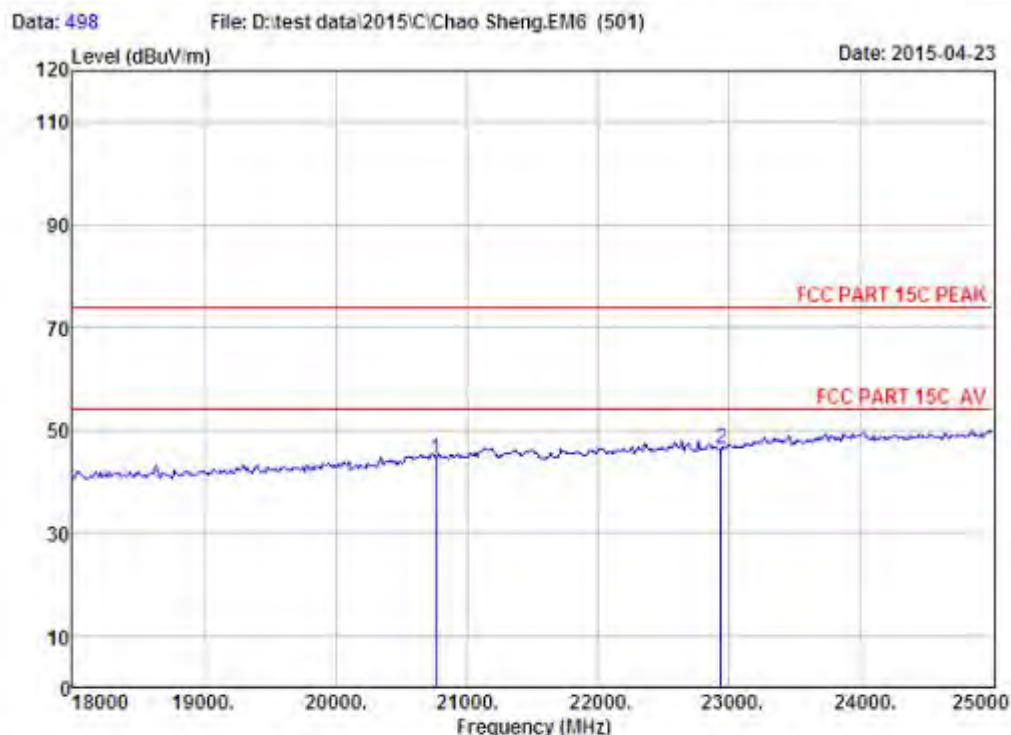
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	41.64	11.75	0.85	18.91	31.51	40.00	8.49	QP
2	73.65	6.22	1.15	10.37	17.74	40.00	22.26	QP
3	117.30	11.02	1.47	12.26	24.75	43.50	18.75	QP
4	165.80	9.66	1.68	3.06	14.40	43.50	29.10	QP
5	322.94	13.65	2.43	4.09	20.17	46.00	25.83	QP
6	439.34	16.23	2.89	6.71	25.83	46.00	20.17	QP

Figure 54: Test figure of Spurious Emissions (1GHz –25GHz), BLE (Mid), H



EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 14 966 chamber Data no. : 498
Dis. / Ant. : 3m ANT ABVDE 18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2440MHz

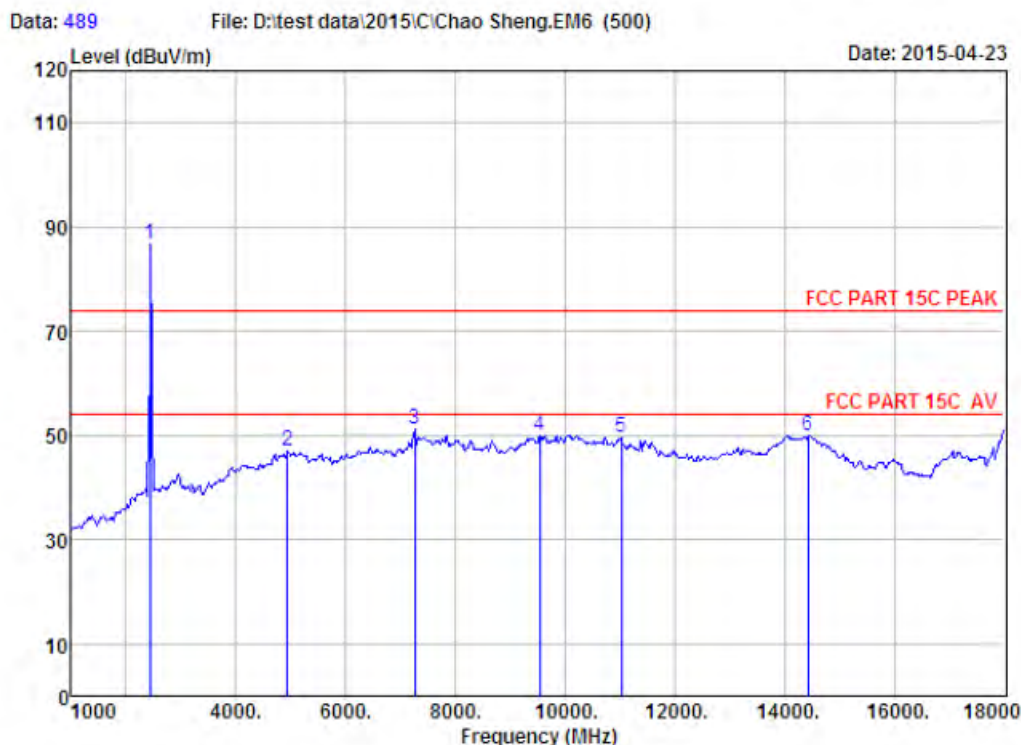
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	20765.00	46.16	20.02	36.00	14.39	44.57	74.00	29.43	Peak
2	22935.00	45.63	21.11	33.93	13.55	46.36	74.00	27.64	Peak

Remarks: 1. Emission level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 55: Test figure of Spurious Emissions (1GHz –25GHz), BLE (Mid), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 489
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°;Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2440MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2440.00	27.60	6.67	34.12	86.52	86.67	74.00	-12.67	Peak
2	4944.00	31.47	12.37	31.96	35.18	47.06	74.00	26.94	Peak
3	7256.00	36.53	11.55	32.06	35.17	51.19	74.00	22.81	Peak
4	9534.00	37.97	11.70	31.92	32.22	49.97	74.00	24.03	Peak
5	11030.00	39.50	11.27	33.71	32.44	49.50	74.00	24.50	Peak
6	14430.00	41.82	10.93	32.84	30.01	49.92	74.00	24.08	Peak

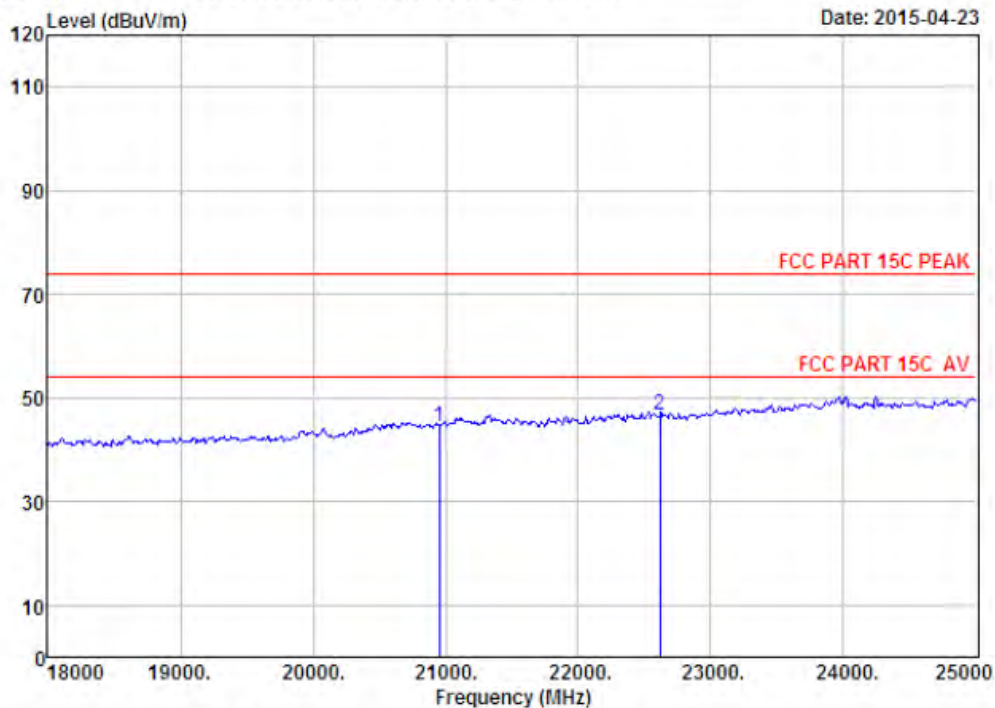
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878

Data: 497 File: D:\test data\2015\CI\Chao Sheng.EM6 (501)

Date: 2015-04-23



Site no. : 1# 966 chamber Data no. : 497
Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2440MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	20954.00	46.27	20.11	35.85	14.01	44.54	74.00	29.46	Peak
2	22613.00	45.75	20.92	34.24	14.42	46.85	74.00	27.15	Peak

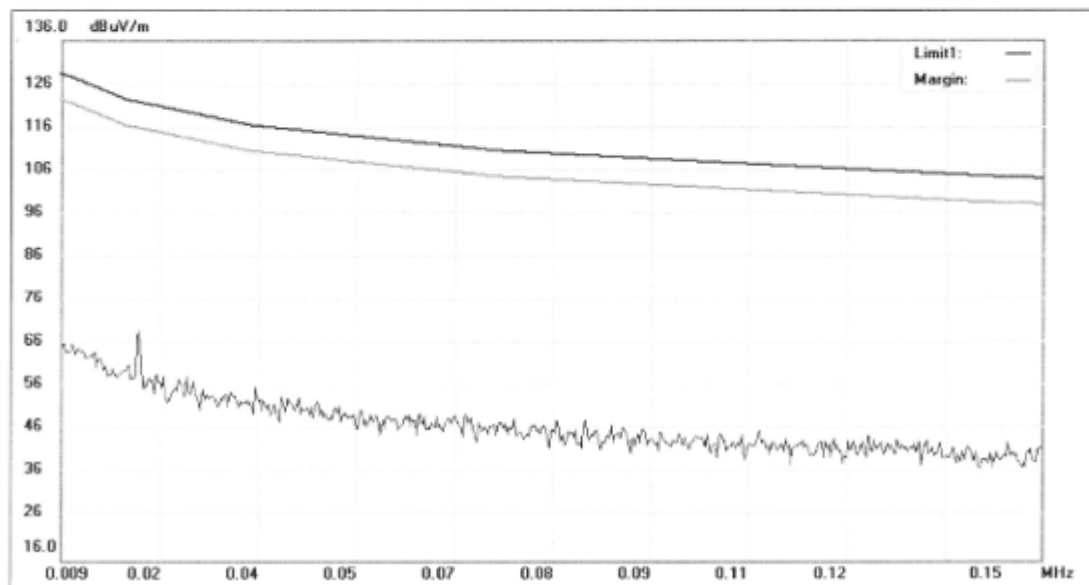
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 56: Test figure of Spurious Emissions (9kHz – 30MHz), BLE (High)



966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:31:05
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	GFSK TX 2480MHz		





深圳康来士标准测试技术有限公司
Compliance Certification Services (ShenZhen) Inc.

地址：广东省深圳市观澜镇环观南路18号弘可达科技园10-1栋 TEL: 0755-28055000 FAX: 0755-29564902

966 (2) Chamber

Job No.:	20150427	Ant.Polar.:	
Standard:	FCC PART 15(9K-30M)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-27	Time:11:29:17
Company:		EUT:	Bluetooth Speaker
Model:	BeoPlay S3	Test By:	
Test Mode:	GFSK TX 2480MHz		

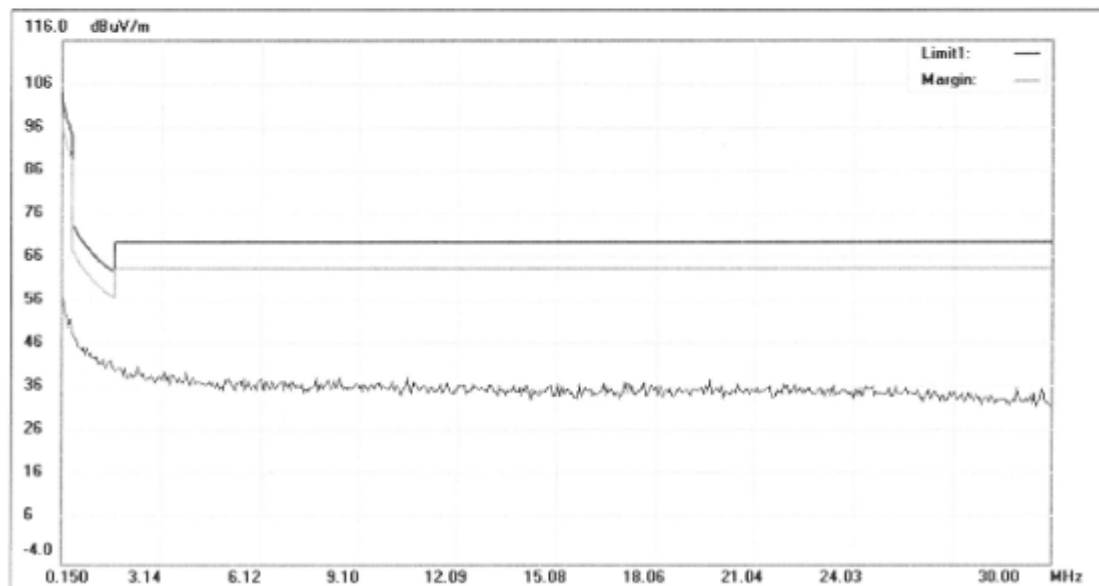
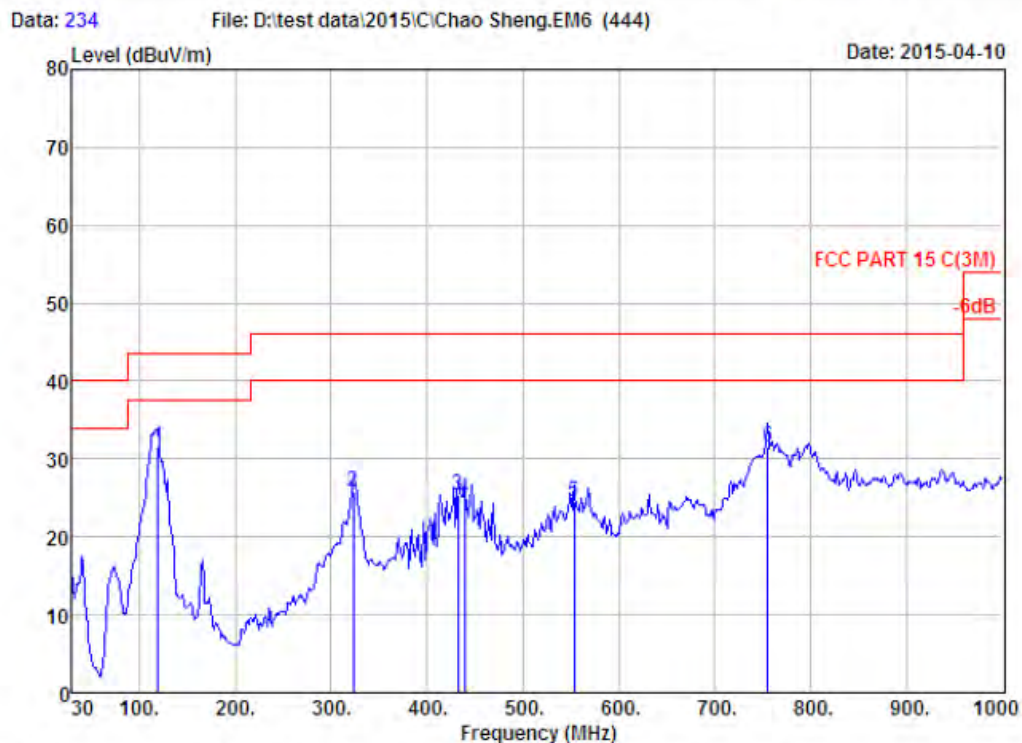


Figure 57: Test figure of Spurious Emissions (30MHz – 1GHz), BLE (High), H

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 234
Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:23.6°;Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	119.24	11.11	1.42	19.12	31.65	43.50	11.85	QP
2	322.94	13.65	2.43	9.77	25.85	46.00	20.15	QP
3	432.55	16.11	2.78	6.51	25.40	46.00	20.60	QP
4	439.34	16.23	2.89	5.86	24.98	46.00	21.02	QP
5	553.80	19.55	3.26	1.77	24.58	46.00	21.42	QP
6	755.56	22.10	3.87	5.61	31.58	46.00	14.42	QP

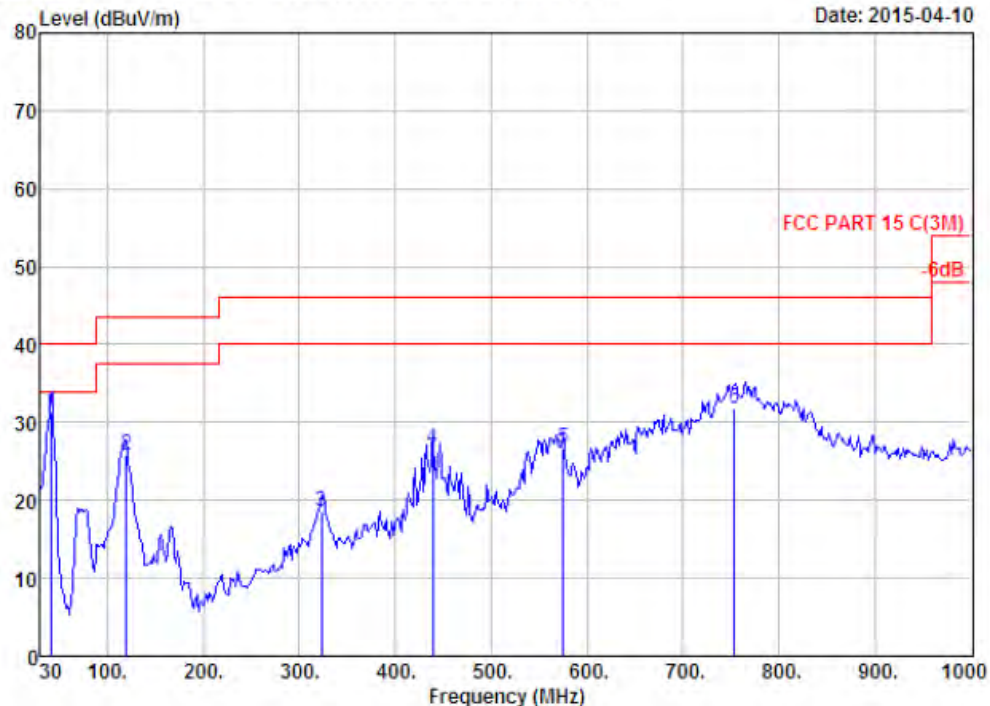
Figure 58: Test figure of Spurious Emissions (30MHz – 1GHz), BLE (High), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878

Data: 233 File: D:\test data\2015\C\Chao Sheng.EM6 (444)

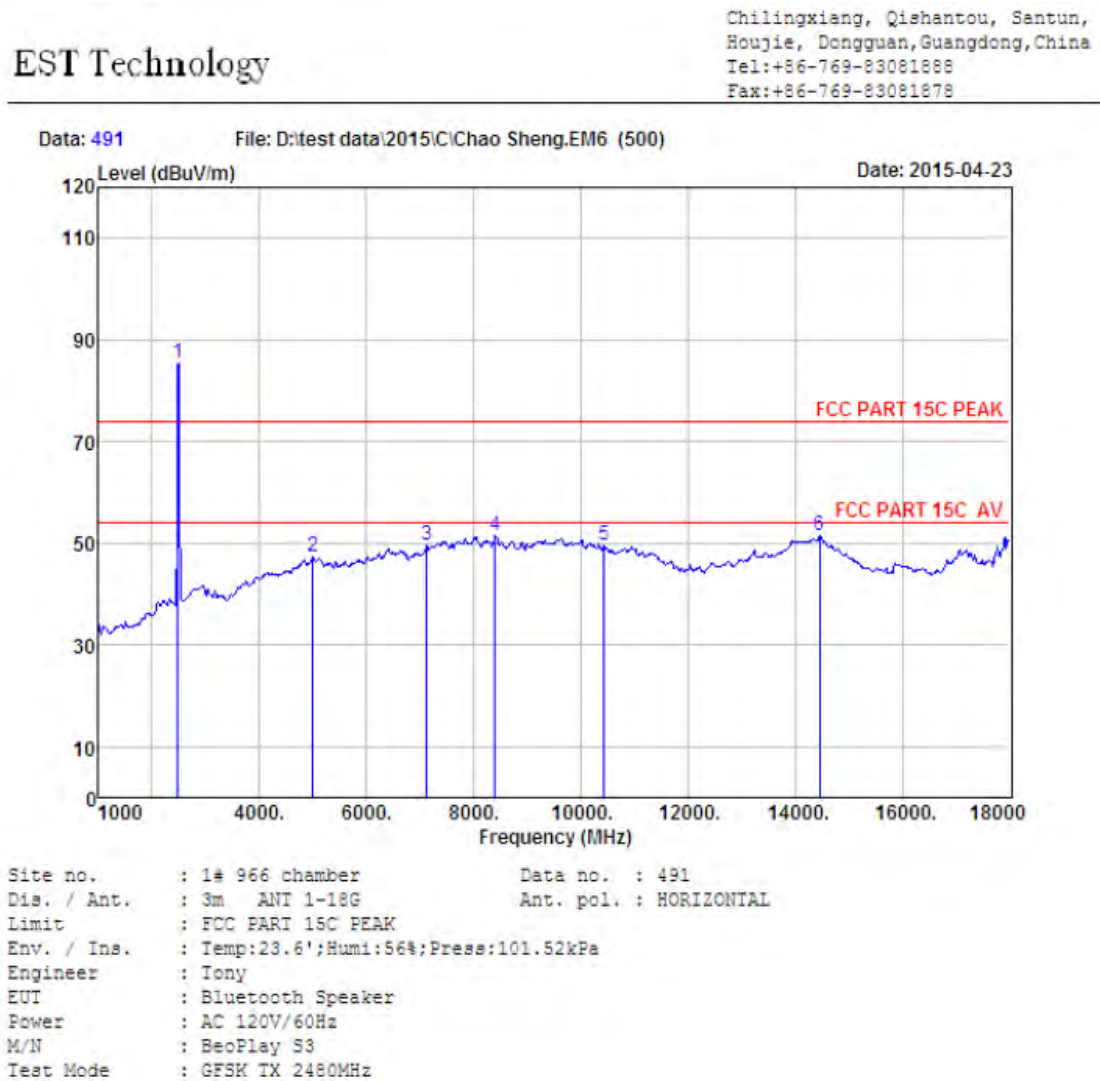
Date: 2015-04-10



Site no. : 1# 966 chamber Data no. : 233
Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:23.6°; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limite (dBuV/m)	Margin (dB)	Remark
1	41.64	11.75	0.85	18.83	31.43	40.00	8.57	QP
2	119.24	11.11	1.42	13.19	25.72	43.50	17.78	QP
3	322.94	13.65	2.43	2.52	18.60	46.00	27.40	QP
4	439.34	16.23	2.89	7.46	26.58	46.00	19.42	QP
5	575.14	19.55	3.40	3.81	26.76	46.00	19.24	QP
6	753.62	22.13	3.90	5.79	31.82	46.00	14.18	QP

Figure 59: Test figure of Spurious Emissions (1GHz –25GHz), BLE (High), H

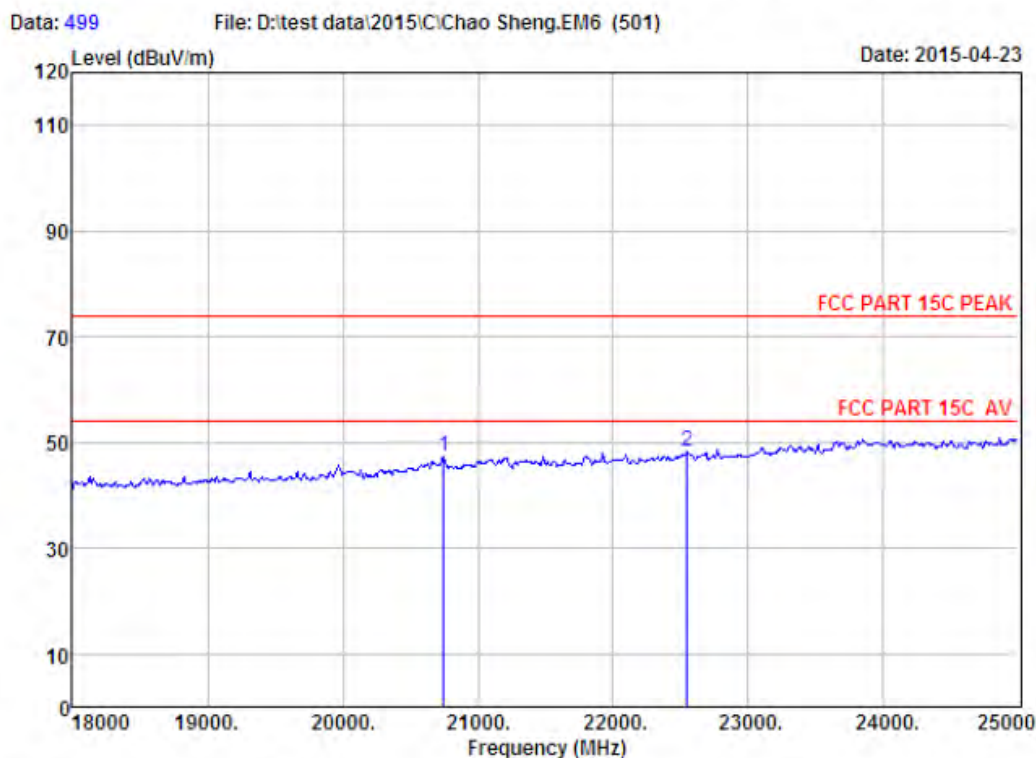


	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2480.00	27.58	6.71	34.03	85.26	85.52	74.00	-11.52	Peak
2	4995.00	31.54	12.59	32.00	35.16	47.29	74.00	26.71	Peak
3	7120.00	36.08	11.51	32.28	34.19	49.50	74.00	24.50	Peak
4	8395.00	36.68	11.44	31.76	35.10	51.46	74.00	22.54	Peak
5	10435.00	38.86	11.35	32.59	31.89	49.51	74.00	24.49	Peak
6	14464.00	41.85	10.93	32.96	31.79	51.61	74.00	22.39	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 499
Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2480MHz

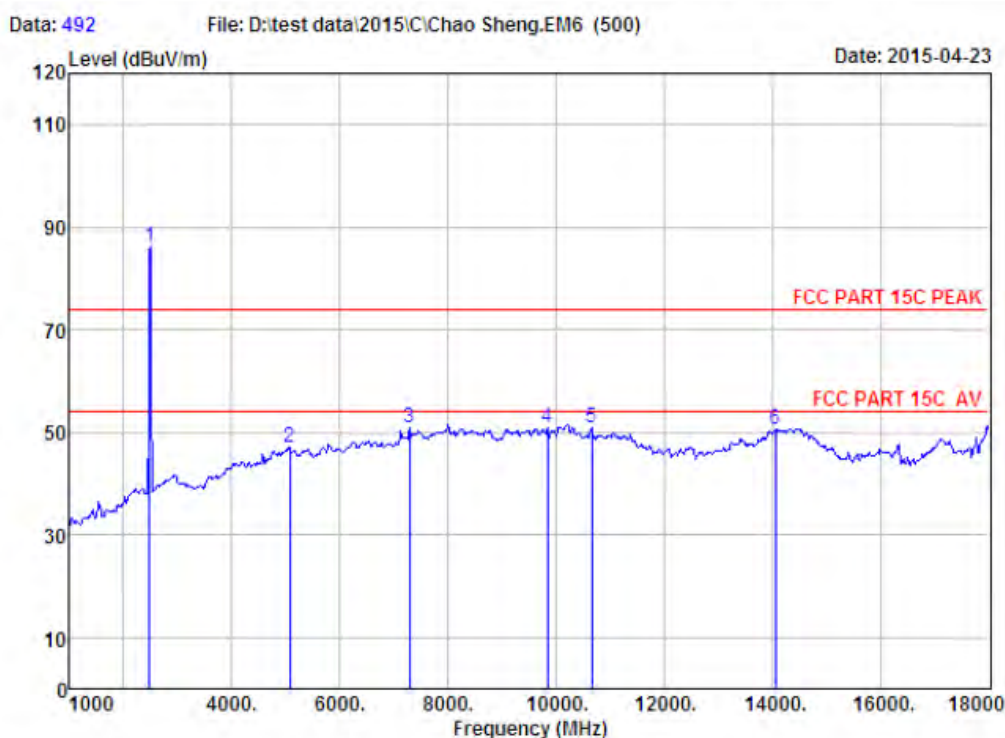
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	20744.00	46.15	20.02	36.03	17.15	47.29	74.00	26.71	Peak
2	22550.00	45.78	20.89	34.32	15.93	48.28	74.00	25.72	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 60: Test figure of Spurious Emissions (1GHz –25GHz), BLE (High), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 492
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.58	6.71	34.03	85.68	85.94	74.00	-11.94	Peak
2	5080.00	31.59	12.49	32.14	35.19	47.13	74.00	26.87	Peak
3	7290.00	36.54	11.56	32.02	34.69	50.77	74.00	23.23	Peak
4	9840.00	38.16	11.63	31.81	32.77	50.75	74.00	23.25	Peak
5	10656.00	39.15	11.30	33.01	33.37	50.81	74.00	23.19	Peak
6	14056.00	41.51	10.90	33.80	32.09	50.70	74.00	23.30	Peak

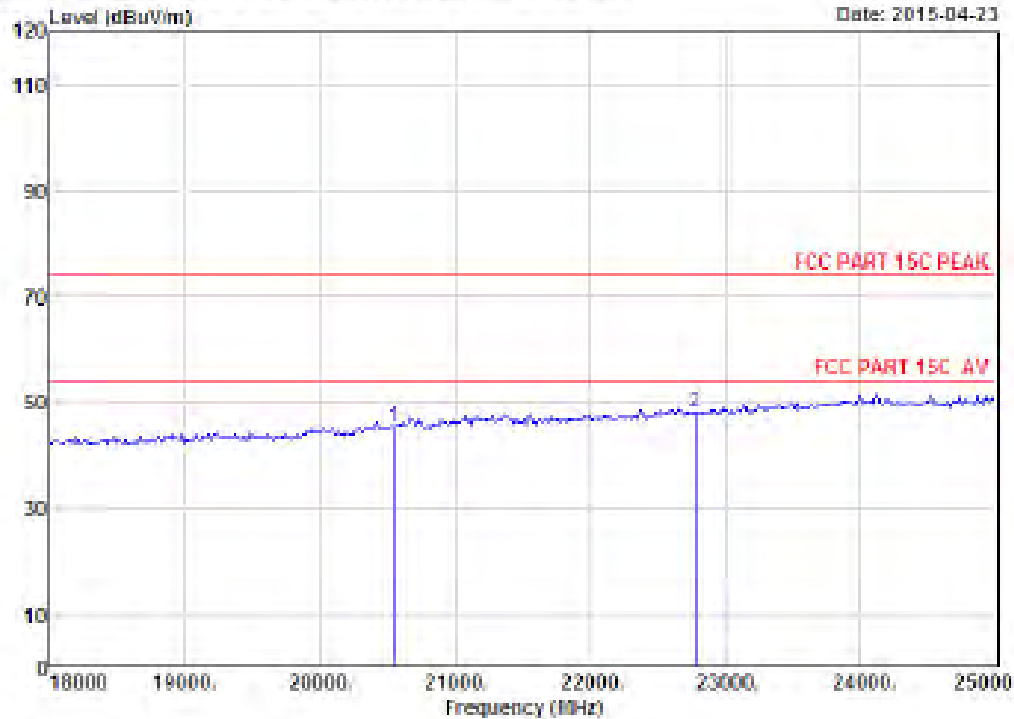
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

EST Technology

Chilingxiang, Qianhenan, Saiton,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83061888
Fax: +86-769-83061878

Data: 500 File: D:\test data\2015\Chao Sheng\EM6 (501)

Date: 2015-04-23



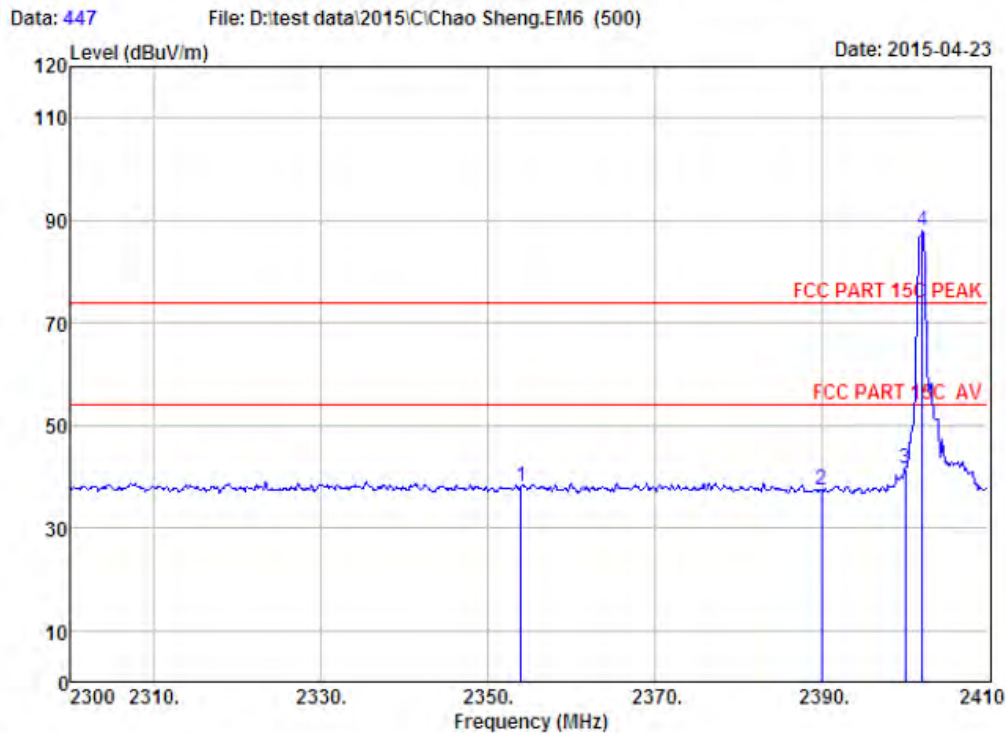
Site no. : 14 966 chamber Data no. : 500
Dis. / Ant. : 3m ANT ABOVE LOS Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp: 28.6° (Env): 66% (Press): 101.62kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
N/D : BeoPlay B3
Test Mode : GSM TX 2490MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	20548.00	46.03	13.98	36.21	15.43	45.23	74.00	28.77	Peak
2	22761.00	45.63	21.02	34.09	15.23	47.85	74.00	26.15	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official
limit are not recorded.

Figure 61: Test figure of Radiated Emissions in Restricted Bands, BDR (Low), H

EST Technology
Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 447
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°;Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2402MHz(No Hopping)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2354.01	27.70	6.58	34.22	38.07	38.13	74.00	35.87	Peak
2	2390.00	27.64	6.62	34.19	37.47	37.54	74.00	36.46	Peak
3	2400.00	27.61	6.62	34.18	41.66	41.71	74.00	32.29	Peak
4	2402.08	27.61	6.62	34.18	87.80	87.85	74.00	-13.85	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 62: Test figure of Radiated Emissions in Restricted Bands, BDR (Low), V

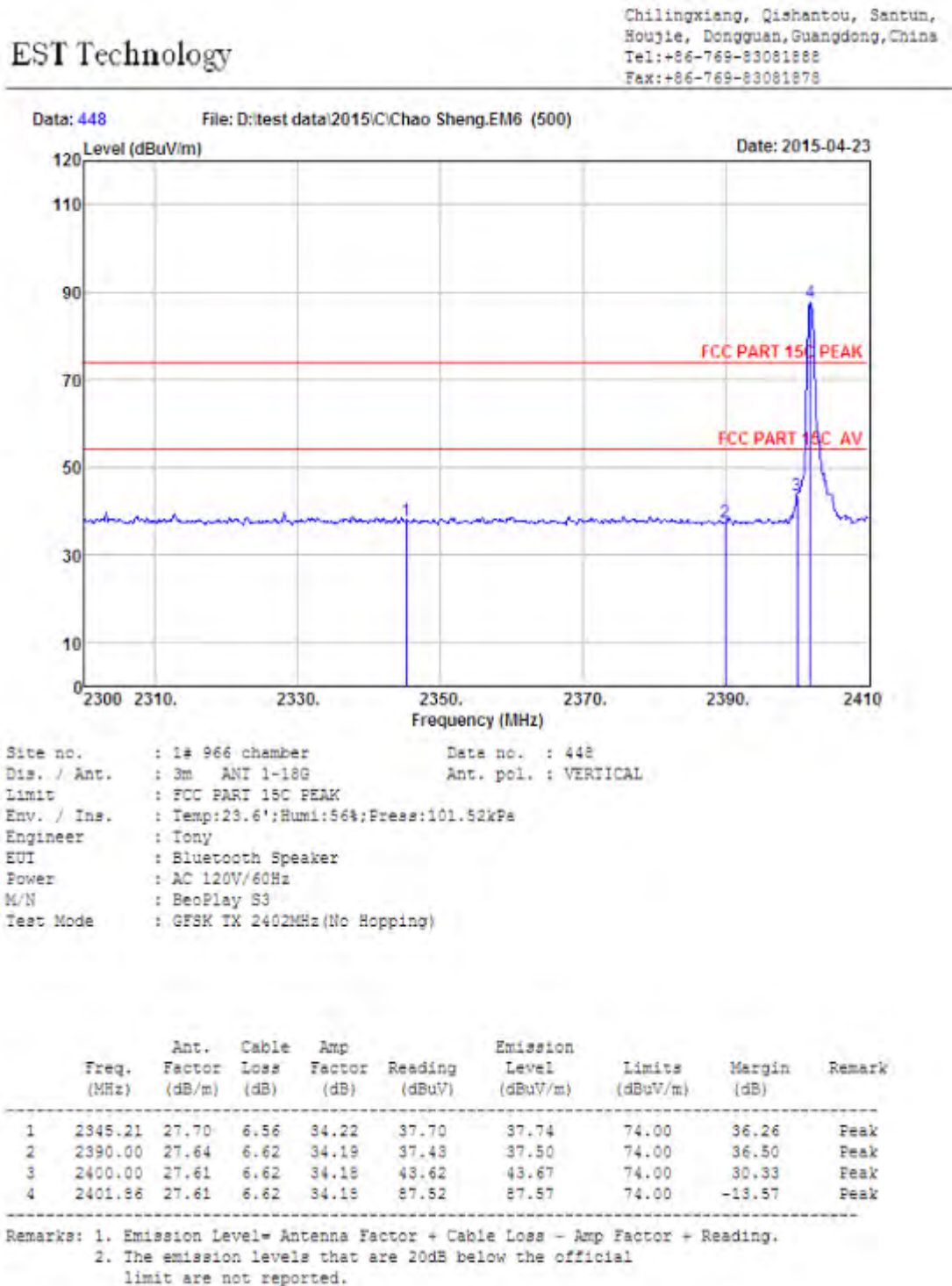
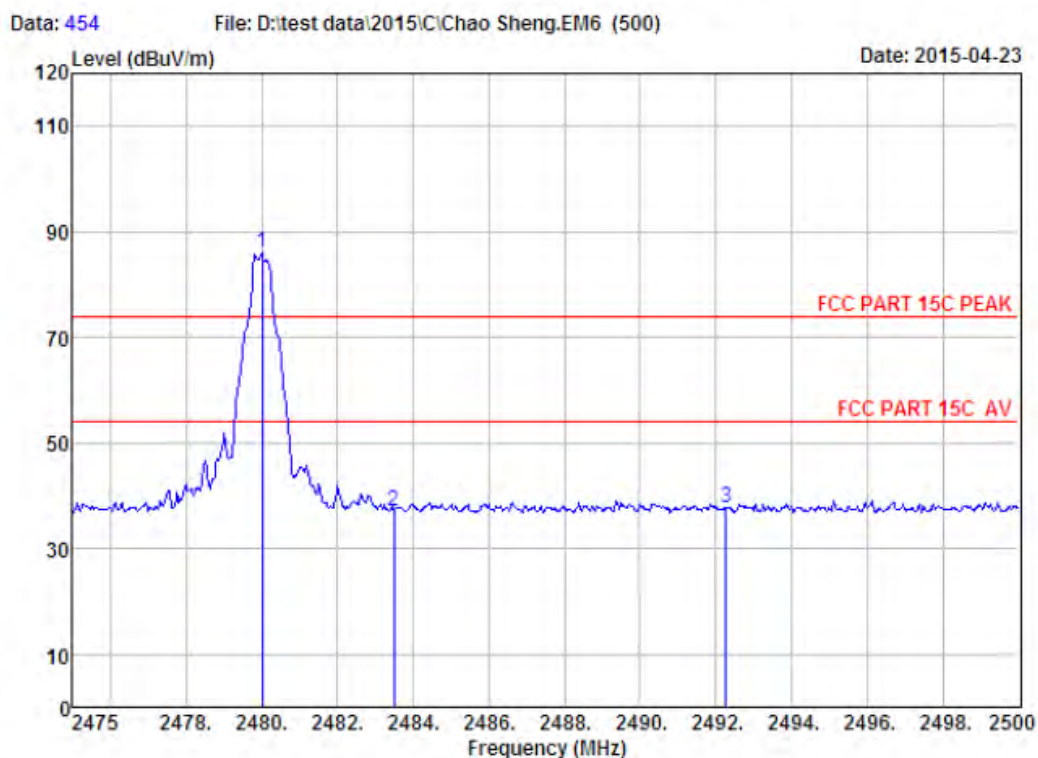


Figure 63: Test figure of Radiated Emissions in Restricted Bands, BDR (High), H

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



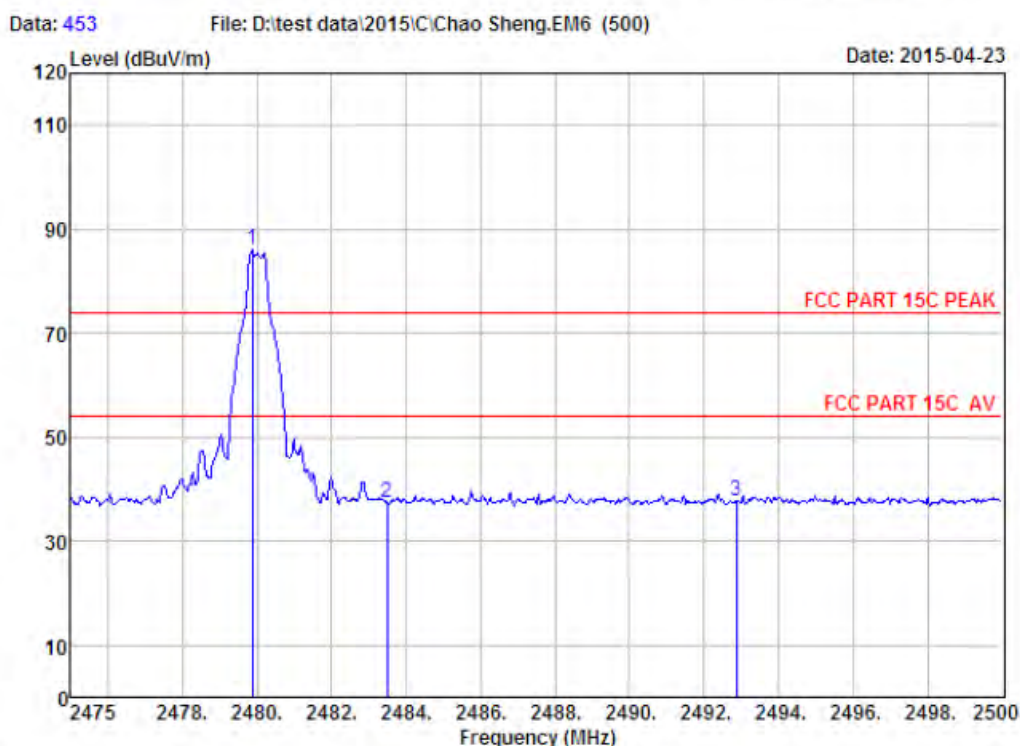
Site no. : 1# 966 chamber Data no. : 454
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUI : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2480MHz (No Hopping)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2480.00	27.58	6.71	34.03	85.70	85.96	74.00	-11.96	Peak
2	2483.50	27.58	6.71	34.03	36.98	37.24	74.00	36.76	Peak
3	2492.28	27.58	6.73	34.03	37.53	37.81	74.00	36.19	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 64: Test figure of Radiated Emissions in Restricted Bands, BDR (High), V

EST Technology
Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 453
Dis. / Ant. : 3m ANT 1-16G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2480MHz (No Hopping)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.88	27.58	6.71	34.03	85.74	86.00	74.00	-12.00	Peak
2	2483.50	27.58	6.71	34.03	37.11	37.37	74.00	36.63	Peak
3	2492.88	27.58	6.73	34.03	37.59	37.87	74.00	36.13	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 65: Test figure of Radiated Emissions in Restricted Bands, EDR (Low), H

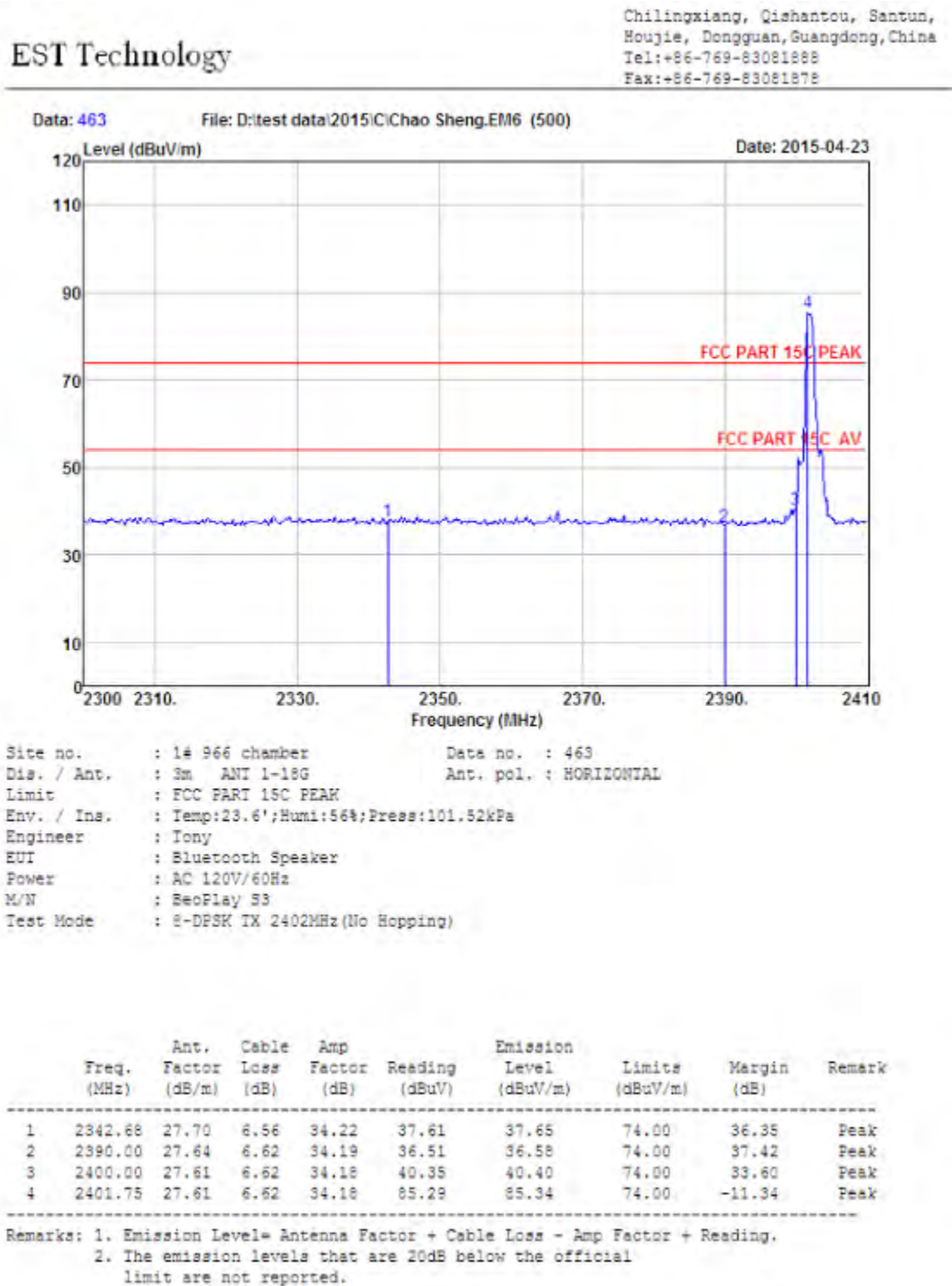
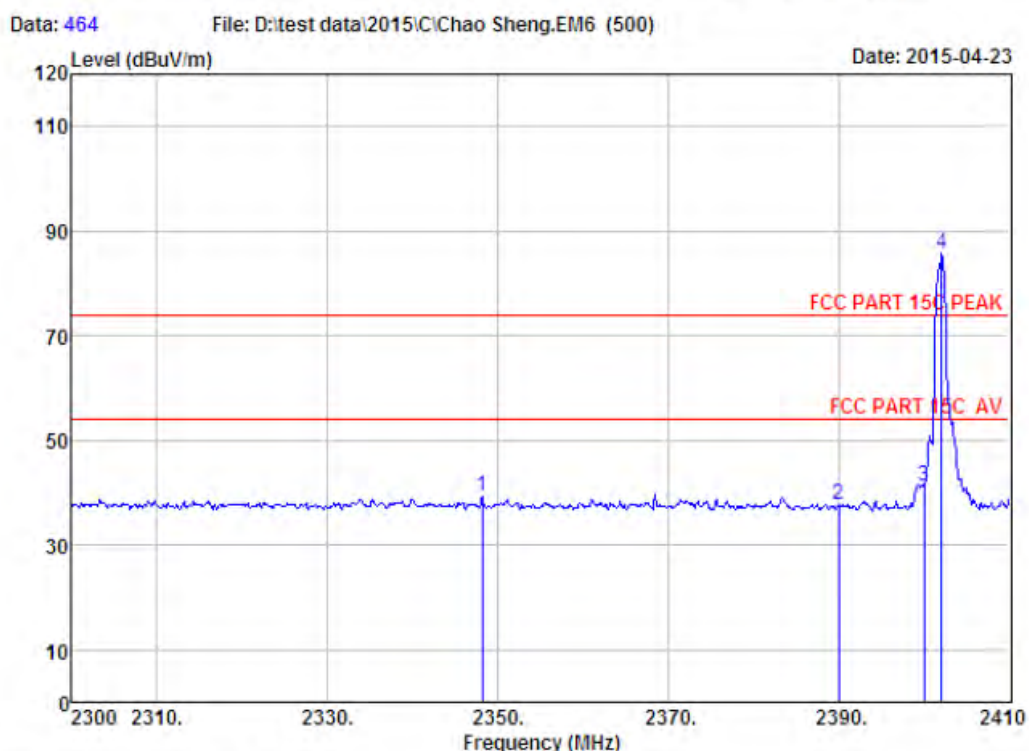


Figure 66: Test figure of Radiated Emissions in Restricted Bands, EDR (Low), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 464
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6°; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2402MHz(No Hopping)

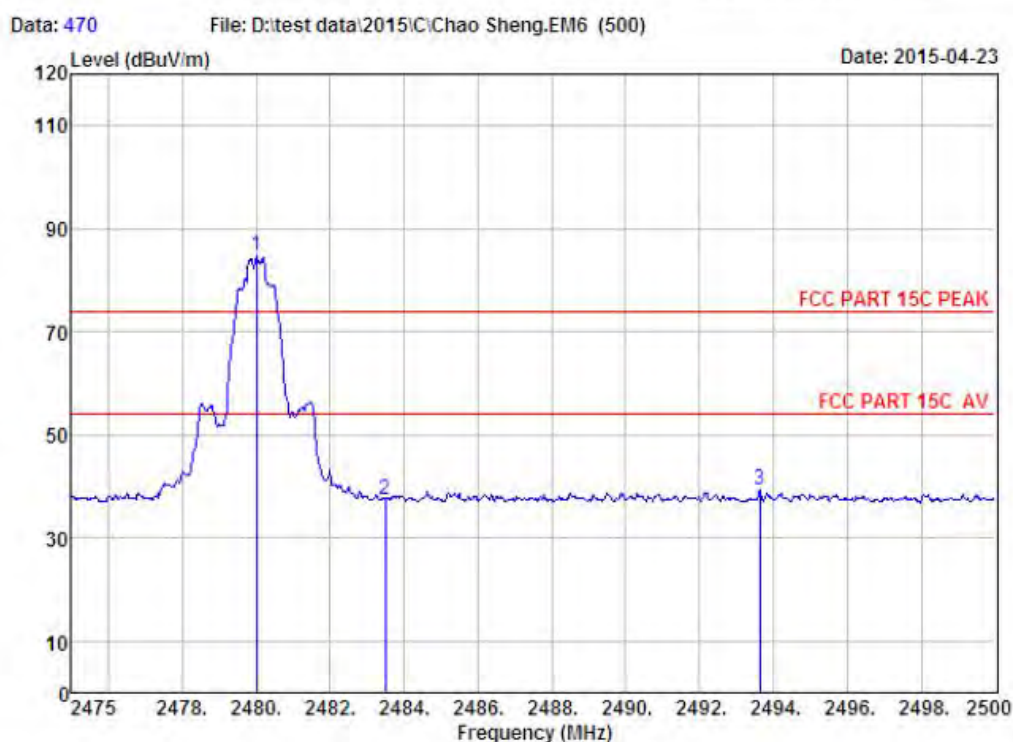
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2348.18	27.70	6.56	34.22	39.41	39.45	74.00	34.55	Peak
2	2390.00	27.64	6.62	34.19	37.65	37.72	74.00	36.28	Peak
3	2400.00	27.61	6.62	34.18	41.30	41.35	74.00	32.65	Peak
4	2402.08	27.61	6.62	34.18	85.58	85.63	74.00	-11.63	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 67: Test figure of Radiated Emissions in Restricted Bands, EDR (High), H

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 470
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2480MHz (No Hopping)

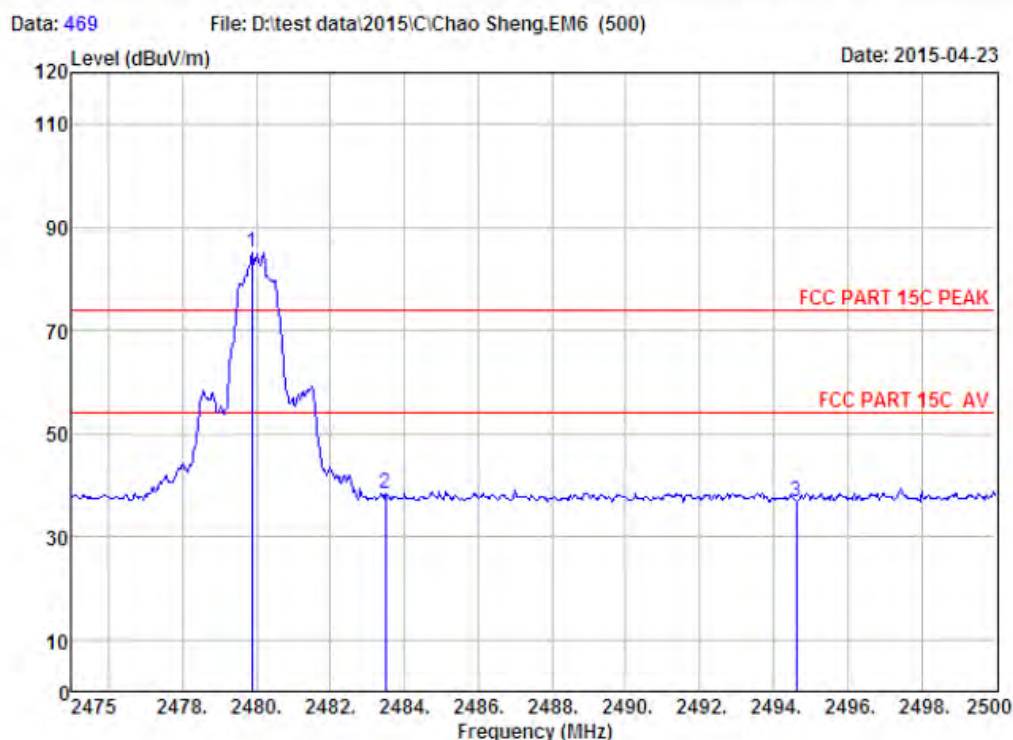
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.58	6.71	34.03	84.58	84.84	74.00	-10.84	Peak
2	2483.50	27.58	6.71	34.03	37.22	37.48	74.00	36.52	Peak
3	2493.63	27.58	6.73	34.03	39.14	39.42	74.00	34.58	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 68: Test figure of Radiated Emissions in Restricted Bands, EDR (High), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 469
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUI : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : 8-DPSK TX 2480MHz (No Hopping)

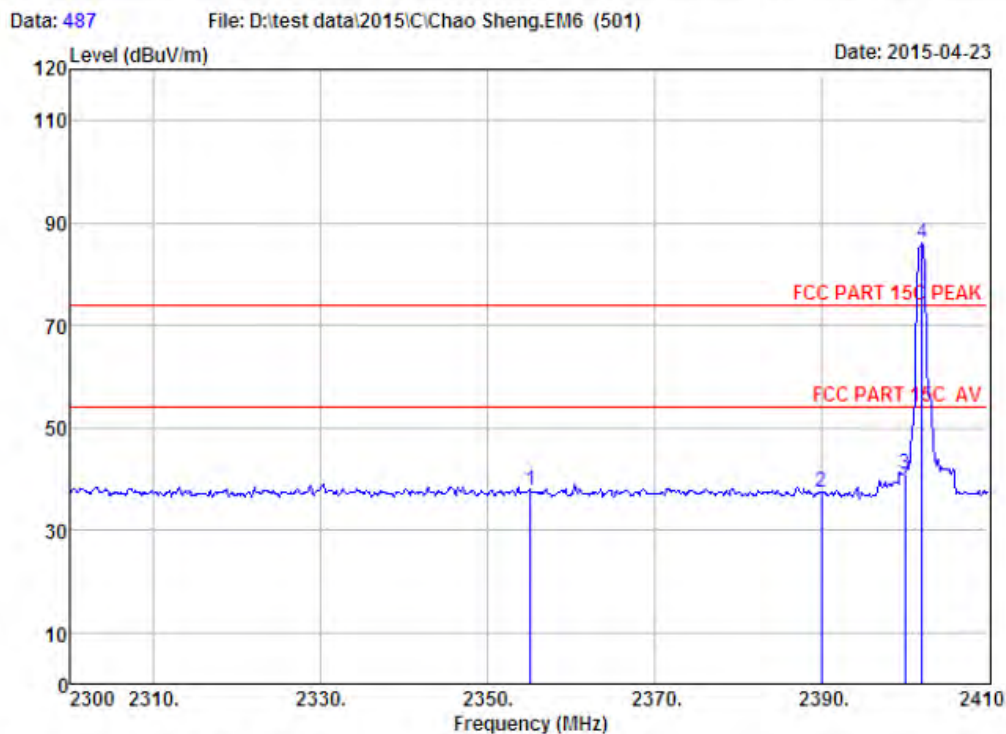
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.88	27.58	6.71	34.03	84.91	85.17	74.00	-11.17	Peak
2	2483.50	27.58	6.71	34.03	37.98	38.24	74.00	35.76	Peak
3	2494.60	27.57	6.73	34.00	36.66	36.96	74.00	37.04	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 69: Test figure of Radiated Emissions in Restricted Bands, BLE (Low), H

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 487
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2402MHz

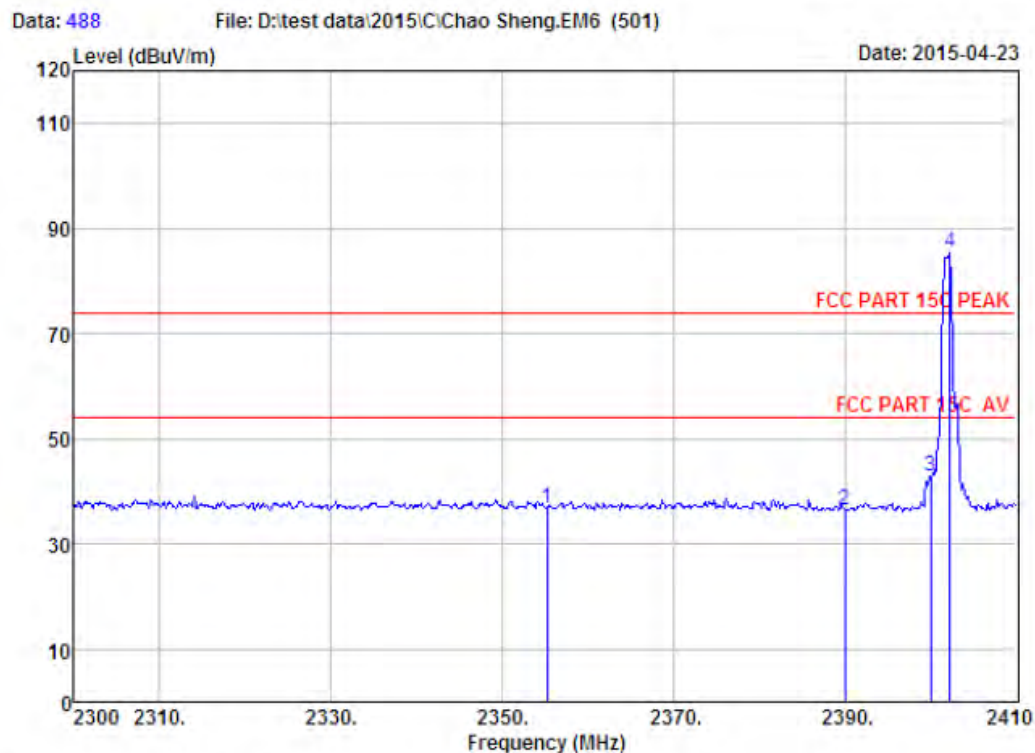
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2355.11	27.70	6.58	34.22	37.58	37.64	74.00	36.36	Peak
2	2390.00	27.64	6.62	34.19	37.33	37.40	74.00	36.60	Peak
3	2400.00	27.61	6.62	34.18	41.03	41.08	74.00	32.92	Peak
4	2402.08	27.61	6.62	34.18	86.05	86.10	74.00	-12.10	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 70: Test figure of Radiated Emissions in Restricted Bands, BLE (Low), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



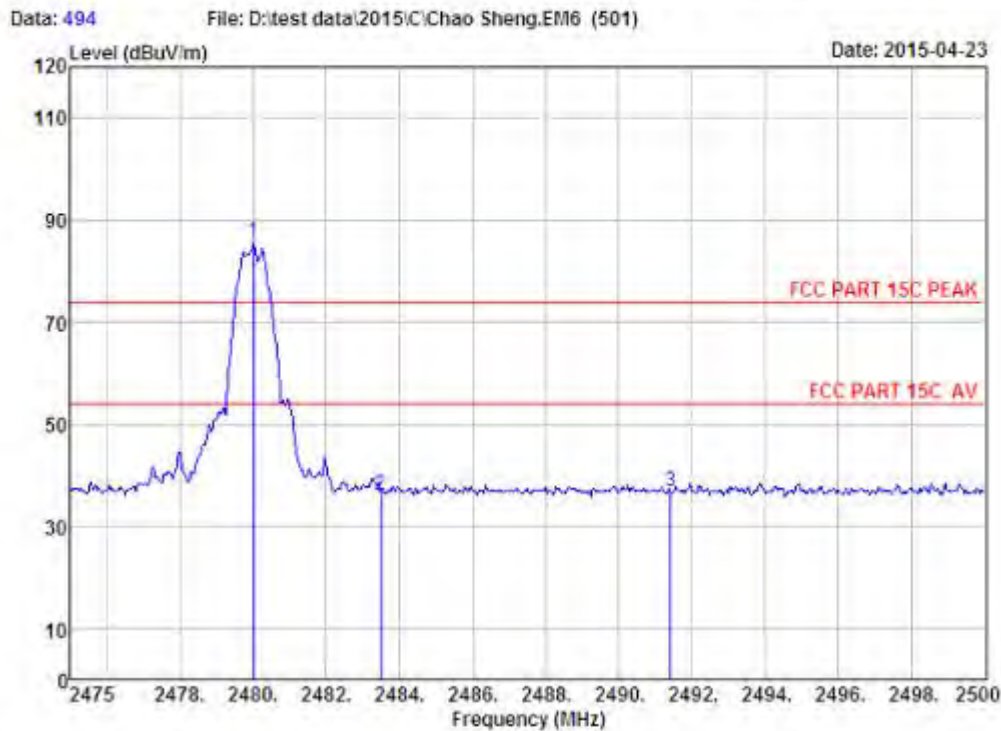
Site no. : 1# 966 chamber Data no. : 488
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2355.22	27.70	6.58	34.22	36.82	36.88	74.00	37.12	Peak
2	2390.00	27.64	6.62	34.19	36.40	36.47	74.00	37.53	Peak
3	2400.00	27.61	6.62	34.18	42.93	42.98	74.00	31.02	Peak
4	2402.30	27.61	6.62	34.18	85.23	85.28	74.00	-11.28	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 71: Test figure of Radiated Emissions in Restricted Bands, BLE (High), H

EST Technology
Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 494
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6° Humi:56% Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2480MHz

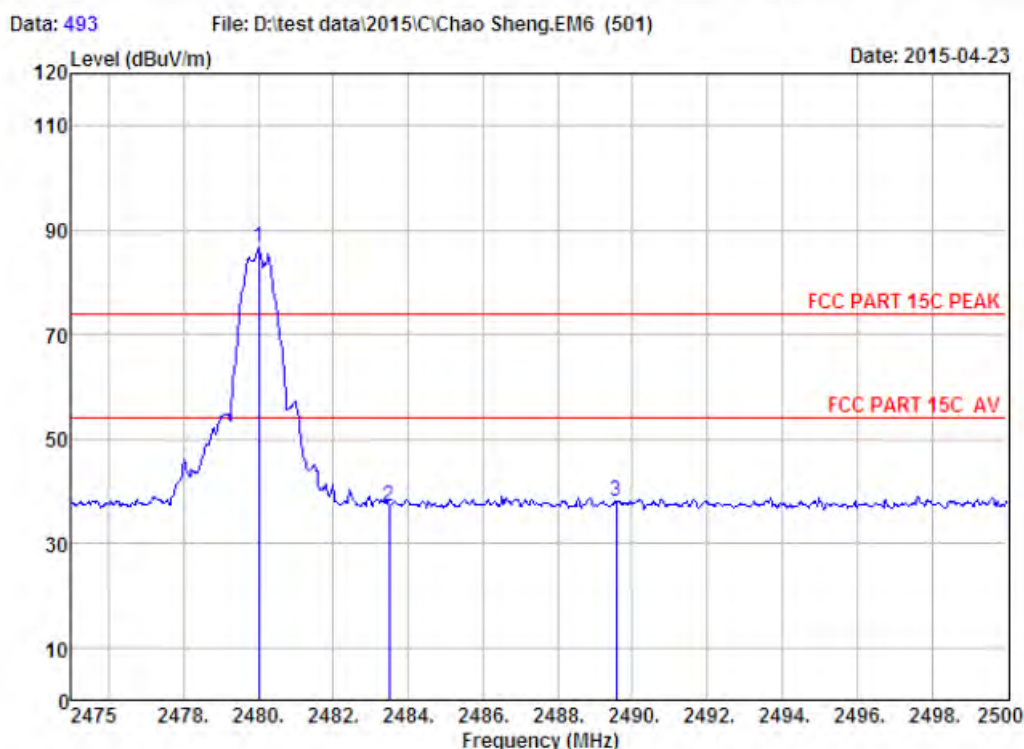
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.58	6.71	34.03	85.45	85.71	74.00	-11.71	Peak
2	2483.50	27.58	6.71	34.03	36.02	36.28	74.00	37.72	Peak
3	2491.43	27.58	6.73	34.03	36.60	36.86	74.00	37.12	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 72: Test figure of Radiated Emissions in Restricted Bands, BLE (High), V

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no. : 1# 966 chamber Data no. : 493
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa
Engineer : Tony
EUI : Bluetooth Speaker
Power : AC 120V/60Hz
M/N : BeoPlay S3
Test Mode : GFSK TX 2480MHz

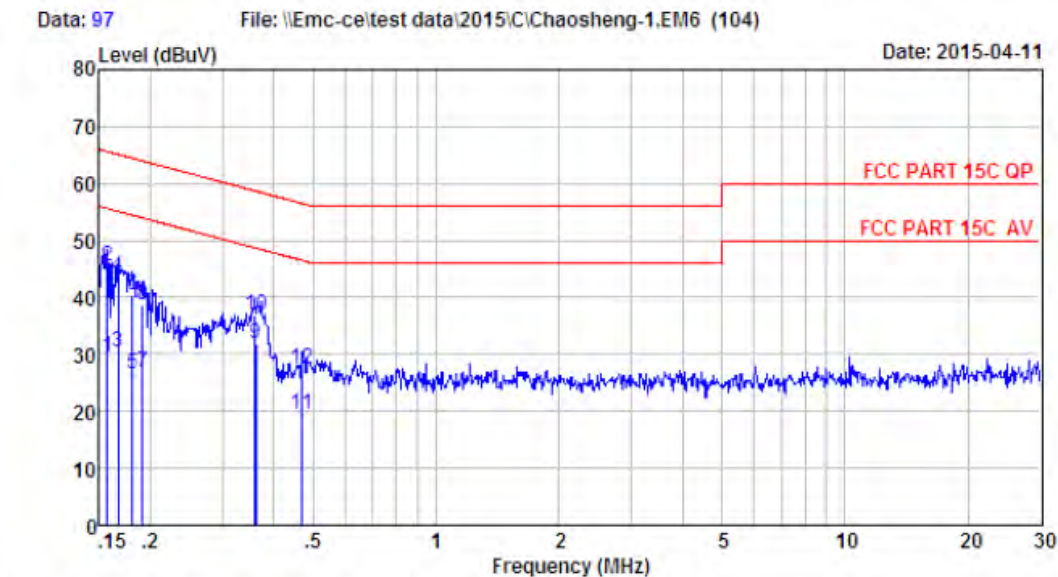
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.58	6.71	34.03	86.50	86.76	74.00	-12.76	Peak
2	2483.50	27.58	6.71	34.03	36.71	36.97	74.00	37.03	Peak
3	2489.58	27.58	6.73	34.03	37.83	38.11	74.00	35.89	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Figure 73: Test figure of Conducted Emissions, Mode C line live

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



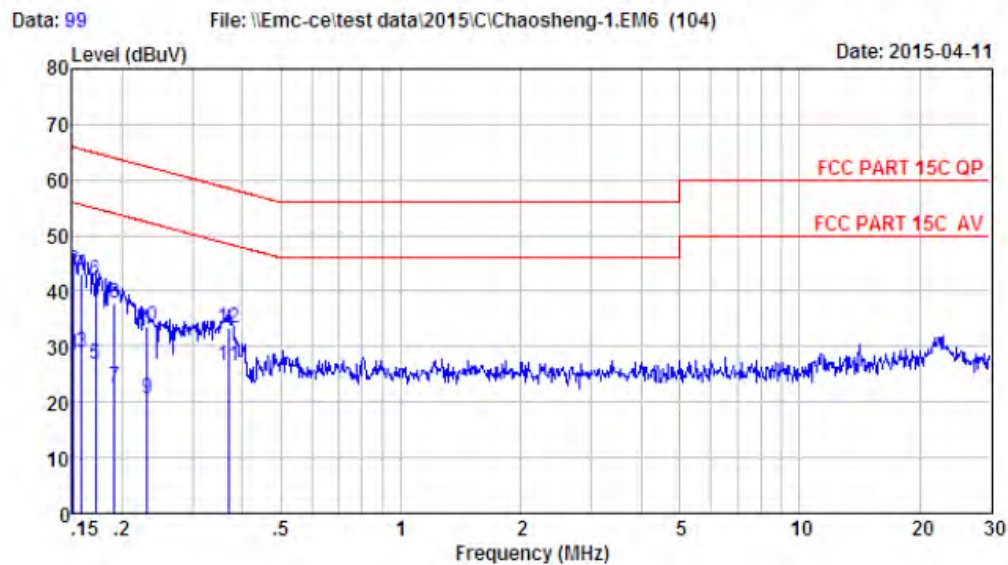
Site no : 844 Shield Room
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa LINE
Limit : FCC PART 15C QP
Engineer : Tony
EUT : Bluetooth Speaker
M/N : AC 120V/60Hz
Power : BeoPlay S3
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	0.16	9.61	9.81	9.98	29.40	55.65	26.25	Average
2	0.16	9.61	9.81	25.98	45.40	65.65	20.25	QP
3	0.17	9.61	9.81	11.13	30.55	55.12	24.57	Average
4	0.17	9.61	9.81	24.13	43.55	65.12	21.57	QP
5	0.18	9.61	9.80	7.09	26.50	54.46	27.96	Average
6	0.18	9.61	9.80	21.09	40.50	64.46	23.96	QP
7	0.19	9.61	9.80	7.37	26.78	53.98	27.20	Average
8	0.19	9.61	9.80	19.37	38.78	63.98	25.20	QP
9	0.36	9.61	9.82	12.42	31.85	48.69	16.84	Average
10	0.36	9.61	9.82	17.42	36.85	58.69	21.84	QP
11	0.47	9.61	9.81	0.02	19.44	46.49	27.05	Average
12	0.47	9.61	9.81	8.02	27.44	56.49	29.05	QP

Figure 74: Test figure of Conducted Emissions, Mode C line neutral

EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



Site no : 844 Shield Room
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa NEUTRAL
Limit : FCC PART 15C QP
Engineer : Tony
EUT : Bluetooth Speaker
M/N : AC 120V/60Hz
Power : BeoPlay S3
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	0.15	9.46	9.81	9.33	28.60	55.96	27.36	Average
2	0.15	9.46	9.81	24.33	43.60	65.96	22.36	QP
3	0.16	9.48	9.81	9.68	28.97	55.56	26.59	Average
4	0.16	9.48	9.81	23.68	42.97	65.56	22.59	QP
5	0.17	9.52	9.81	7.47	26.80	54.90	28.10	Average
6	0.17	9.52	9.81	22.47	41.80	64.90	23.10	QP
7	0.19	9.58	9.80	3.35	22.73	53.98	31.25	Average
8	0.19	9.58	9.80	18.35	37.73	63.98	26.25	QP
9	0.23	9.60	9.80	1.23	20.63	52.39	31.76	Average
10	0.23	9.60	9.80	14.23	33.63	62.39	28.76	QP
11	0.37	9.59	9.82	7.09	26.50	48.47	21.97	Average
12	0.37	9.59	9.82	14.09	33.50	58.47	24.97	QP